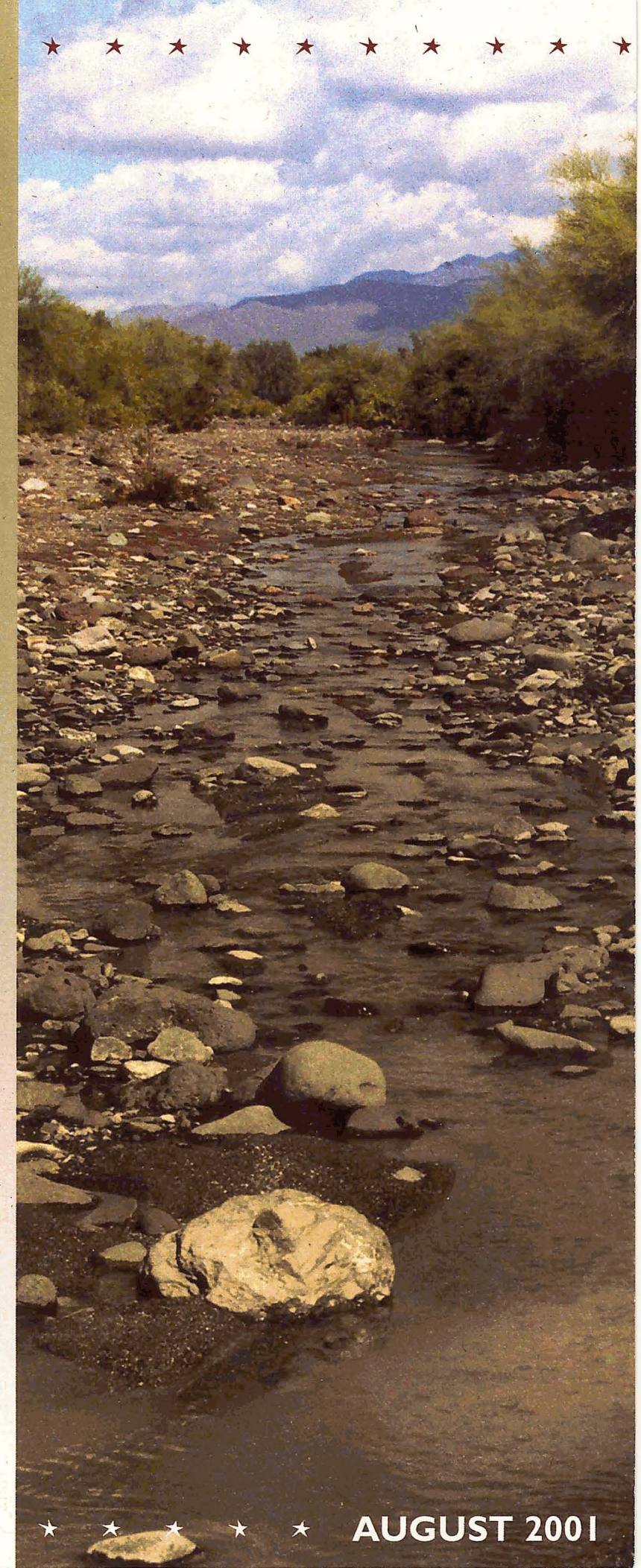
Skunk Creek

Watercourse Master Plan

ATTACHMENT 4

HYDRAULICS REPORT

Flood Control District of Maricopa County



AUGUST 2001

SKUNK CREEK WATERCOURSE MASTER PLAN

Attachment 4

Hydraulics
Technical Data Notebook

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PREPARED BY:

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July 2001

STANTEC CONSULTING Inc.
Project No. 82000141

Contract # FCD 99-23

Registered Professional Engineer (Civil)
CERTIFICATE NO.
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PATRICK J.
ELLISON
Date Signed
ARIZONA U.S.A.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY 1959

Stantec

SKUNK CREEK WATERCOURSE MASTER PLAN

ATTACHMENT 3

HYDROLOGY REPORT

Book 1 of 1

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Prepared for:
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4-1.0 INTRODUCTION

4-1.1 PURPOSE OF REPORT

This report, Skunk Creek Watercourse Master Plan, Attachment 4 Hydraulics, Technical Data Report, documents hydraulic data, assumptions, procedures and criteria used in conducting hydraulic analyses and presents the results of these analyses. Hydraulic analyses for the Skunk Creek Watercourse Master Plan are conducted for Skunk Creek and Sonoran Wash (previously referred to as Unnamed Wash). The reach of Skunk Creek analyzed commences at River Mile (RM) 13.00 (Skunk Creek crossing of the CAP Cannel) and extends to RM 26.17 (upstream of the New River Road Bridge crossing of Skunk Creek). The analysis for Sonoran Wash commences at RM 0.52 (Sonoran Wash crossing of the CAP Cannel) and extends upstream to RM 3.84. Hydraulic analyses consist of reviewing existing HEC-2 hydraulic models for Skunk Creek and developing HEC–RAS hydraulic computer models for both Skunk Creek and Sonoran Wash.

Hydraulic computations for the Skunk Creek Watercourse Master Plan are conducted for both existing and proposed conditions to define water surface profiles and hydraulic parameters for the 2-year, 10-year and 100-year storm runoff events. Specifically the hydraulic models are developed to determine:

- 100-year floodplain and floodway boundaries for Sonoran Wash.
- Water surface profiles for multiple frequency storm events for both Skunk Creek and Sonoran Wash.
- Hydraulic impacts of proposed Master Plan Alternatives
- Hydraulic parameters to be used in Sediment Transport, Geomorphic, Engineering Analysis and Scour Analyses.

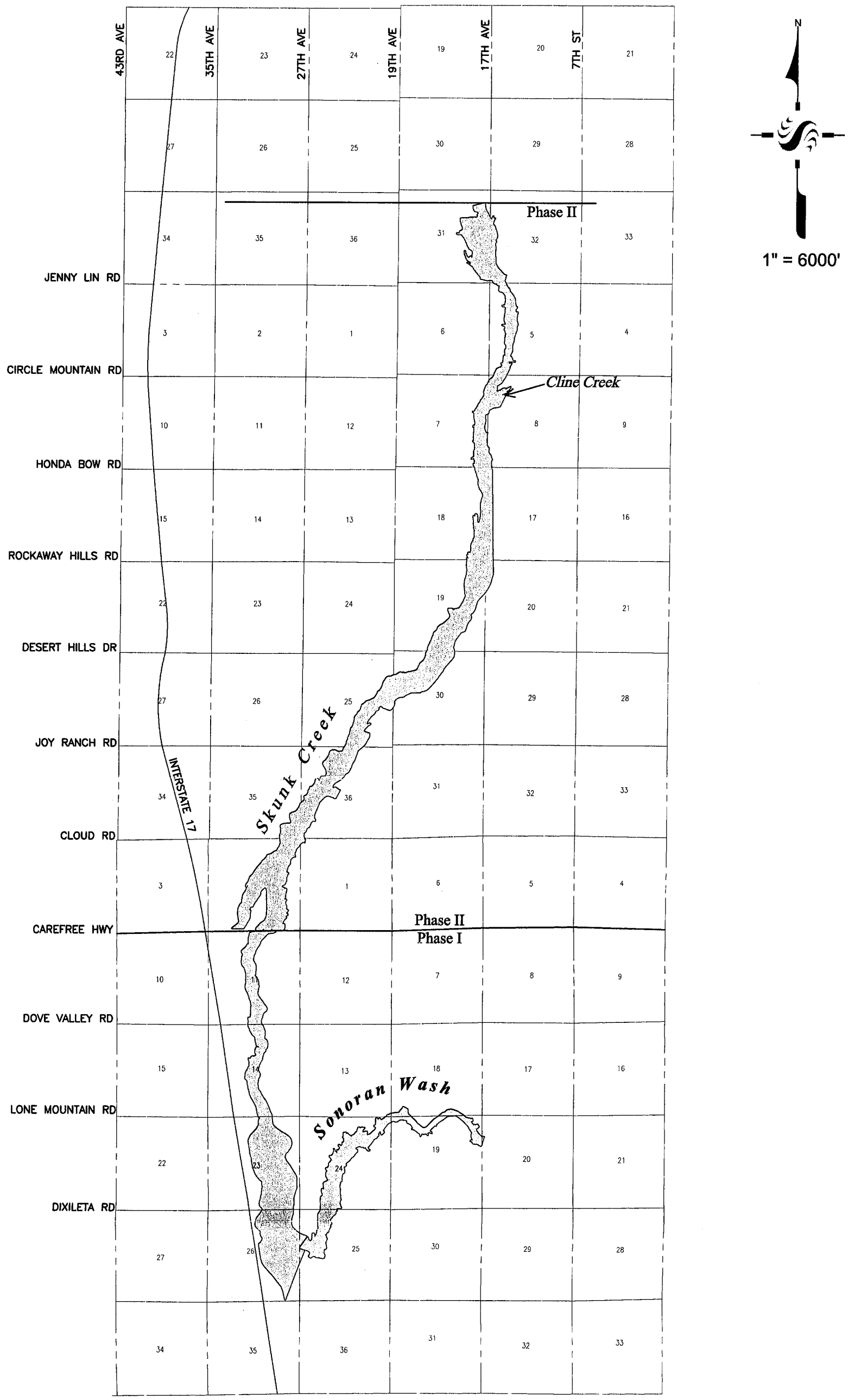
4-1.2 AUTHORITY FOR STUDY

Pursuant to Arizona revised Statutes 48-3609.01 the Flood Control District (District) of Maricopa County is authorized to conduct watercourse master plans for river

reaches within Maricopa County. Tetra Tech Inc. was awarded the Skunk Creek Watercourse Master Plan (FCD Contract 99-23) in October of 1999. Stantec Consulting Inc. is under contract to Tetra Tech Inc to conduct hydraulic analyses for the project.

4-1.3 Location

The Skunk Creek Watercourse Master Plan project is located within the City of Phoenix and unincorporated areas in Maricopa County. The project commences at the location where Skunk Creek and Sonoran Wash crosses the CAP Canal. The overall project extends upstream along Skunk Creek to a point north of the New River Road crossing of Skunk Creek for an overall distance of approximately 13 miles. The project also extends upstream along Sonoran Wash for approximately 3.8 miles. Figure 1-1 displays the location of the study area.



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2001 April 16, 1:40 p.m.

Stantec

Figure No.
4-1.1

Title
Skunk Creek Study Area
Watercourse Master Plan

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4-2.0 DATA COLLECTION

Data relative to hydraulic analysis were obtained from Skunk Creek Watercourse Master Plan, Attachment 1, Data Collection Technical Data Report. Specifically, base data used in the hydraulic analyses consists of existing studies, existing topographic mapping, new topographic mapping obtained for Sonoran Wash, and data collected during site visits. The following is a listing of base data used in the hydraulic analysis:

- Topographic mapping obtained from the Flood Control District of Maricopa County for the Skunk Creek Floodplain Delineation Study (FCD 95-47) prepared by Montgomery Watson.

- A HEC-2 hydraulic model and floodplain and floodway delineation work maps developed as part of the Skunk Creek Floodplain Delineation Study (FCD contract 95-16) prepared for the Flood Control District of Maricopa County by Montgomery Watson (June 1997).

- A HEC-2 hydraulic model and floodplain and floodway delineation work maps and topographic mapping for a reach of Skunk Creek prepared for the Del Webb Corporation by Erie and Associates Inc. (April 25, 1996, revised November 20, 1996). The subject reach commences at RM 20.64 and extends to RM 22.96.

- A HEC-2 model prepared for "Request for Conditional Letter of Map Revision for Skunk Creek" dated March 2, 1999 and "Response to FEMA Letter Dated 6/2/99 Case No. 99-09-592R Communities of City of Phoenix and Maricopa County, Arizona Skunk Creek Floodplain and Floodway Revisions" dated August 19, 1999 prepared by Hoskin Engineering Consultants, Inc.

- Floodplain and Floodway delineation presented on work maps provided as Figures in the submittal entitled, "Response to FEMA Letter Dated 6/2/99 Case No. 99-09-592R Communities of City of Phoenix and Maricopa County, Arizona Skunk Creek Floodplain and Floodway Revisions", dated August 19, 1999, prepared by Hoskin Engineering Consultants, Inc.

- Topographic mapping for Sonoran Wash prepared as part of the Skunk creek Watercourse Master Plan project. Mapping is prepared at a scale of 1"= 400', with a contour interval of two feet. Topographic mapping and associated Digital Terrain Model served as the bases for determining cross-section geometry. Tetra Tech Inc provided the topographic mapping.

- Field visits were conducted to estimate size of bed material and over bank material and to estimate vegetation density and distribution along the watercourses. Results of the data collected in the field are discussed in the Parameter Estimation section of this report

- Orthophotography provided by Tetra Tech Inc.

- A HEC-RAS hydraulic model prepared by Coe & Van Loo Consultants (March 2000), Inc. for Plateau Venture property. Property is located along a reach of Sonoran Wash.

4-3.0 HYDROLOGY

4-3.1 HYDROLOGIC METHOD DESCRIPTION

Hydrology developed for the Skunk Creek Watercourse Master Plan project is discussed in "Skunk Creek Watercourse Master Plan, Attachment 3, Hydrology Technical Data Report". Peak discharges used in the hydraulic analyses for the project are summarized in Tables 4-3.1 and 4-3.2.

Table 4-3.1

Existing and Future Discharges

Skunk Creek

HEC-RAS Section	HEC-1 Concentration Point	2-year Peak Discharge (cfs)		10-year Peak Discharge (cfs)		100-year Peak Discharge (cfs)		FEMA FIS HEC-2 100-year (cfs)
		Existing	Future	Existing	Future	Existing	Future	Existing
25.72	S6C	1,463	1,985	3,718	4,464	7,840	8,811	7,800
24.74	S10C	1,674	2,642	4,494	5,925	9,741	11,837	9,700
24.12	S13C	2,070	2,749	5,485	6,221	11,811	12,587	11,800
23.55	S14C	3,845	3,983	11,155	9,852	24,427	20,910	24,400
22.79	S16C	4,868	5,046	12,778	11,462	27,332	23,669	27,300
18.57	S21C2	4,948	4,994	12,807	11,796	27,733	24,642	27,700
17.95	S22C	4,872	4,881	12,583	11,663	27,283	24,474	27,300
16.68	S23C	4,712	4,740	12,229	11,425	26,513	24,126	26,700

Table 4-3.2

Existing and Future Discharges

Sonoran Wash

HEC-RAS Section	HEC-1 Concentration Point	2-year Peak Discharge (cfs)		25-year Peak Discharge (cfs)		100-year Peak Discharge (cfs)		100-year Regulatory (cfs)
		Existing	Future	Existing	Future	Existing	Future	Existing
3.70	C002L	1,068	120	2498	1798	3267	3454	3300
3.73	C002	2,008	121	4892	3295	6492	7246	6500
-	C003L	1,882	74	4829	2227	6303	5695	
2.08	C003	2,241	74	6235	2477	8359	6861	8400
-	C007L	2,063	49	5754	3893	8039	5856	
0.52	C007	2,338	65	6785	2539	9664	6671	9700
-	C009 (U13A)	127	152	343	388	472	525	
-	C010L	2,004	52	6369	2176	9203	5889	
-	C010	2,098	52	6712	2241	9825	6098	

4-4.0 HYDRAULICS

4-4.1 METHOD DESCRIPTION

4-4.1.1 General

HEC-2 and HEC-RAS hydraulic models are reviewed and/or developed for the hydraulic evaluation of the reaches of Skunk Creek and Sonoran Wash. The hydraulic models evaluate both existing and proposed (Master Plan Alternative's) conditions. The following data, criteria, procedures and methodology are used in the development of hydraulic models:

- Procedures and guidelines listed in the "Drainage Design Manual for Maricopa County, Volume II Hydraulics"; the "ProHEC2, Program Documentation Manual" (Dodson and Associates, Inc.); and the U.S. Army Corps of Engineers', "HEC-RAS River Analysis System User Manual" are used to develop hydraulic models.

- An enhanced version of the standard Corps of Engineers' "Flood Plain Analysis Computer Program" (Dodson and Associates, Inc. Version 4.6), is utilized to run the HEC-2 model.

- The U.S. Army Corps of Engineers' "HEC-RAS, River Analysis System", computer program (Version 2.2) is utilized to run HEC-RAS models.

- Procedures and guidelines listed in the "Estimated Manning's Roughness Coefficients for Stream Channels and Floodplains in Maricopa County, Arizona," "Method to Estimate Effects of Flow-Induced Vegetation Changes on Channel Conveyances of Streams in Central Arizona" and "Channel Subdivision and Bank Selection in Open Channels" were used in the estimation of Manning's roughness coefficients and bank station locations for Skunk Creek and Sonoran Wash.

- Floodplain and Floodway delineation's presented on work maps provided as Figures in the submittal entitled, "Response to FEMA Letter Dated 6/2/99 Case No. 99-09-592R Communities of City of Phoenix and Maricopa County, Arizona Skunk Creek Floodplain and Floodway Revisions", dated August 19, 1999, prepared by Hoskin Engineering

Consultants, Inc., are used as baseline floodplain and floodway delineation's for the reach of Skunk Creek between RM 13.00 and RM 17.95.

- Floodplain and Floodway delineation's prepared by Montgomery Watson and Erie & Associates are used as baseline floodplain and floodway delineation's for the reach of Skunk Creek between RM 17.95 and 26.17.

- Digital topographic data obtained from the District was merged with digital topographic data obtain from Erie & Associates, Inc to develop an overall topographic map for Skunk Creek. Tetra Tech Inc. provided the overall base topographic map.

- Cross-section location and alignments were digitized from available work maps. Cross-section identifiers used in the HEC-2 model developed by Castro Fleet for the reach between RM 20.64 and RM 22.96 were adjusted to be consistent with the HEC-2 model developed by Montgomery Watson.

- Geometric data defining hydraulic cross-section geometry presented in the HEC-2 model developed by Castro Fleet was compared to topographic mapping at cross-section locations presented on the work maps for data input verification purposes. The comparison demonstrated that there is not an exact match between cross-section geometric data listed in the hydraulic model and geometric data that can be inferred from topographic mapping along a given cross-section alignment. Even though there is not an exact match, the general geometry along the cross-section matches what can be inferred from the topographic maps.

  The major differences determined in the comparisons are 1) the magnitude of high and low ground elevations along a cross-sections and 2) the extent of data along a cross-section defined on the work maps as compared to data listed in the hydraulic model (length of cross-sections in model are different then length of cross-section indicated on work maps). The difference in magnitude of ground elevations could be attributed to sampling techniques. A cross-section sampled utilizing digital sampling technique would have more detail than one sampled by hand from a

topographic work map. The differences may also be attributed to an inference, that the digitally sampled alignments may not be consistent with alignments displayed on work maps.

It was concluded that for planning purposes for the Skunk Creek Watercourse Master Plan the data listed in the hydraulic model are sufficient for hydraulic modeling.

4-4.1.2 Hydraulic Models

HEC-2 and HEC-RAS hydraulic computer models are reviewed and/or developed for the hydraulic evaluation of the study reach of Skunk Creek and the study reach of Sonoran Wash. Models reviewed are HEC-2 floodplain delineation models prepared for the District by Montgomery Wastson, for the Del Webb Corporation by Castro Fleet., and for Tramonto by Hoskin Engineering Consultants. HEC-RAS hydraulic models developed in this plan evaluate both existing and proposed (Master Plan Alternative's) conditions. Proposed condition hydraulic models for Phase 1 are developed using existing condition 2-year, 10-year and 100-year peak discharges. All HEC-RAS models developed for the Skunk Creek Watercourse Master Plan Project commence at the CAP Canal. The following models were reviewed/revised or developed for the study:

- A HEC-2 model (effective FEMA model) prepared by Montgomery Watson for the District's Skunk Creek Floodplain Delineation Study (FCD 95-16). The model includes a reach in which a HEC-2 model developed by Castro Fleet under a separate study and submittal to FEMA is included. The reach analyzed by Castro Fleet is from RM 20.64 to RM 22.96.

- A HEC-2 model prepared by Hoskin Engineering Consultants for a reach of Skunk Creek commencing at RM 13.0 and extending to RM 18.36 included as part of a FEMA submittal entitled "Response to FEMA Letter Dated 6/2/99 Case No. 99-09-592R Communities of City of Phoenix and Maricopa County, Arizona Skunk Creek Floodplain and Floodway Revisions", dated August 19, 1999.

- The data form the HEC-2 model prepared by Hoskin Engineering Consultants is inserted into the effective floodplain HEC-2 model to develop a base model for the Skunk Creek Watercourse Master Plan.

- The base HEC-2 model is converted to an HEC-RAS format. A conversion routine in the HEC-RAS model is utilized to convert the HEC-2 format data to HEC-RAS format. The HEC-RAS model is referred to as Skunk Creek Watercourse Master Plan model.

- The Skunk Creek Watercourse Master Plan HEC-RAS model input data updates the existing condition geometry utilized in the base HEC-2 model to reflect revised Carefree Highway bridge and New River bridge data and proposed improvements that will eliminate the existing break-out of flow upstream of the Carefree Highway bridge at the Tramonto development. Updates are also are made to bank station locations, expansion and contraction coefficients and Manning's roughness coefficients where appropriate. Cross-section location and alignment updates were made at locations where it was determined necessary. The location of where cross-section data was updated are displayed on Figure 4-4.1, Sheets 1 Through 13.

- The Skunk Creek HEC-RAS model serves as the base model for hydraulic analysis of Watercourse Master Plan Alternatives. Model plans are developed for each proposed alternative. The hydraulic plan developed for each alternative reflects proposed encroachments to the 100-year floodplain.

- A HEC-RAS base model was developed for Sonoran Wash from new topography. The base model is used to delineate floodplain and floodway boundaries for existing condition 100-year peak discharges. The base model for Sonoran Wash, as is the base model for Skunk Creek, is then used to analysis master plan alternatives. The hydraulic plan developed for each alternative reflects proposed encroachments to the 100-year floodplain.

- Results for HEC-RAS models developed for the 2-year. 10-year peak and 25-year peak discharges are used for sediment transport, geomorphic and scour evaluations.

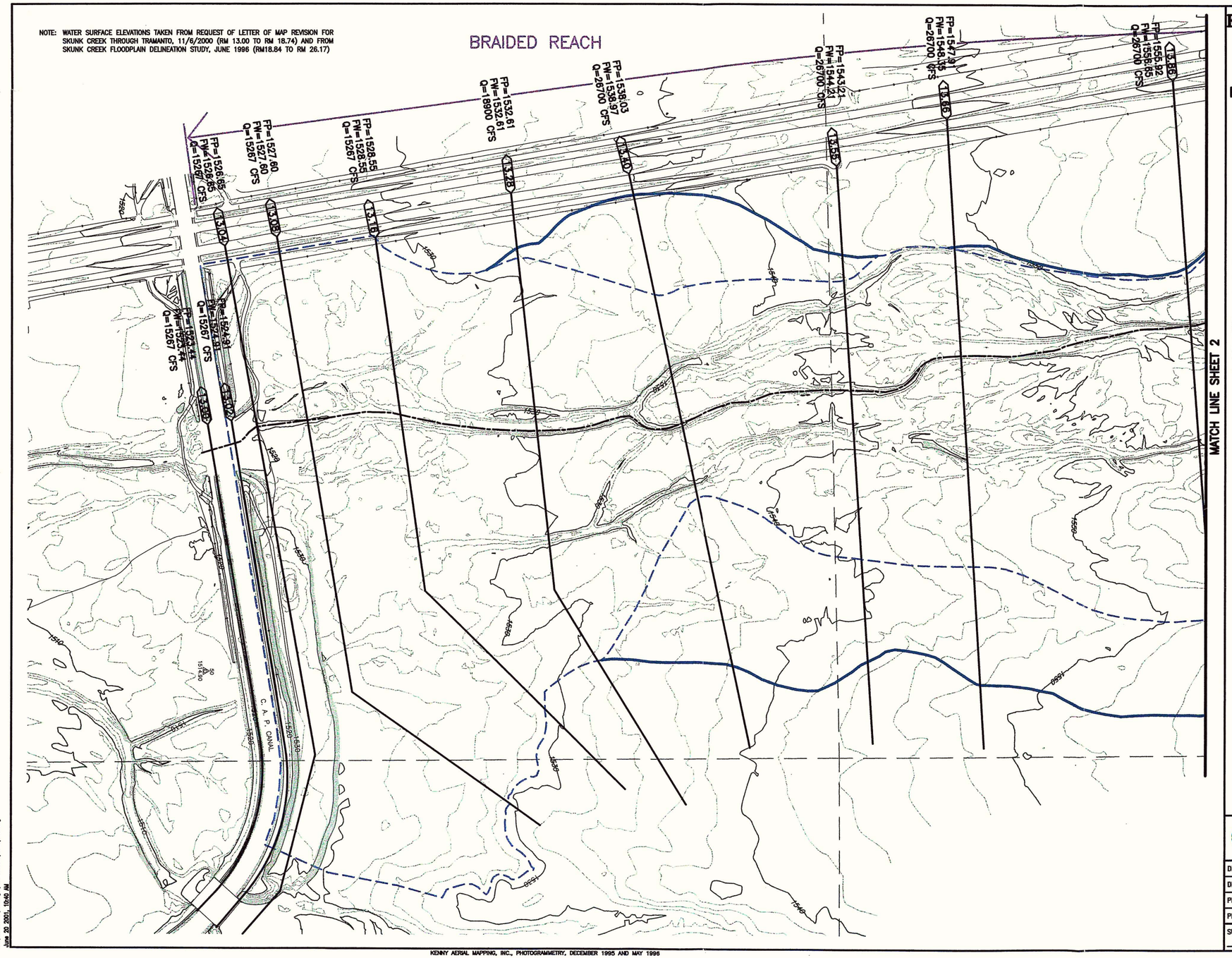
4-4.2 WORK STUDY MAPS

Study maps were developed utilizing existing topographic information, floodplain and floodway boundaries from the Montgomery Watson FIS Study, Castro Fleet FIS

Study and the COMR prepared by Haskins & Associates for Skunk Creek. Maps are prepared at a scale of 1" = 400' and a contour interval of 2 feet. Work study maps for Skunk Creek are presented as Figure 4-4.1, Sheets 1 through 13. Figure 4-4.1 also displays location in which cross-section were modified for HEC-RAS modeling efforts.

Study maps for Sonoran Wash are prepared from topography and floodplain and floodway boundaries developed for this study. Maps are prepared at a scale of 1" = 400' and a contour interval of 2 feet. Study maps for Sonoran Wash are presented as Figure 4-4.2, Sheets 1 through 4.

NOTE: WATER SURFACE ELEVATIONS TAKEN FROM REQUEST OF LETTER OF MAP REVISION FOR SKUNK CREEK THROUGH TRAMANTO, 11/6/2000 (RM 13.00 TO RM 18.74) AND FROM SKUNK CREEK FLOODPLAIN DELINEATION STUDY, JUNE 1996 (RM18.84 TO RM 26.17)



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

SKUNK CREEK WATERCOURSE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP

F.C.D. CONTRACT NO. 99-23

LEGEND

- HYDRAULIC BASELINE PER FEMA
- HYDRAULIC BASELINE PER CLOMR
- CLOMR 100-YEAR FLOODPLAIN
- CLOMR 100-YEAR FLOODWAY
- FEMA 100-YEAR FLOODPLAIN
- FEMA 100-YEAR FLOODWAY
- CROSS SECTION — 15.144 — FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION) — FW= 1889.54 (ENCROACHED WATER SURFACE ELEVATION) — Q = CFS (100 YEAR DISCHARGE) — CROSS SECTION INDEX MILE DESIGNATION
- PORTION OR ENTIRE CROSS SECTION DELETED FOR HYDRAULIC MODELING
- NEW CROSS SECTION FOR HYDRAULIC MODELING
- SECTION LINES

INDEX

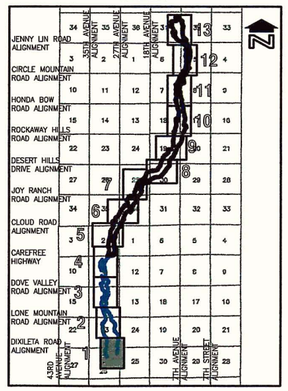


FIGURE 4-4.1

200' 0' 200' 400'

CONTOUR INTERVAL: 2 FEET

Stantec

	BY	DATE	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN	SRG	JUNE 2000	
DESIGN CHK.	PJE	JUNE 2000	
PLANS	HAR	JUNE 2000	
PLANS CHK.	PJE	JUNE 2000	
SUBMITTED BY:		DATE:	

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

PLATE 1 OF 13

KENNY AERIAL MAPPING, INC., PHOTOGRAMMETRY, DECEMBER 1995 AND MAY 1996

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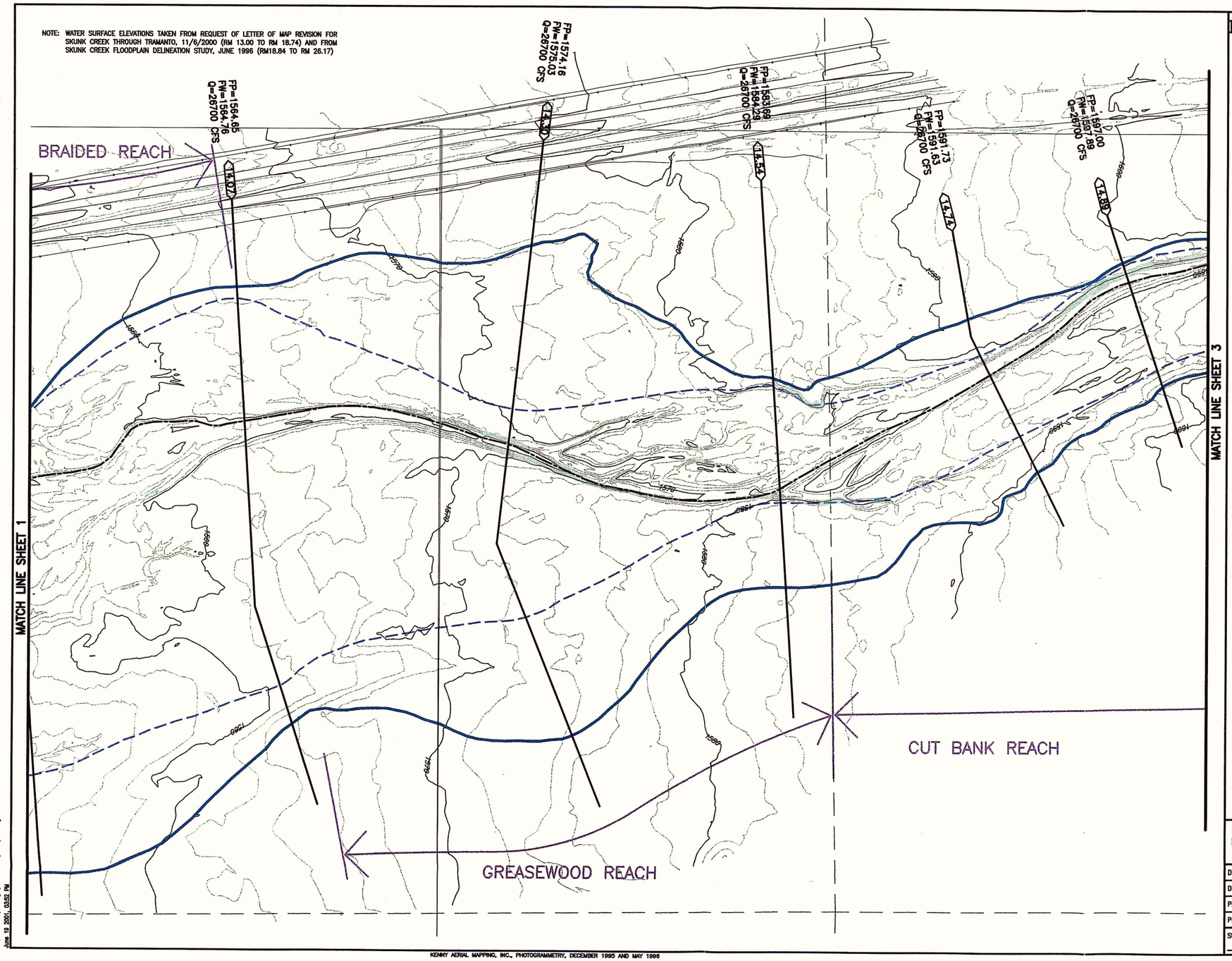
June 20 2001, 10:40 AM

NOTE: WATER SURFACE ELEVATIONS TAKEN FROM REQUEST OF LETTER OF MAP REVISION FOR SKUNK CREEK THROUGH TRAMANTO, 11/6/2000 (RM 13.00 TO RM 18.74) AND FROM SKUNK CREEK FLOODPLAIN DELINEATION STUDY, JUNE 1996 (RM18.84 TO RM 26.17)



KENNY AERIAL MAPPING, INC., PHOTOGRAMMETRY, DECEMBER 1995 AND MAY 1996

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June 19 2001, 03:32 PM

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

SKUNK CREEK WATERCOURSE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP

F.C.D. CONTRACT NO. 99-23

LEGEND

- HYDRAULIC BASELINE PER FEMA
- HYDRAULIC BASELINE PER CLOMR
- CLOMR 100-YEAR FLOODPLAIN
- CLOMR 100-YEAR FLOODWAY
- FEMA 100-YEAR FLOODPLAIN
- FEMA 100-YEAR FLOODWAY
- CROSS SECTION — 15.144 (CROSS SECTION NUMBER DESIGNATION); FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION), FW= 1889.54 (FLOODWAY WATER SURFACE ELEVATION), Q = CFS (DISCHARGE 100 YEAR DISCHARGE)
- PORTION OR ENTIRE CROSS SECTION DELETED FOR HYDRAULIC MODELING
- NEW CROSS SECTION FOR HYDRAULIC MODELING
- SECTION LINES

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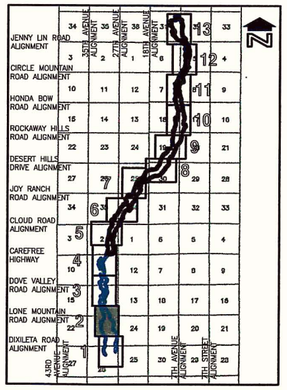


FIGURE 4-4.1

200' 0' 200' 400'

CONTOUR INTERVAL: 2 FEET

Stantec

	BY	DATE
DESIGN	SRG	JUNE 2000
DESIGN CHK.	PJE	JUNE 2000
PLANS	HAR	JUNE 2000
PLANS CHK.	PJE	JUNE 2000

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

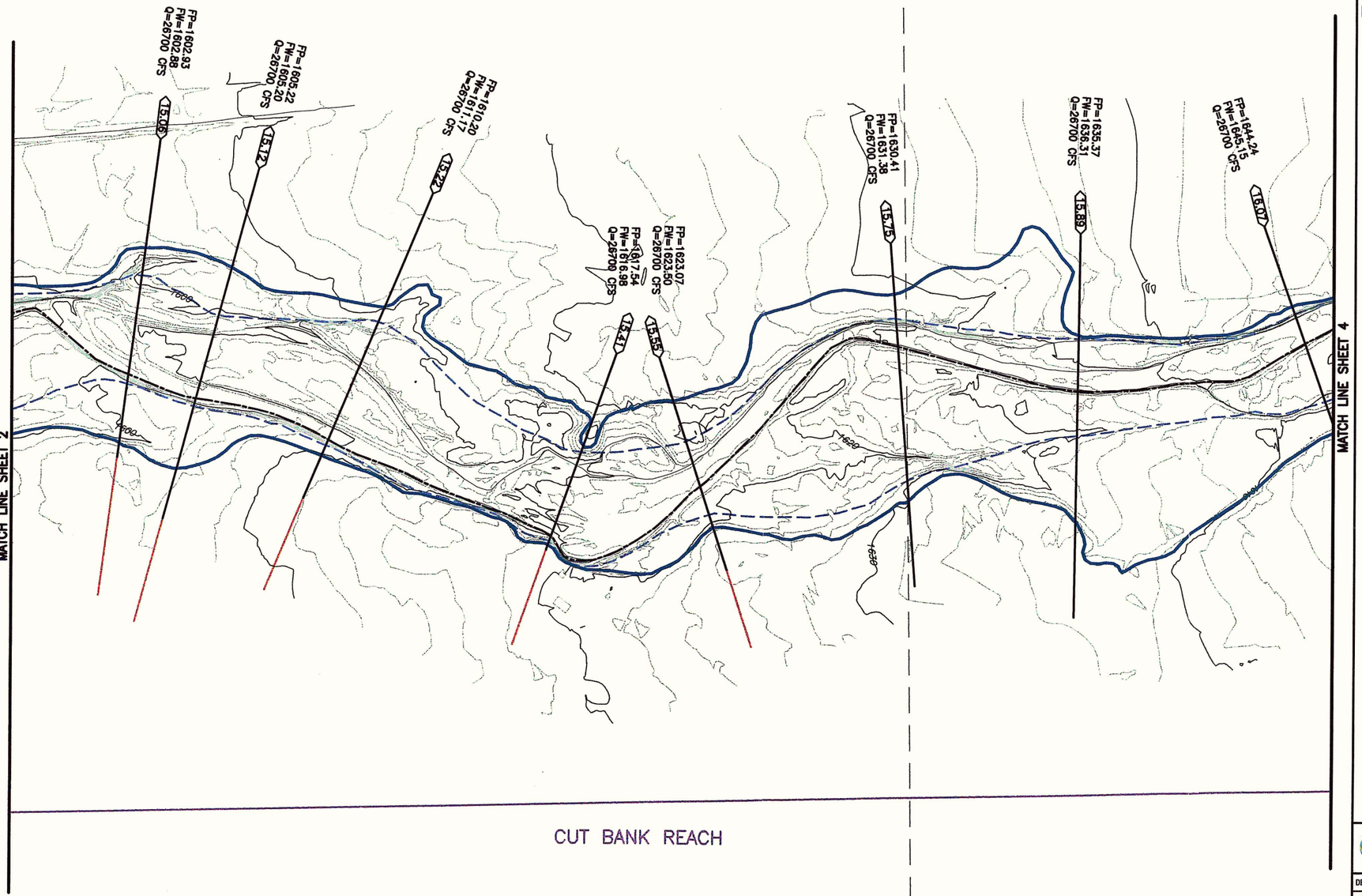
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

PLATE 2 OF 13

NOTE: WATER SURFACE ELEVATIONS TAKEN FROM REQUEST OF LETTER OF MAP REVISION FOR SKUNK CREEK THROUGH TRAMANTO, 11/6/2000 (RM 13.00 TO RM 18.74) AND FROM SKUNK CREEK FLOODPLAIN DELINEATION STUDY, JUNE 1996 (RM18.84 TO RM 26.17)



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

SKUNK CREEK WATERCOURSE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP

F.C.D. CONTRACT NO. 99-23

LEGEND

- HYDRAULIC BASELINE PER FEMA
- HYDRAULIC BASELINE PER CLOMR
- CLOMR 100-YEAR FLOODPLAIN
- CLOMR 100-YEAR FLOODWAY
- FEMA 100-YEAR FLOODPLAIN
- FEMA 100-YEAR FLOODWAY
- CROSS SECTION — 15.144 (CROSS SECTION INDEX MILE DESIGNATION) — FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION), FW= 1888.54 (FLOODWAY WATER SURFACE ELEVATION), Q = CFS (100 YEAR DISCHARGE)
- PORTION OR ENTIRE CROSS SECTION DELETED FOR HYDRAULIC MODELING
- NEW CROSS SECTION FOR HYDRAULIC MODELING
- SECTION LINES

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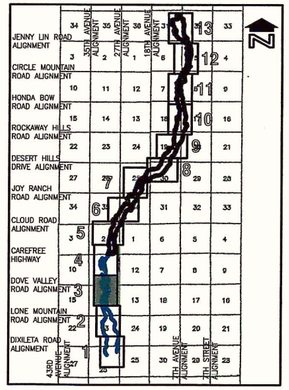

FIGURE 4-4.1

N 200' 0' 200' 400'

CONTOUR INTERVAL: 2 FEET

Stantec

	BY	DATE
DESIGN	SRG	JUNE 2000
DESIGN CHK.	PJE	JUNE 2000
PLANS	HAR	JUNE 2000
PLANS CHK.	PJE	JUNE 2000
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

PLATE 3 OF 13

KENNY AERIAL MAPPING, INC., PHOTOGRAMMETRY, DECEMBER 1995 AND MAY 1996

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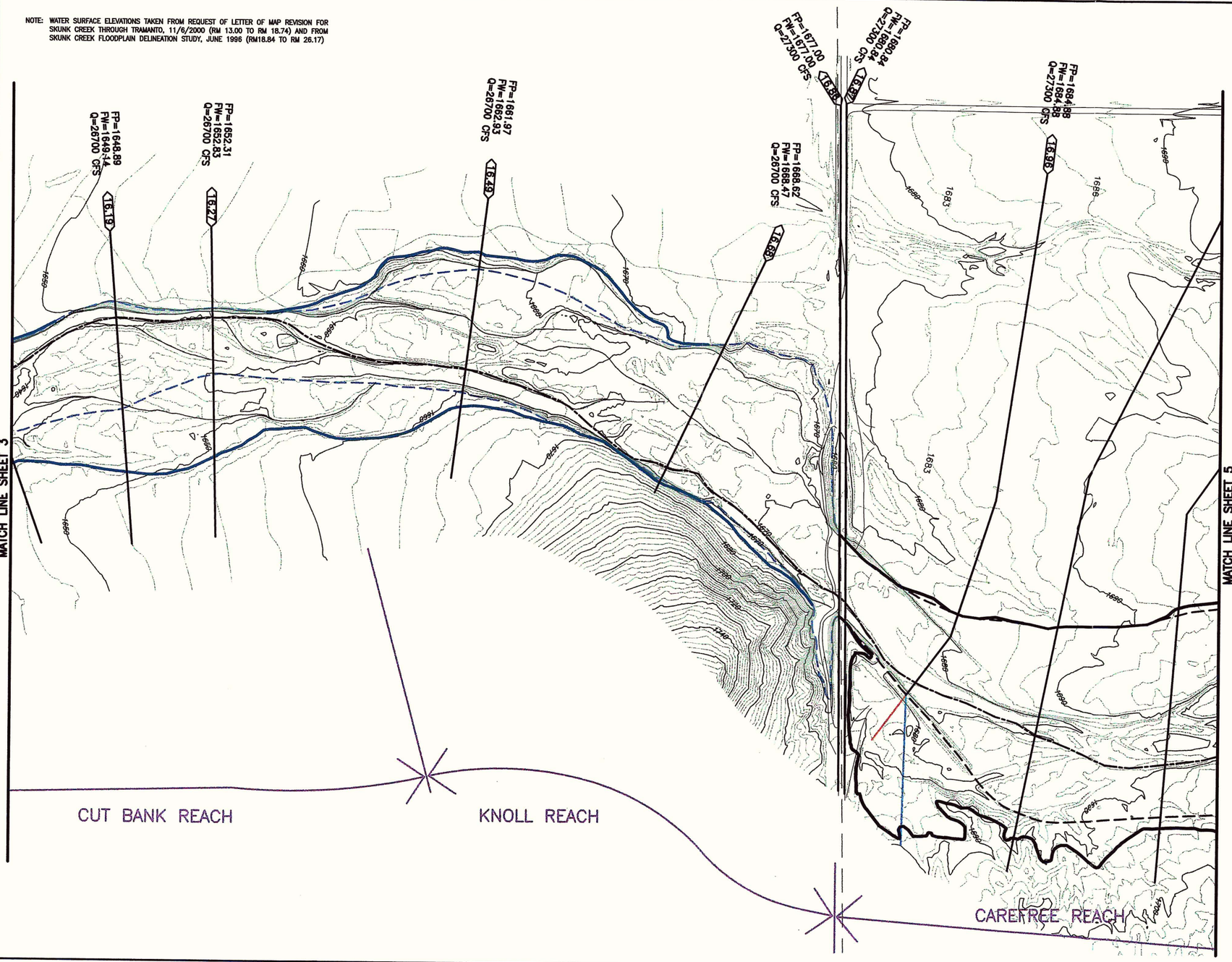
June 19 2001, 03:54 PM

NOTE: WATER SURFACE ELEVATIONS TAKEN FROM REQUEST OF LETTER OF MAP REVISION FOR SKUNK CREEK THROUGH TRAMANTO, 11/6/2000 (RM 13.00 TO RM 18.74) AND FROM SKUNK CREEK FLOODPLAIN DELINEATION STUDY, JUNE 1996 (RM16.84 TO RM 26.17)



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

SKUNK CREEK WATERCOURSE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP

F.C.D. CONTRACT NO. 99-23

LEGEND

- HYDRAULIC BASELINE PER FEMA
- HYDRAULIC BASELINE PER CLOMR
- CLOMR 100-YEAR FLOODPLAIN
- CLOMR 100-YEAR FLOODWAY
- FEMA 100-YEAR FLOODPLAIN
- FEMA 100-YEAR FLOODWAY
- CROSS SECTION — 15.144 (CROSS SECTION DESIGNATION) — FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION), FW= 1888.54 (ENCROACHED WATER SURFACE ELEVATION), Q = CFS (100 YEAR DISCHARGE)
- PORTION OR ENTIRE CROSS SECTION DELETED FOR HYDRAULIC MODELING
- NEW CROSS SECTION FOR HYDRAULIC MODELING
- SECTION LINES

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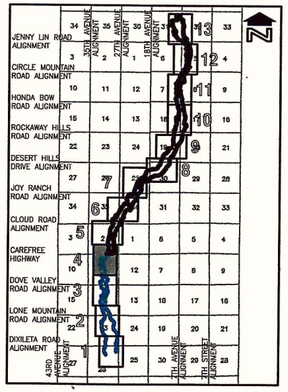


FIGURE 4-4.1

200' 0' 200' 400'

CONTOUR INTERVAL: 2 FEET

Stantec

	BY	DATE
DESIGN	SRG	JUNE 2000
DESIGN CHK.	PJE	JUNE 2000
PLANS	HAR	JUNE 2000
PLANS CHK.	PJE	JUNE 2000
SUBMITTED BY:		DATE

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

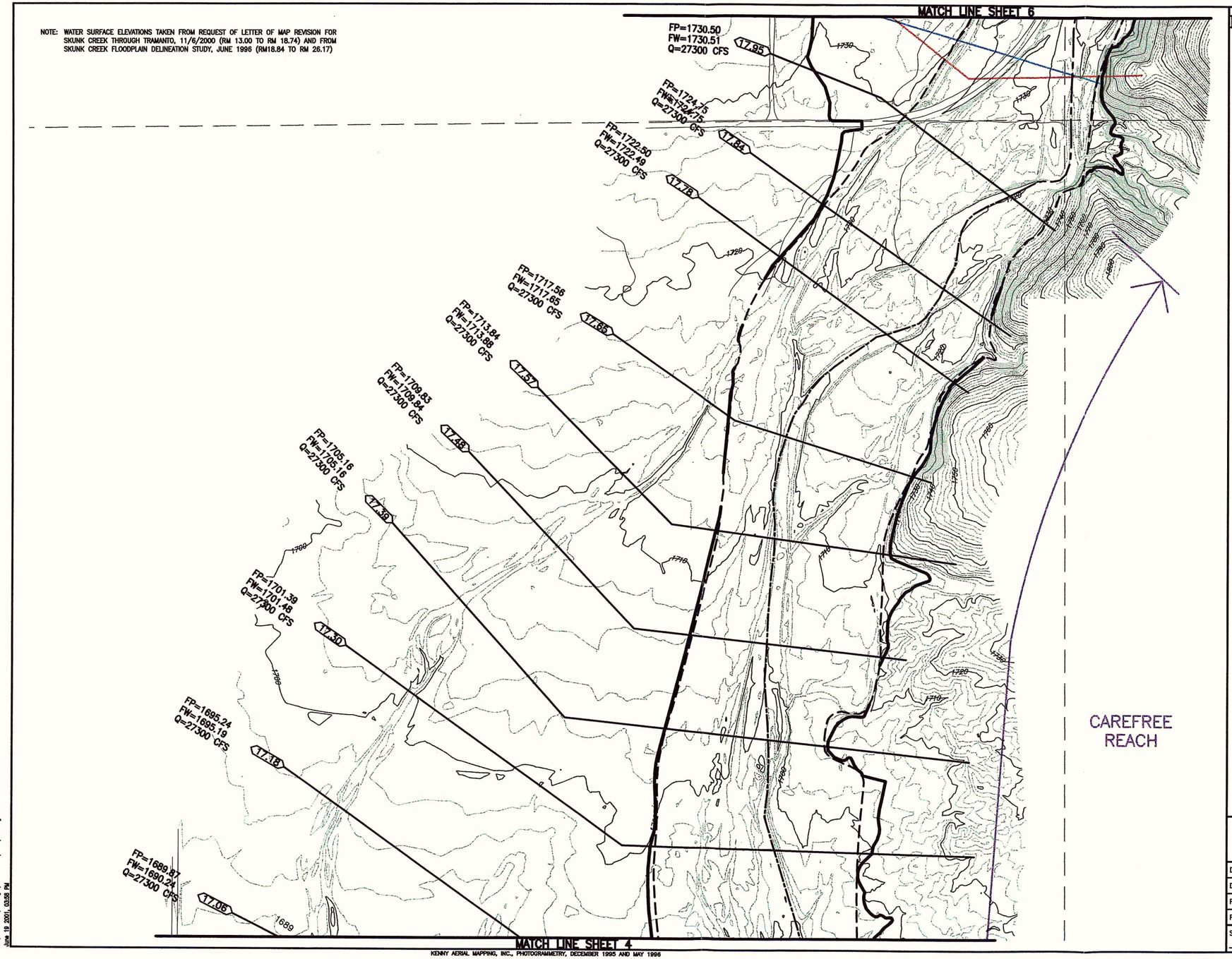
CHIEF ENGINEER AND GENERAL MANAGER

PLATE 4 OF 13

P:\82000141\Drawings\WMP June 19 2001, 02:55 PM

KENNY AERIAL MAPPING, INC., PHOTOGRAMMETRY, DECEMBER 1995 AND MAY 1996

NOTE: WATER SURFACE ELEVATIONS TAKEN FROM REQUEST OF LETTER OF MAP REVISION FOR SKUNK CREEK THROUGH TRAMANTO, 11/6/2000 (RM 13.00 TO RM 18.74) AND FROM SKUNK CREEK FLOODPLAIN DELINEATION STUDY, JUNE 1996 (RM18.84 TO RM 26.17)



KENNY AERIAL MAPPING, INC., PHOTOGRAMMETRY, DECEMBER 1995 AND MAY 1996

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June 19 2001, 03:55 PM

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

SKUNK CREEK WATERCOURSE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP

F.C.D. CONTRACT NO. 99-23

LEGEND

- HYDRAULIC BASELINE PER FEMA
- HYDRAULIC BASELINE PER CLOMR
- CLOMR 100-YEAR FLOODPLAIN
- CLOMR 100-YEAR FLOODWAY
- FEMA 100-YEAR FLOODPLAIN
- FEMA 100-YEAR FLOODWAY
- CROSS SECTION — 15.144 (CROSS SECTION INDEX NO. SEQUENCE) — FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION), FW= 1889.54 (ENCROACHED WATER SURFACE ELEVATION), Q = CFS (100 YEAR DISCHARGE)
- PORTION OR ENTIRE CROSS SECTION DELETED FOR HYDRAULIC MODELING
- NEW CROSS SECTION FOR HYDRAULIC MODELING
- SECTION LINES

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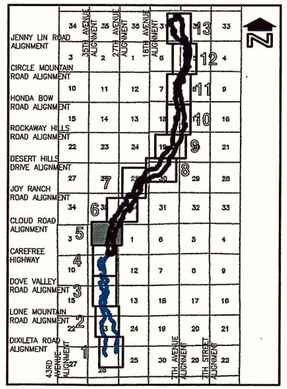


FIGURE 4-4.1

200' 0' 200' 400'

CONTOUR INTERVAL: 2 FEET

Stantec

	BY	DATE
DESIGN	SRG	JUNE 2000
DESIGN CHK.	PJE	JUNE 2000
PLANS	HAR	JUNE 2000
PLANS CHK.	PJE	JUNE 2000

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

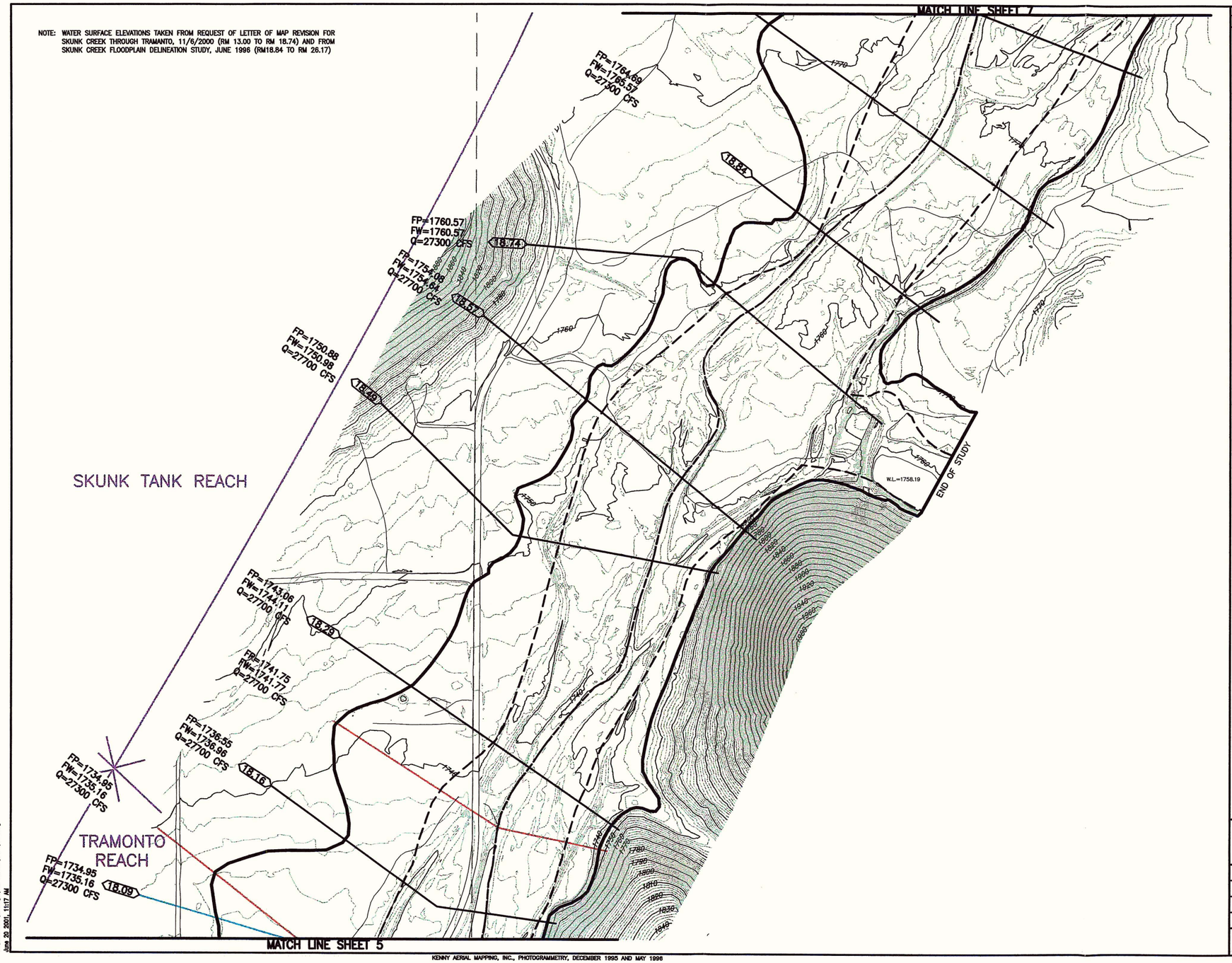
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

PLATE 5 OF 13

NOTE: WATER SURFACE ELEVATIONS TAKEN FROM REQUEST OF LETTER OF MAP REVISION FOR SKUNK CREEK THROUGH TRAMANTO, 11/6/2000 (RM 13.00 TO RM 18.74) AND FROM SKUNK CREEK FLOODPLAIN DELINEATION STUDY, JUNE 1996 (RM18.84 TO RM 26.17)



KENNY AERIAL MAPPING, INC., PHOTOGRAMMETRY, DECEMBER 1995 AND MAY 1996

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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

SKUNK CREEK WATERCOURSE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP

F.C.D. CONTRACT NO. 99-23

LEGEND

- HYDRAULIC BASELINE PER FEMA
- HYDRAULIC BASELINE PER CLOMR
- CLOMR 100-YEAR FLOODPLAIN
- CLOMR 100-YEAR FLOODWAY
- FEMA 100-YEAR FLOODPLAIN
- FEMA 100-YEAR FLOODWAY
- CROSS SECTION — 15.144 (CROSS SECTION INDEX MILE DESIGNATION) — FP= 1868.74 (FLOODPLAIN WATER SURFACE ELEVATION) FW= 1869.54 (FLOODWAY WATER SURFACE ELEVATION) Q = CFS (100 YEAR DISCHARGE)
- PORTION OR ENTIRE CROSS SECTION DELETED FOR HYDRAULIC MODELING
- NEW CROSS SECTION FOR HYDRAULIC MODELING
- SECTION LINES

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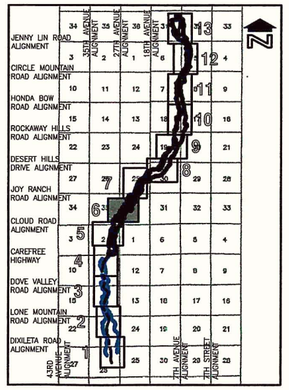


FIGURE 4-4.1

N 200' 0' 200' 400'

CONTOUR INTERVAL: 2 FEET

Stantec

	BY	DATE
DESIGN	SRG	JUNE 2000
DESIGN CHK.	PJE	JUNE 2000
PLANS	HAR	JUNE 2000
PLANS CHK.	PJE	JUNE 2000
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

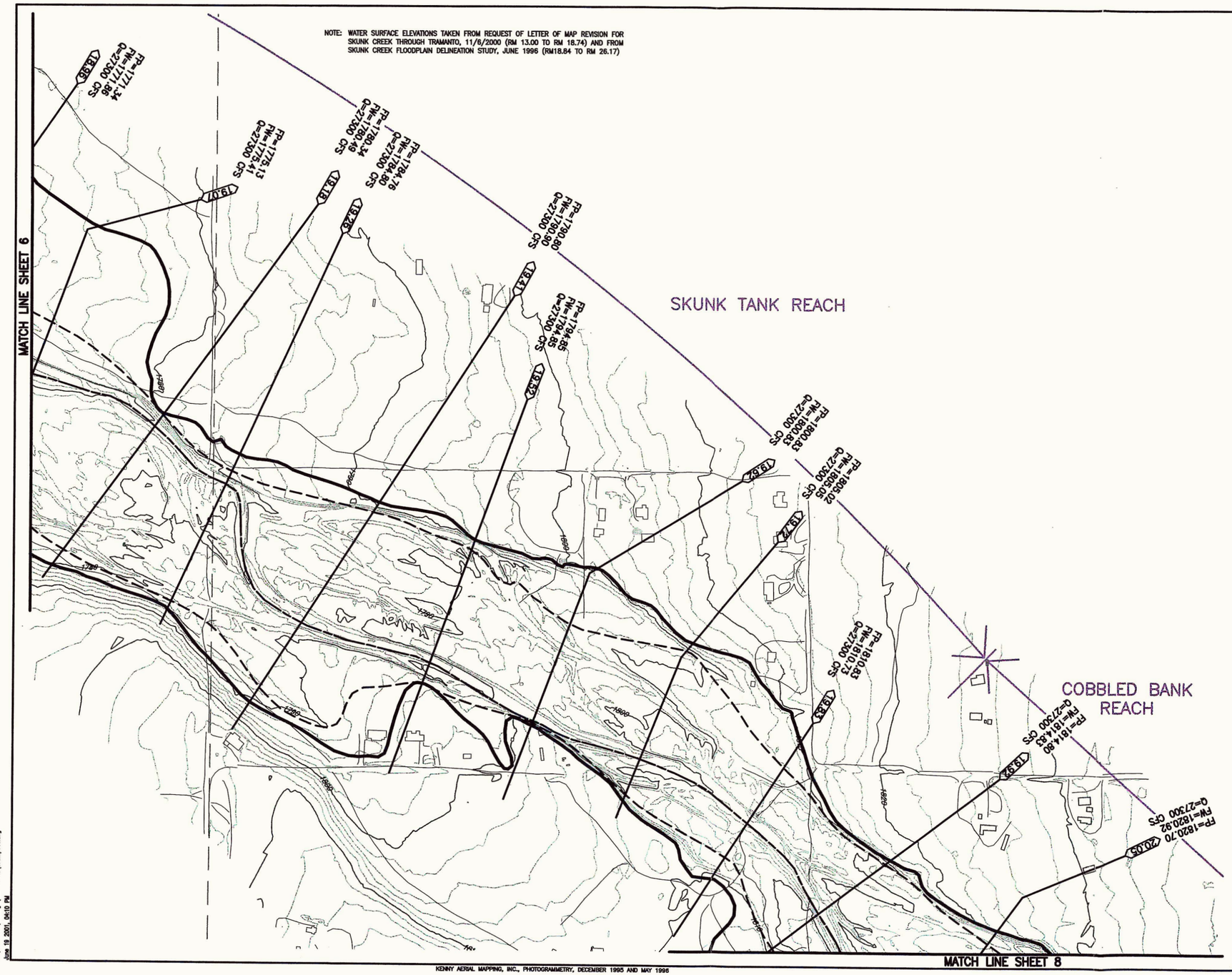
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

PLATE 6 OF 13

NOTE: WATER SURFACE ELEVATIONS TAKEN FROM REQUEST OF LETTER OF MAP REVISION FOR SKUNK CREEK THROUGH TRAMANTO, 11/6/2000 (RM 13.00 TO RM 18.74) AND FROM SKUNK CREEK FLOODPLAIN DELINEATION STUDY, JUNE 1996 (RM18.84 TO RM 26.17)



KENNY AERIAL MAPPING, INC., PHOTOGRAMMETRY, DECEMBER 1995 AND MAY 1996

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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

SKUNK CREEK WATERCOURSE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP

F.C.D. CONTRACT NO. 99-23

LEGEND

- HYDRAULIC BASELINE PER FEMA
- HYDRAULIC BASELINE PER CLOMR
- CLOMR 100-YEAR FLOODPLAIN
- CLOMR 100-YEAR FLOODWAY
- FEMA 100-YEAR FLOODPLAIN
- FEMA 100-YEAR FLOODWAY
- CROSS SECTION — 15.144 — FP= 1888.74 FW= 1888.54 Q= CFS — CROSS SECTION NAME AND DESIGNATION; FLOODPLAIN WATER SURFACE ELEVATION; FLOODWAY WATER SURFACE ELEVATION; 100 YEAR DISCHARGE
- PORTION OR ENTIRE CROSS SECTION DELETED FOR HYDRAULIC MODELING
- NEW CROSS SECTION FOR HYDRAULIC MODELING
- SECTION LINES

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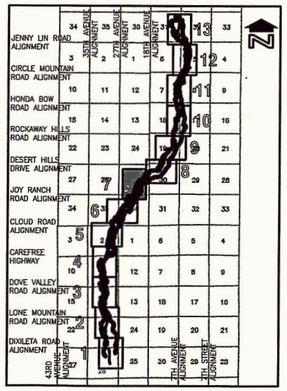


FIGURE 4-4.1

200' 0' 200' 400'

CONTOUR INTERVAL: 2 FEET

Stantec

	BY	DATE
DESIGN	SRG	JUNE 2000
DESIGN CHK.	PJE	JUNE 2000
PLANS	HAR	JUNE 2000
PLANS CHK.	PJE	JUNE 2000

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

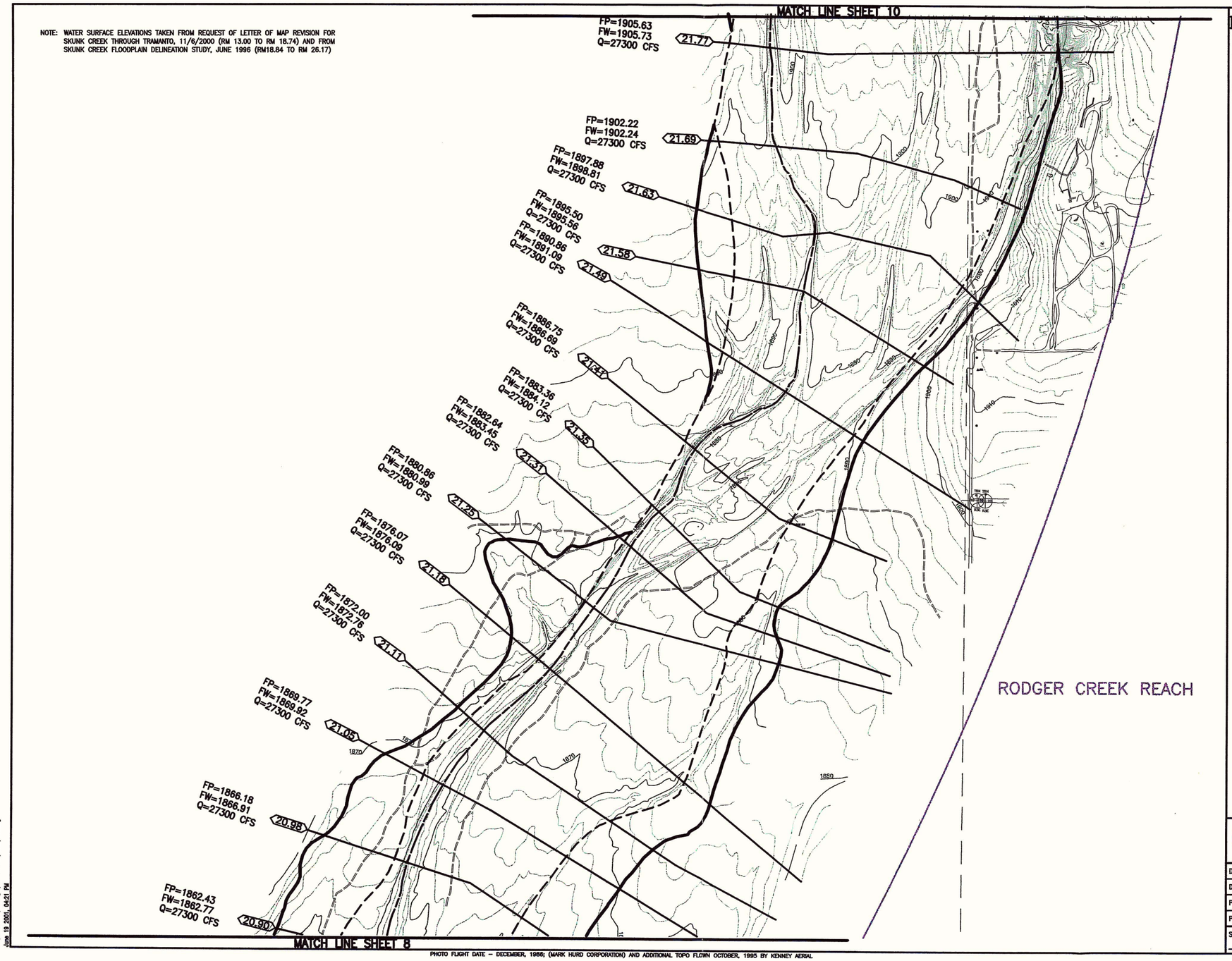
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

PLATE 7 OF 13

NOTE: WATER SURFACE ELEVATIONS TAKEN FROM REQUEST OF LETTER OF MAP REVISION FOR SKUNK CREEK THROUGH TRAMANTO, 11/6/2000 (RM 13.00 TO RM 18.74) AND FROM SKUNK CREEK FLOODPLAIN DELINEATION STUDY, JUNE 1996 (RM18.84 TO RM 26.17)



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

SKUNK CREEK WATERCOURSE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP

F.C.D. CONTRACT NO. 99-23

LEGEND

- HYDRAULIC BASELINE PER FEMA
- HYDRAULIC BASELINE PER CLOMR
- CLOMR 100-YEAR FLOODPLAIN
- CLOMR 100-YEAR FLOODWAY
- FEMA 100-YEAR FLOODPLAIN
- FEMA 100-YEAR FLOODWAY
- CROSS SECTION — 15.144 — CROSS SECTION INDEX MILE DESIGNATION — FP= 1888.74 FW= 1888.84 Q = CFS — FLOODPLAIN WATER SURFACE ELEVATION; FLOODWAY WATER SURFACE ELEVATION; 100 YEAR DISCHARGE
- PORTION OR ENTIRE CROSS SECTION DELETED FOR HYDRAULIC MODELING
- NEW CROSS SECTION FOR HYDRAULIC MODELING
- SECTION LINES

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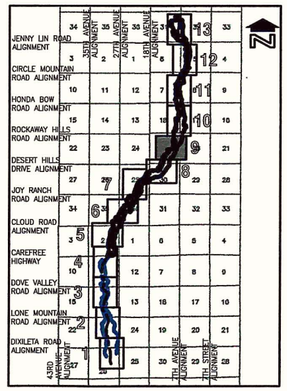

FIGURE 4-4.1

N 200' 0' 200' 400'

CONTOUR INTERVAL: 2 FEET

Stantec

	BY	DATE
DESIGN	SRG	JUNE 2000
DESIGN CHK.	PJE	JUNE 2000
PLANS	HAR	JUNE 2000
PLANS CHK.	PJE	JUNE 2000
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

PLATE 9 OF 13

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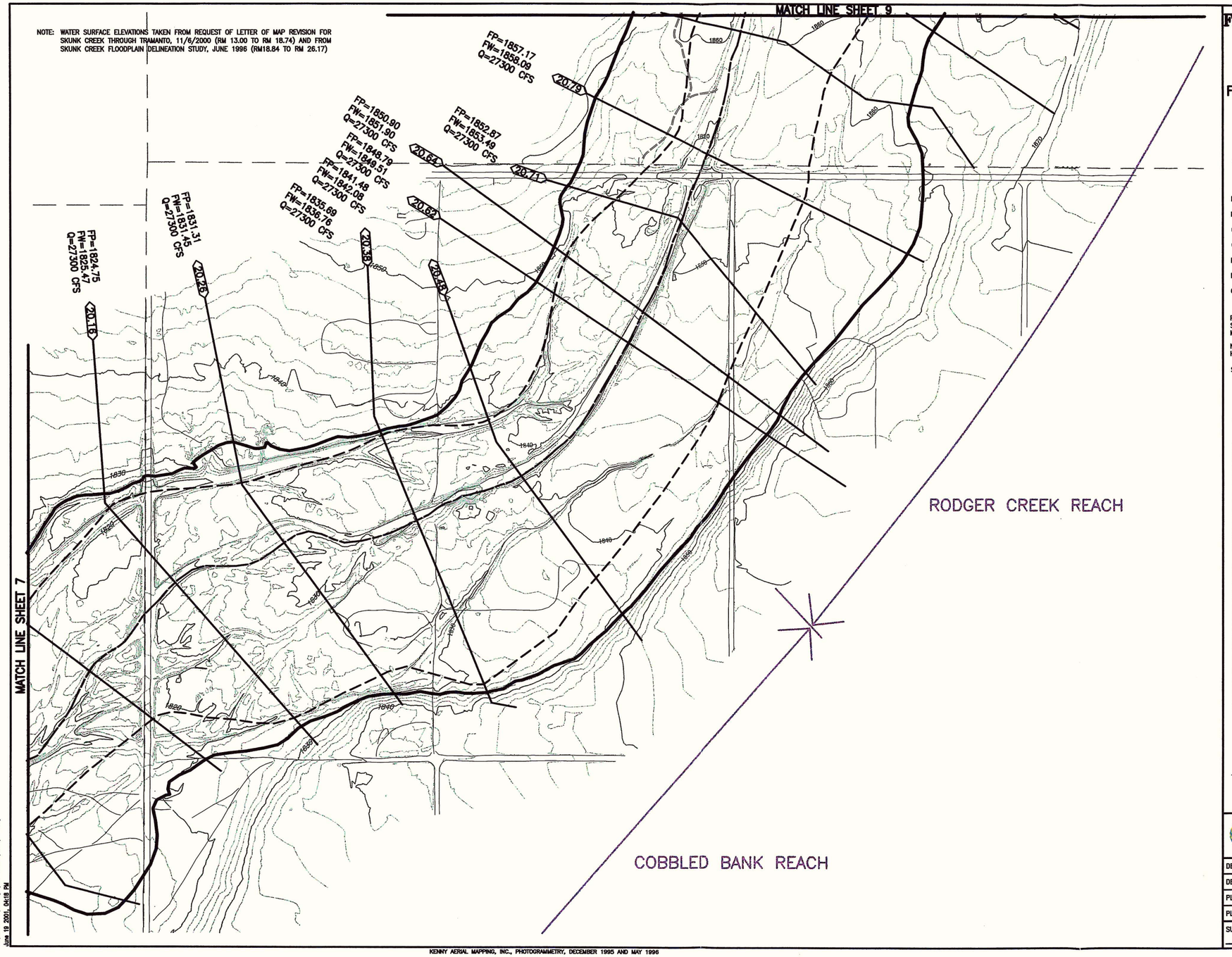
PHOTO FLIGHT DATE – DECEMBER, 1986; (MARK HURD CORPORATION) AND ADDITIONAL TOPO FLOWN OCTOBER, 1995 BY KENNEY AERIAL

NOTE: WATER SURFACE ELEVATIONS TAKEN FROM REQUEST OF LETTER OF MAP REVISION FOR SKUNK CREEK THROUGH TRAMANTO, 11/6/2000 (RM 13.00 TO RM 18.74) AND FROM SKUNK CREEK FLOODPLAIN DELINEATION STUDY, JUNE 1996 (RM18.84 TO RM 26.17)



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

SKUNK CREEK WATERCOURSE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP

F.C.D. CONTRACT NO. 99-23

LEGEND

- HYDRAULIC BASELINE PER FEMA
- HYDRAULIC BASELINE PER CLOMR
- CLOMR 100-YEAR FLOODPLAIN
- CLOMR 100-YEAR FLOODWAY
- FEMA 100-YEAR FLOODPLAIN
- FEMA 100-YEAR FLOODWAY
- CROSS SECTION — 15.144 (CROSS SECTION INDEX MILE SEGMENTS) — FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION), FW= 1889.54 (FLOODWAY WATER SURFACE ELEVATION), Q = CFS (100 YEAR DISCHARGE)
- PORTION OR ENTIRE CROSS SECTION DELETED FOR HYDRAULIC MODELING
- NEW CROSS SECTION FOR HYDRAULIC MODELING
- SECTION LINES

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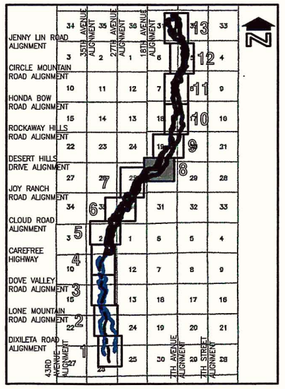

FIGURE 4-4.1

200' 0' 200' 400'

CONTOUR INTERVAL: 2 FEET

Stantec

	BY	DATE
DESIGN	SRG	JUNE 2000
DESIGN CHK.	PJE	JUNE 2000
PLANS	HAR	JUNE 2000
PLANS CHK.	PJE	JUNE 2000

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

PLATE 8 OF 13

KENNY AERIAL MAPPING, INC., PHOTOGRAMMETRY, DECEMBER 1995 AND MAY 1996

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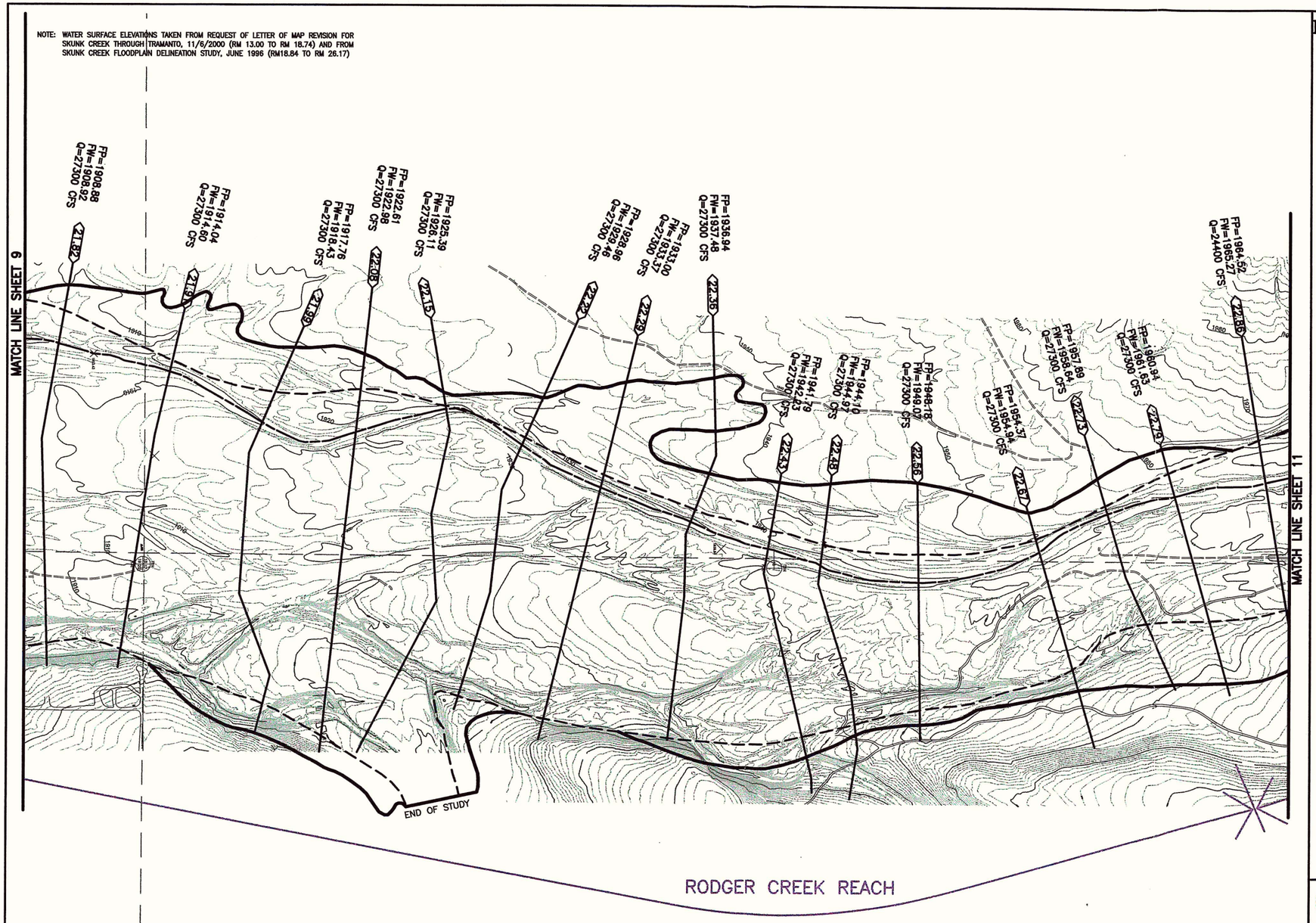
NOTE: WATER SURFACE ELEVATIONS TAKEN FROM REQUEST OF LETTER OF MAP REVISION FOR SKUNK CREEK THROUGH TRAMANTO, 11/6/2000 (RM 13.00 TO RM 18.74) AND FROM SKUNK CREEK FLOODPLAIN DELINEATION STUDY, JUNE 1996 (RM18.84 TO RM 26.17)



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

SKUNK CREEK WATERCOURSE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP

F.C.D. CONTRACT NO. 99-23

LEGEND

- HYDRAULIC BASELINE PER FEMA
- HYDRAULIC BASELINE PER CLOMR
- CLOMR 100-YEAR FLOODPLAIN
- CLOMR 100-YEAR FLOODWAY
- FEMA 100-YEAR FLOODPLAIN
- FEMA 100-YEAR FLOODWAY
- CROSS SECTION — 15.144 (CROSS SECTION INDEX MILE DESIGNATION) — FP= 1899.74 (FLOODPLAIN WATER SURFACE ELEVATION), FW= 1899.54 (FLOODWAY WATER SURFACE ELEVATION), Q = CFS (DISCHARGES BASED ON 100 YEAR DISCHARGE)
- PORTION OR ENTIRE CROSS SECTION DELETED FOR HYDRAULIC MODELING
- NEW CROSS SECTION FOR HYDRAULIC MODELING
- SECTION LINES

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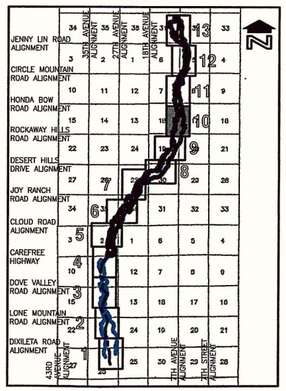

FIGURE 4-4.1

200' 0' 200' 400'

CONTOUR INTERVAL: 2 FEET

Stantec

	BY	DATE
DESIGN	SRG	JUNE 2000
DESIGN CHK.	PJE	JUNE 2000
PLANS	HAR	JUNE 2000
PLANS CHK.	PJE	JUNE 2000

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

PLATE 10 OF 13

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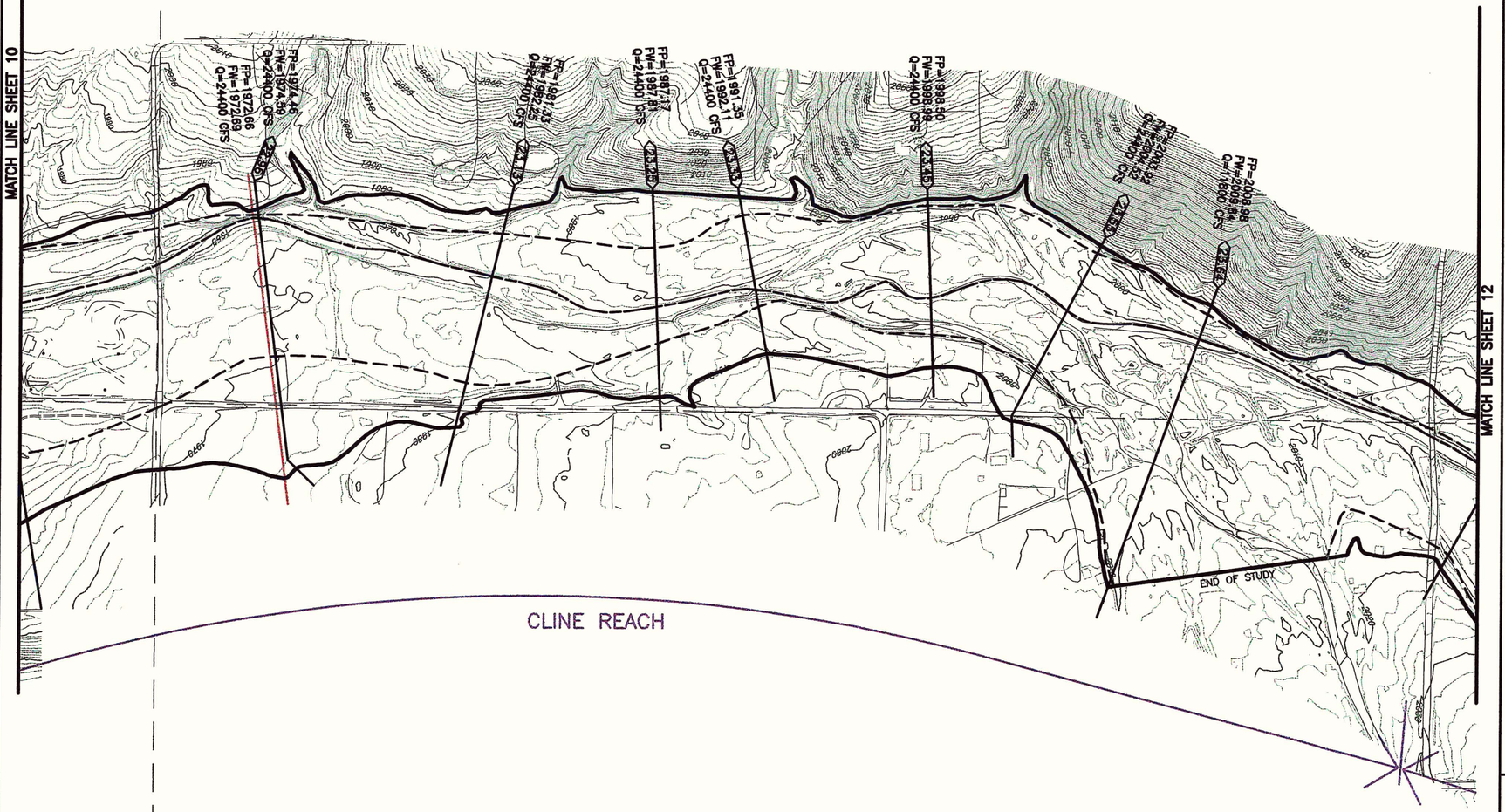
June 29, 2001, 11:20 AM

PHOTO FLIGHT DATE – DECEMBER, 1988; (MARK HURD CORPORATION) AND ADDITIONAL TOPO FLOWN OCTOBER, 1995 BY KENNEY AERIAL

NOTE: WATER SURFACE ELEVATIONS TAKEN FROM REQUEST OF LETTER OF MAP REVISION FOR SKUNK CREEK THROUGH TRAMANTO, 11/6/2000 (RM 13.00 TO RM 18.74) AND FROM SKUNK CREEK FLOODPLAIN DELINEATION STUDY, JUNE 1996 (RM18.84 TO RM 26.17)



KENNY AERIAL MAPPING, INC., PHOTOGRAMMETRY, DECEMBER 1995 AND MAY 1996

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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

SKUNK CREEK WATERCOURSE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP

F.C.D. CONTRACT NO. 99-23

LEGEND

- HYDRAULIC BASELINE PER FEMA
- HYDRAULIC BASELINE PER CLOMR
- CLOMR 100-YEAR FLOODPLAIN
- CLOMR 100-YEAR FLOODWAY
- FEMA 100-YEAR FLOODPLAIN
- FEMA 100-YEAR FLOODWAY
- CROSS SECTION — (15.144) CROSS SECTION DESIGNATION — FP= 1988.74 FLOODPLAIN WATER SURFACE ELEVATION — FW= 1988.54 FLOODWAY WATER SURFACE ELEVATION — Q = CFS DISCHARGE FOR WATER SURFACE ELEVATION 100 YEAR DISCHARGE
- PORTION OR ENTIRE CROSS SECTION DELETED FOR HYDRAULIC MODELING
- NEW CROSS SECTION FOR HYDRAULIC MODELING
- SECTION LINES

INDEX

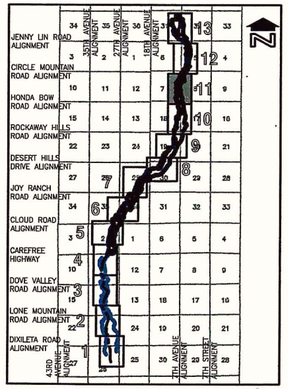


FIGURE 4-4.1

200' 0' 200' 400'

CONTOUR INTERVAL: 2 FEET

Stantec

	BY	DATE
DESIGN	SRG	JUNE 2000
DESIGN CHK.	PJE	JUNE 2000
PLANS	HAR	JUNE 2000
PLANS CHK.	PJE	JUNE 2000

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

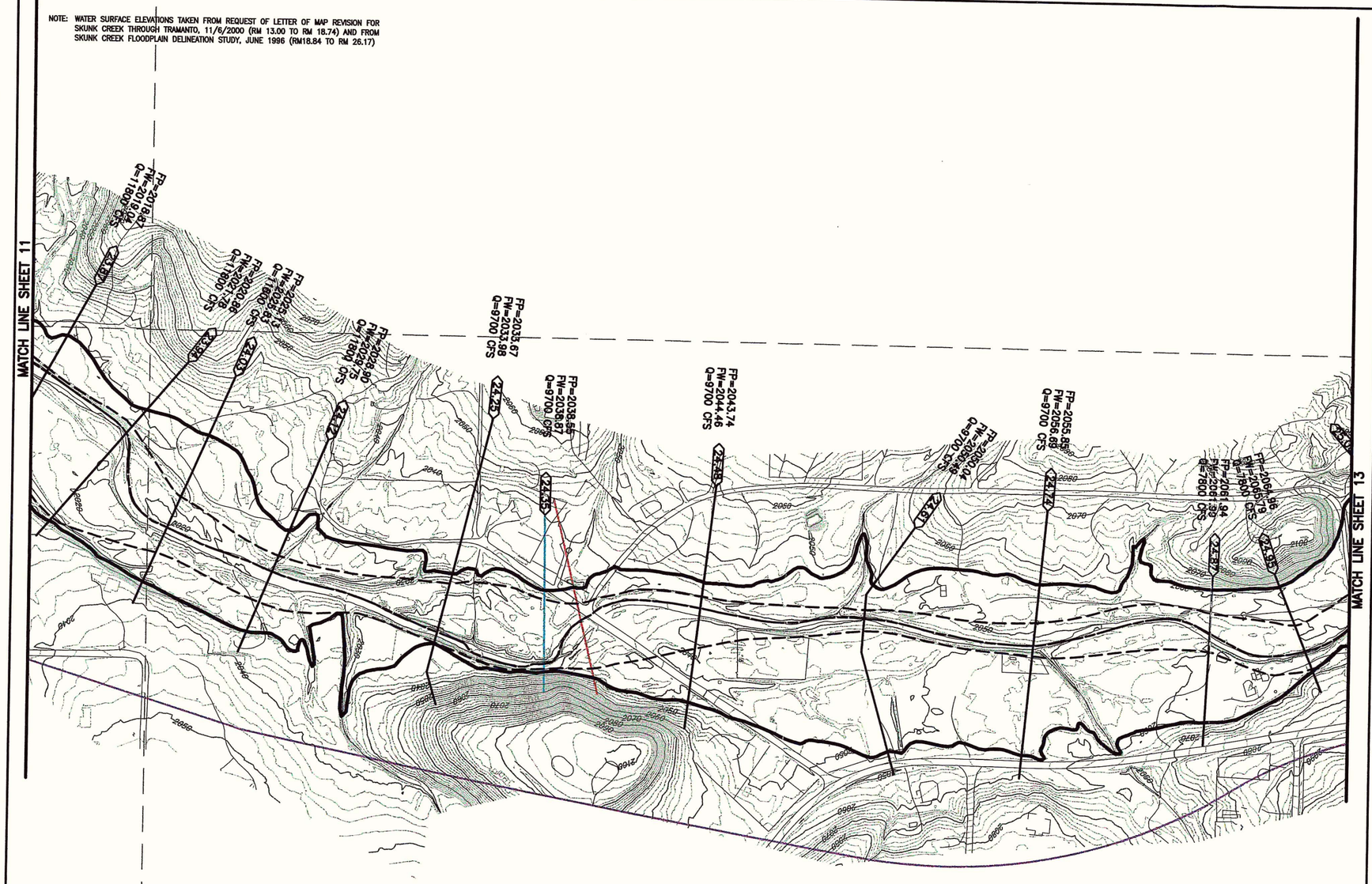
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

PLATE 11 OF 13

NOTE: WATER SURFACE ELEVATIONS TAKEN FROM REQUEST OF LETTER OF MAP REVISION FOR SKUNK CREEK THROUGH TRAMANTO, 11/6/2000 (RM 13.00 TO RM 18.74) AND FROM SKUNK CREEK FLOODPLAIN DELINEATION STUDY, JUNE 1996 (RM18.84 TO RM 26.17)



SHANGRI-LA REACH

KENNY AERIAL MAPPING, INC., PHOTOGRAMMETRY, DECEMBER 1995 AND MAY 1996

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June 19 2001, 04:52 PM

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

SKUNK CREEK WATERCOURSE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP

F.C.D. CONTRACT NO. 99-23

LEGEND

- HYDRAULIC BASELINE PER FEMA
- HYDRAULIC BASELINE PER CLOMR
- CLOMR 100-YEAR FLOODPLAIN
- CLOMR 100-YEAR FLOODWAY
- FEMA 100-YEAR FLOODPLAIN
- FEMA 100-YEAR FLOODWAY
- CROSS SECTION — 15.144 (CROSS SECTION DESIGNATION); FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION); FW= 1888.54 (ENCROACHED WATER SURFACE ELEVATION); Q = CFS (100 YEAR DISCHARGE)
- PORTION OR ENTIRE CROSS SECTION DELETED FOR HYDRAULIC MODELING
- NEW CROSS SECTION FOR HYDRAULIC MODELING
- SECTION LINES

INDEX

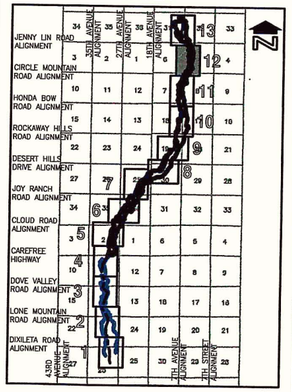


FIGURE 4-4.1

200' 0' 200' 400'

CONTOUR INTERVAL: 2 FEET

Stantec

	BY	DATE
DESIGN	SRG	JUNE 2000
DESIGN CHK.	PJE	JUNE 2000
PLANS	HAR	JUNE 2000
PLANS CHK.	PJE	JUNE 2000
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

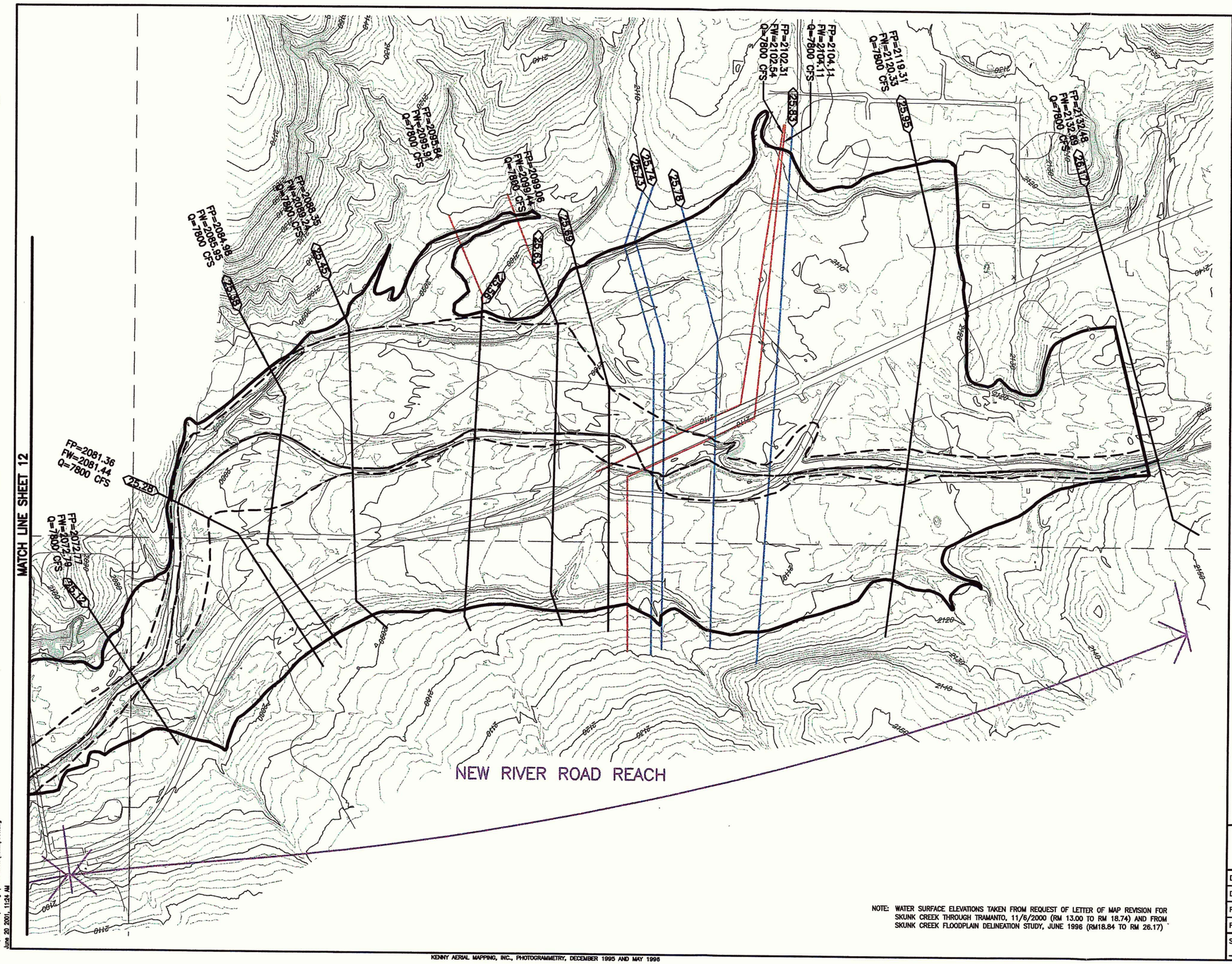
CHIEF ENGINEER AND GENERAL MANAGER

PLATE 12 OF 13

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

SKUNK CREEK WATERCOURSE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP

F.C.D. CONTRACT NO. 99-23



NOTE: WATER SURFACE ELEVATIONS TAKEN FROM REQUEST OF LETTER OF MAP REVISION FOR SKUNK CREEK THROUGH TRAMANTO, 11/6/2000 (RM 13.00 TO RM 18.74) AND FROM SKUNK CREEK FLOODPLAIN DELINEATION STUDY, JUNE 1996 (RM18.84 TO RM 26.17)

KENNY AERIAL MAPPING, INC., PHOTOGRAMMETRY, DECEMBER 1995 AND MAY 1996

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LEGEND

- HYDRAULIC BASELINE PER FEMA
- HYDRAULIC BASELINE PER CLOMR
- CLOMR 100-YEAR FLOODPLAIN
- CLOMR 100-YEAR FLOODWAY
- FEMA 100-YEAR FLOODPLAIN
- FEMA 100-YEAR FLOODWAY
- CROSS SECTION — 15.144 (CROSS SECTION DESIGNATION); FP= 1868.74 (FLOODPLAIN WATER SURFACE ELEVATION); FW= 1869.54; Q= CFS (DESIGNATED WATER SURFACE ELEVATION FOR 100 YEAR DISCHARGE)
- PORTION OR ENTIRE CROSS SECTION DELETED FOR HYDRAULIC MODELING
- NEW CROSS SECTION FOR HYDRAULIC MODELING
- SECTION LINES

INDEX

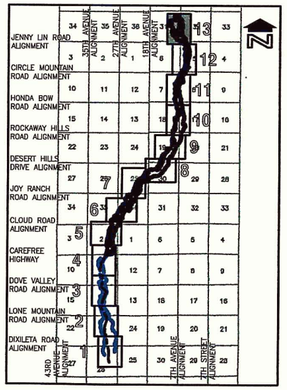


FIGURE 4-4.1

N 200' 0' 200' 400'

CONTOUR INTERVAL: 2 FEET

Stantec

	BY	DATE
DESIGN	SRG	JUNE 2000
DESIGN CHK.	PJE	JUNE 2000
PLANS	HAR	JUNE 2000
PLANS CHK.	PJE	JUNE 2000
SUBMITTED BY:		DATE:

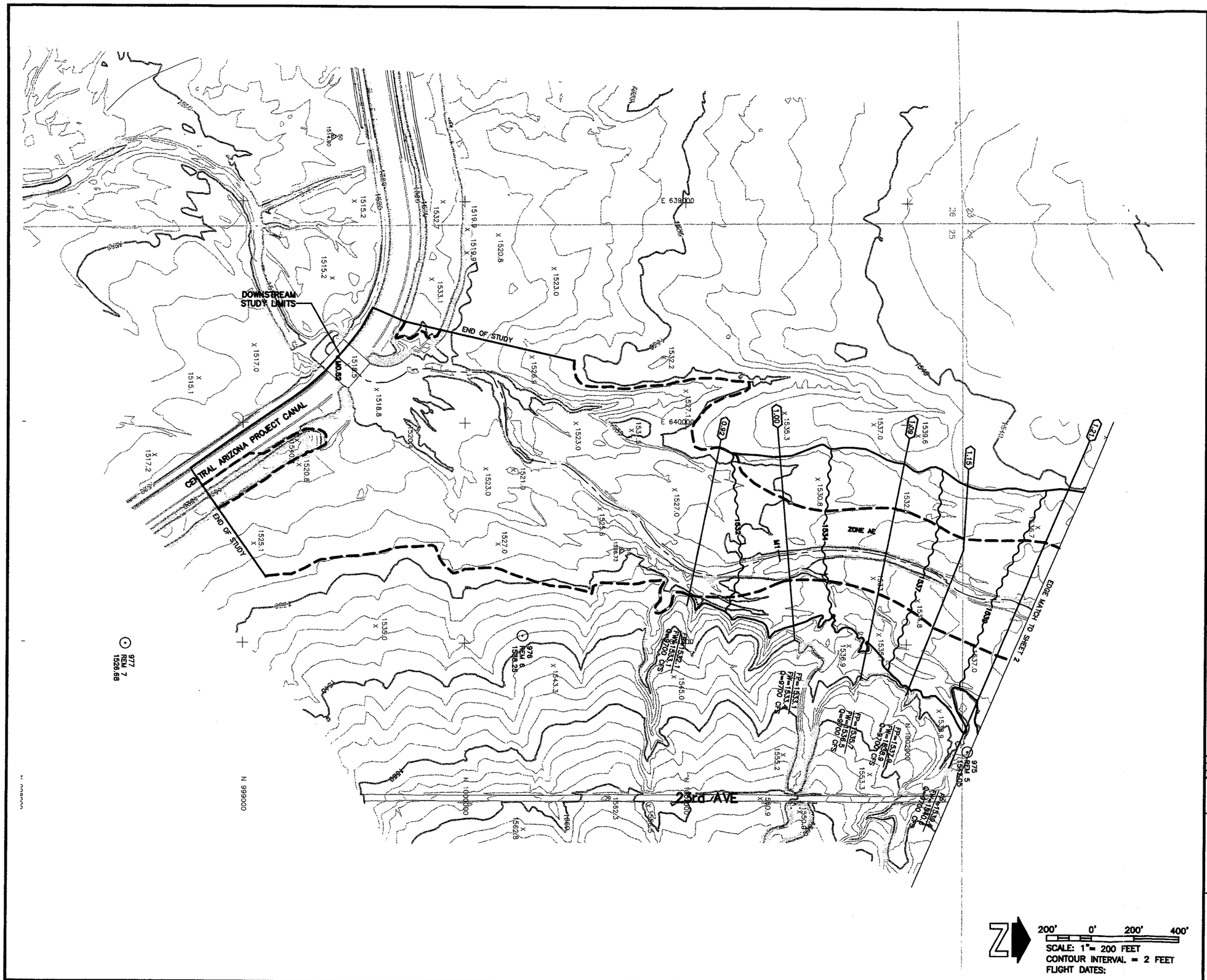
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

PLATE 13 OF 13



LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 + M13.0
CROSS SECTION	A 0.10 — FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION); FW= 1889.54 (ENCROACHED WATER SURFACE ELEVATION); Q = CFS (100 YEAR DISCHARGE); ITEM CROSS SECTION DESIGNATION; CROSS SECTION RIVER MILE DESIGNATION
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
SECTION LINES	
CORPORATE BOUNDARIES	

ELEVATION REFERENCE MARKS

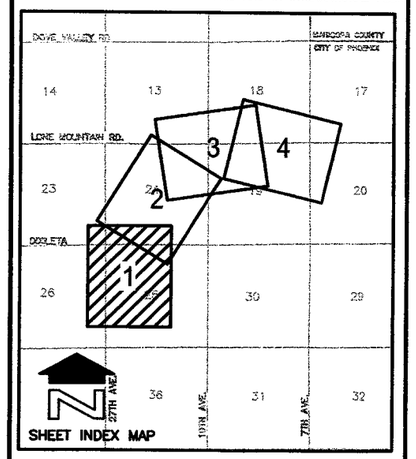
NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1988. CONVERSION FACTOR 1988 NAVD= +x.xx TO 1929 NGVD

I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
RBM 5	1542.05	1.2 FT NORTH OF A STEEL "T" POST, 19 FT SOUTH OF THE ℄ OF AN 8 FT WIDE E/W DIRT ROAD, 56 FT NORTH OF THE ℄ OF A 12 FT WIDE E/W DIRT ROAD. N: 1002279.603536 E: 641463.706425
RBM 6	1538.25	1.4 FT NORTH OF A STEEL "T" POST AND 33 FT NORTHEAST OF A MULTI-ARMED SAGUARO CACTUS. N: 1000261.013195 E: 640965.392187
RBM 7	1526.68	2.2 FT NORTH OF A STEEL "T" POST, 22 FT SOUTH OF THE ℄ OF AN 8 FT WIDE SE/NW DIRT ROAD, 53 FT WEST OF A N/S FENCE LINE (T POSTS NO WIRE) AND, 275± FT EAST OF THE EASTERN TOP EDGE OF THE CAP CANAL LEVEE. N: 998471.031574 E: 641005.539727

NOTES

1- THE HYDRAULIC BASE LINE IS CROSS SECTION STATION 10,000 UNLESS NOTED OTHERWISE

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET.



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FIGURE 4-4.2

FLOODWAY AND FLOODPLAIN MAP

F.C.D. CONTRACT NO. 99-23

Stantec

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	NKD	4/01
PLANS CHK.	PJE	4/01

SHEET 1 OF 4

THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS FOR AERIAL MAPPING COMPANY PHOTOGRAMMETRY JULY 20, 1999. GROUND CONTROL SURVEY DATA

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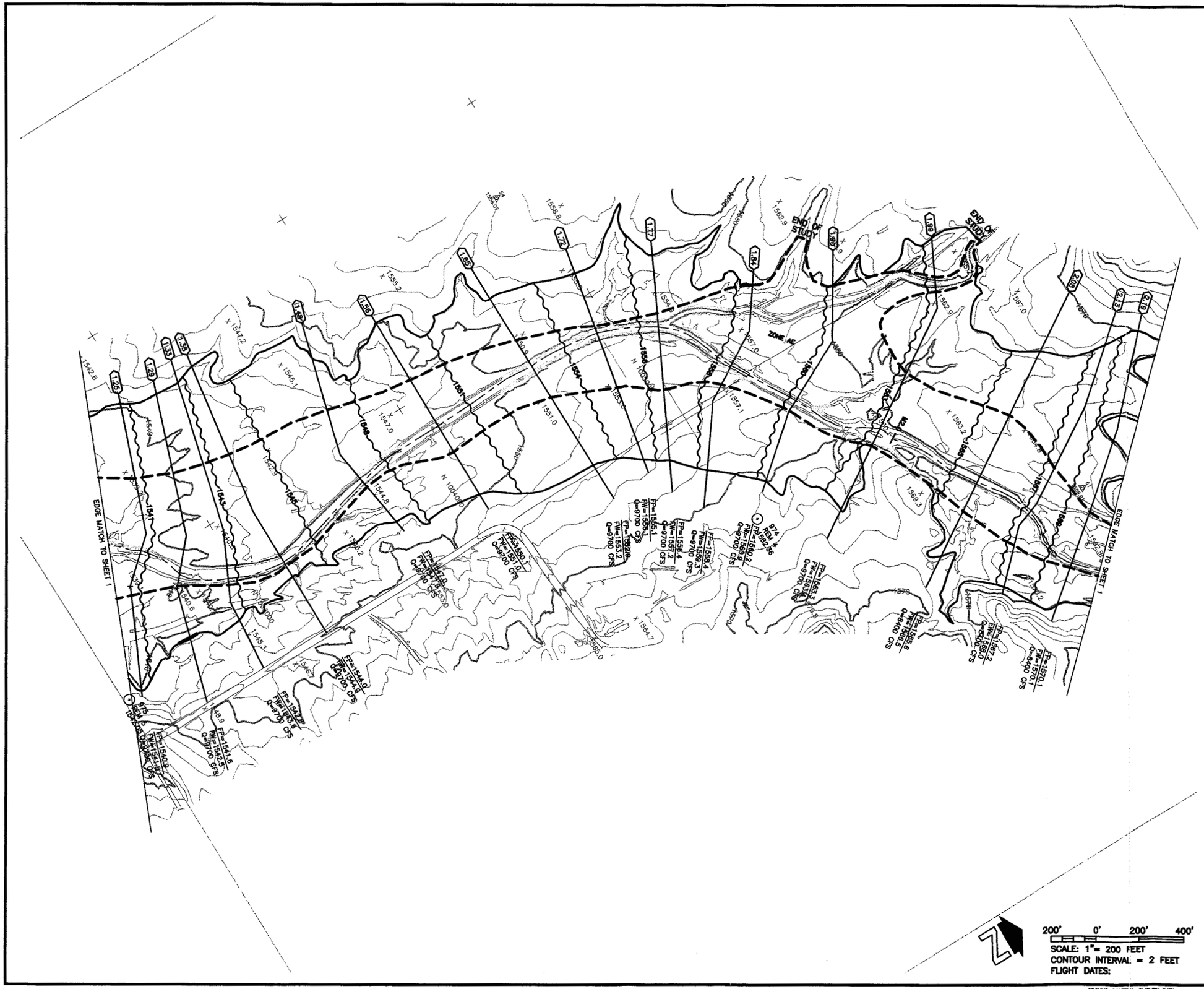


LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 + M13.0
CROSS SECTION	A 0.10 — FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION); FW= 1889.54 (ENCROACHED WATER SURFACE ELEVATION); Q = CFS (100 YEAR DISCHARGE); FOUR CROSS SECTION DESIGNATION; CROSS SECTION THREE MILE DESIGNATION
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
SECTION LINES	
CORPORATE BOUNDARIES	

ELEVATION REFERENCE MARKS

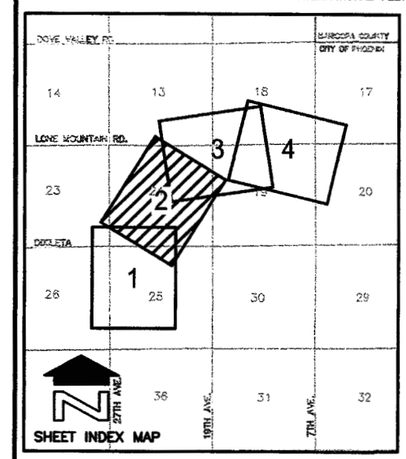
NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1988. CONVERSION FACTOR 1988 NAVD= +x.xx TO 1929 NGVD

I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
REM 4	1562.36	1.6 FT NORTH OF A STEEL "T" POST, 42 FT EAST OF THE ℄ OF A 12 FT WIDE N/S DIRT ROAD AND 335± FT NNW OF THE NORTHWEST CORNER OF THE LANDSCAPE MATERIALS GRAVEL PIT. N: 1005114.697250 E: 642265.756249
REM 5	1542.05	1.2 FT NORTH OF A STEEL "T" POST, 19 FT SOUTH OF THE ℄ OF AN 8 FT WIDE E/W DIRT ROAD, 56 FT NORTH OF THE ℄ OF A 12 FT WIDE E/W DIRT ROAD. N: 1002279.603536 E: 641483.706425

NOTES

1- THE HYDRAULIC BASE LINE IS CROSS SECTION STATION 10,000 UNLESS NOTED OTHERWISE

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET.



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FIGURE 4-4.2

FLOODWAY AND FLOODPLAIN MAP

F.C.D. CONTRACT NO. 99-23

Stantec

	BY	DATE
DESIGN	--	--
DESIGN CHK.	--	--
PLANS	NKD	4/01
PLANS CHK.	PJE	4/01

SHEET 2 OF 4

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LEGEND

100-YR FLOODPLAIN BOUNDARY

FLOODWAY BOUNDARY

HYDRAULIC BASE LINE WITH RIVER MILE — M12.0 + M13.0

CROSS SECTION — A 0.10 — FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION); FW= 1889.54 (FLOODWAY WATER SURFACE ELEVATION); Q = CFS (100 YEAR DISCHARGE); TOTAL CROSS SECTION ELEVATION; CROSS SECTION BASE LINE DESIGNATION

ELEVATION REFERENCE MARK — ERM XXX

BASE FLOOD ELEVATIONS — 1221

ZONE DESIGNATIONS — ZONE AE

SECTION LINES

CORPORATE BOUNDARIES

ELEVATION REFERENCE MARKS

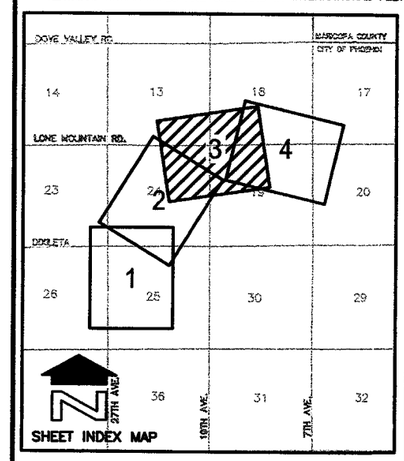
NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1988. CONVERSION FACTOR 1988 NAVD= +x.xx TO 1929 NGVD

I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
REM 2	1613.81	1.4 FT NORTH OF A STEEL "T" POST, 27 FT ENE OF A SINGLE SAGUARO CACTUS, 44.1 FT SOUTH OF THE ℄ OF AN 8 FT WIDE DIRT ROAD AND, 1.1± MILES EAST OF THE NORTHWEST CORNER OF THE LANDSCAPE MATERIALS GRAVEL PIT. N: 1006383.449870 E: 647183.030222
REM 3	1584.48	1.3 FT NORTH OF A STEEL "T" POST, 11.7 FT NORTH OF THE ℄ OF AN 8 FT WIDE SW/NE DIRT ROAD, 3.2 FT SW OF A MULTI-ARMED SAGUARO CACTUS AND, 0.6± MILES EAST OF THE NORTHWEST CORNER OF THE LANDSCAPE MATERIALS GRAVEL PIT. N: 1006878.382064 E: 644162.738240
REM 4	1562.36	1.6 FT NORTH OF A STEEL "T" POST, 42 FT EAST OF THE ℄ OF A 12 FT WIDE N/S DIRT ROAD AND 335± FT NNW OF THE NORTHWEST CORNER OF THE LANDSCAPE MATERIALS GRAVEL PIT N: 1005114.697250 E: 642265.758249

NOTES

1- THE HYDRAULIC BASE LINE IS CROSS SECTION STATION 10,000 UNLESS NOTED OTHERWISE

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET.



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FIGURE 4-4.2

FLOODWAY AND FLOODPLAIN MAP

F.C.D. CONTRACT NO. 99-23

Stantec

	BY	DATE
DESIGN	--	--
DESIGN CHK.	--	--
PLANS	NKD	4/01
PLANS CHK.	PJE	4/01

SHEET 3 OF 4

THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS FOR AERIAL MAPPING COMPANY PHOTOGRAMMETRY JULY 20, 1999.

GROUND CONTROL SURVEY DATA

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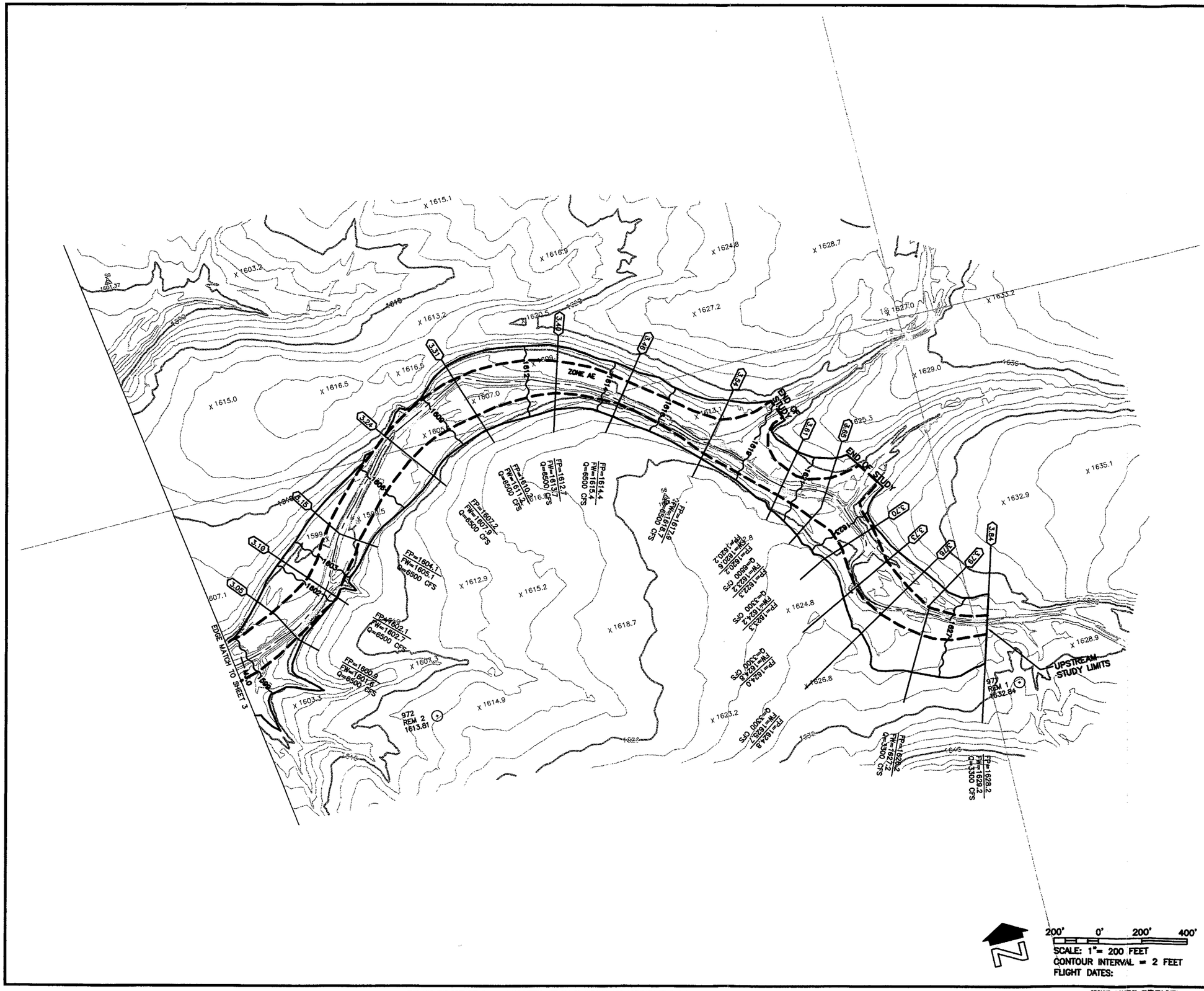


LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 + M13.0
CROSS SECTION	A 0.10 — FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION); FW= 1889.54 (ENCROACHED WATER SURFACE ELEVATION); Q = CFS (100 YEAR DISCHARGE); FIRM CROSS SECTION DESIGNATION; CROSS SECTION INDEX MILE DESIGNATION
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
SECTION LINES	
CORPORATE BOUNDARIES	

ELEVATION REFERENCE MARKS

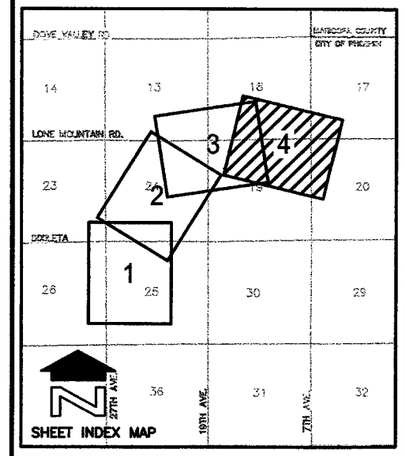
NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1988. CONVERSION FACTOR 1988 NAVD= +x.xx TO 1929 NGVD

I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
RCM 1	1632.84	1.3 FT NORTH OF STEEL "T" POST, 26.0 FT SOUTH OF THE ℄ OF AN 8' WIDE EAST/WEST DIRT ROAD, AND 1.6± MILES EAST OF THE NORTHWEST CORNER OF THE LANDSCAPE MATERIALS GRAVEL PIT. N: 1005919.804995 E: 649757.329855
RCM 2	1613.81	1.4 FT NORTH OF A STEEL "T" POST, 27 FT ENE OF A SINGLE SAGUARO CACTUS, 44.1 FT SOUTH OF THE ℄ OF AN 8 FT WIDE DIRT ROAD AND, 1.1± MILES EAST OF THE NORTHWEST CORNER OF THE LANDSCAPE MATERIALS GRAVEL PIT. N: 1006383.449870 E: 647183.030222

NOTES

1- THE HYDRAULIC BASE LINE IS CROSS SECTION STATION 10,000 UNLESS NOTED OTHERWISE

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET.



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FIGURE 4-4.2

FLOODWAY AND FLOODPLAIN MAP

F.C.D. CONTRACT NO. 99-23

Stantec

	BY	DATE
DESIGN	—	—
DESIGN CHK.	—	—
PLANS	NKD	4/01
PLANS CHK.	PJE	4/01

SHEET 4 OF 4

THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS FOR 1"= 200' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS

AERIAL MAPPING COMPANY PHOTOGRAMMETRY JULY 20, 1999.

GROUND CONTROL SURVEY DATA PROVIDED BY TETRA TECH INC.

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4-4.3 PARAMETER ESTIMATION

This section describes procedures utilized to estimate input parameters to the HEC-RAS models developed for the study.

4-4.3.1 Manning's n-Value

4-4.3.1.1 Skunk Creek

HEC-2 models prepared by Montgomery Watson, Castro Fleet and Hoskin Engineering Consultants utilized Manning's roughness coefficients of 0.038 to 0.069 for the left overbank, 0.030 to 0.052 for the channel, and 0.031 to 0.0.057 for the right overbank. The HEC-2 model did not contain n-value subdivisions of the channel or overbank areas.

Field visits where conducted for the study reach of Skunk Creek to gather data to estimate Manning's roughness coefficients. Manning's n-values are estimated using the method set forth in the U.S. Geological Survey publication Estimated Manning's n-Values for Stream Channels and Flood Plains in Maricopa County Arizona (USGS, 1991). The method involves the selection of an initial value of Manning's n-value based upon the bed material and then the adjustment of that value for channel irregularities, the effects of obstructions, vegetation and channel cross-sectional variations. If the channel has sufficient meander to increase roughness, then the sum of the base n-value plus subsequent adjustments is multiplied by a meander value, m.

Four sub-reaches are identified for the study reach of Skunk Creek for Mannings "n"-value estimation.

Reach 1 commences at RM 13.0 and extends to RM 18.57 and can be characterized as a 'riffles and pool' stream that alternates between a single main channel with overbank flow areas and a multiple braided channel with island and overbank areas.

In general, the channel bed material can be described as a matrix of material ranging in size between course sand, gravel, cobbles and minor boulders. Cobbles and boulders are primarily located in riffle portions of the channel. Relative to the course sand and course gravel component for the entire reach cobbles and boulders make up a small percentage of the bed material. Course sand and gravel is estimated to be the range of material size for the channel bed material. A base n-value of 0.028 is selected for channel bed material.

The degree of channel irregularity in this reach is generally minor. The banks are lined with dense, mature vegetation and are generally smooth. In some sections of this reach, there is evidence of local scour particularly in the sections with a single main channel and near vertical banks. The base n-value is adjusted by adding 0.002 for channel irregularity.

Vegetation occurs along the channel banks and at times within in the channel. An adjustment to the base n-value for channel vegetation is made under the category of obstructions. Vegetation within the channel is generally small and immature and more than likely will be removed during a major runoff event. In areas of dense vegetation, an adjustment to the base n-value is made. However, in areas characterized by small immature vegetation, the base n-value is not adjusted.

Throughout Reach 1, the main channel is lined with dense, mature vegetation. This vegetation consists typically of Palo Verde and Mesquite trees and Tamarask. Because the main channel is typically very wide in terms of the flow depth the impacts of the bank vegetation on the hydraulics is minor. To account for the hydraulic impacts, a composite n-value for the channel is estimated taking into consideration channel bed material and vegetated lined banks. An adjustment of 0.01 is added to the base n-value.

There are no significant channel bends within the reach. Therefore, no adjustment is made to the base n-value for meanders.

The summation of base-n-value and adjustments for the channel is 0.040. This value is used in channel and braided channel reaches.

The bed material for overbanks and islands areas is typically very fine. A base Manning's n-value of 0.025 is estimated for the overbank and island areas.

The only adjustment for the overbank area and island base n-value is for vegetative cover. In general, vegetation along the channel fringe and on the islands is dense and mature. Typically, the density of the vegetation decreases with increasing distance from the main channel. The types of vegetation in the overbank is characterized by the presence of Creosote and various species of cacti and grass. Five different vegetative cover densities are identified for this overbank reach; sparse, minor moderate heavy and very heavy. Manning's base n-value adjustments of 0.01, 0.02, 0.03, 0.045 and 0.075 are assigned to each density respectively.

There is variability of vegetation densities across a subject area and throughout the reach, therefore, overbank and island n-values are assigned on a cross-section by cross-section basis using aerial photography and field photographs as guides.

Reach 2 commences at RM 18.57 and extends to RM 19.92. Reach 2 is characterized as a riffle and pool stream that predominately consists of riffles. Numerous channel braids occur throughout the reach.

In general the bed, material is made up of medium to course grained gravel with cobbles. A base Manning's n-value of 0.035 is selected for this reach.

Even though this reach contains numerous braided channels the degree of irregularity for this reach is negligible.

As with Reach 1, vegetation is present along the channel banks and at isolated locations within the channel. Since the occurrence of vegetation within the channel is at isolated locations, bank vegetation and channel vegetation adjustment to Manning's base n-vale are considered separate with channel vegetation considered as obstructions. In general, the channel bed vegetation is immature and will most likely be scoured out during a 100-year flood event. There are no other obstructions in this reach.

Vegetation along the banks within Reach 2 is similar to Reach 1 in type, distribution and density. The channel base n-value is adjusted by adding 0.01 to account for vegetation influence on channel roughness.

The channel geometry for this reach is continually changing in terms of shape, conveyance location in relation to the overall cross-section. Therefore the base n-value is adjusted by adding 0.005.

Manning's n-values are estimated and adjusted for channel and overbank segments for Reach 2. A value of 0.05 is estimated for channel segments whereas overbank n-values are assigned identically as in Reach 1.

Reach 3 commences at RM 19.92 and extends to RM 21.41. This reach can be classified as a riffle and pool stream that predominately consists of pools. The upper and lower portion of this reach is braided, whereas a single main channel characterizes the middle portion.

In general, Reach 3 bed material can be described as a fine to very fine grained gravel with some cobbles. The base Manning's n-value estimated for this reach is 0.028.

Variations in channel geometry and irregularity are gradual. The degree of irregularity for this reach is negligible.

Vegetation along the banks within Reach 3 is similar to Reach 1 and Reach 2 in type, distribution and density. The channel base n-value is adjusted by adding 0.01 to account for vegetation influence on channel roughness.

Manning's n-values are estimated and adjusted for channel and overbank segments for Reach 3. A value of 0.038 is estimated for channel segments whereas overbank n-values are assigned identically as in Reach 1.

Reach 4 commences at RM 21.41 and extends to RM 26.17. The physical characteristics of this reach are highly variable alternating between a braided section and a single main channel.

In general the bed material can be described as medium to very course grained gravel. The base Manning's n-value estimated for this reach is 0.035.

The only adjustment to the base channel n-value for this reach is for channel vegetation. An adjustment value of 0.01 is added to the base n-value resulting in an adjusted channel n-value of 0.045.

Overbank n-values are assigned identically as in Reach 1.

A summary of Manning's n-values for Skunk Creek are listed in Table 4-4.1.

4-4.3.1.2 Sonoran Wash

The study reach of Sonoran Wash is separated into 13 reaches that have similar hydraulic characteristics, and therefore have similar Manning's n-values. Reach numbering is from downstream to upstream starting at Reach 1, at the Central Arizona Project (CAP) overchute (River Mile 0.52), and ending at Reach 13 (River Mile 3.84). Reach numbering is not related to numbering or naming of reaches in any other adjacent study. Plate 1 (see Appendix A) shows the location and limit of each reach as well as locations of photographs of typical reach characteristics.

Photographs, cross-section plots displaying bank station locations and Manning's n-value calculation sheets are provided in Appendix A.

Each reach is identified based upon field reconnaissance, ground photographs and by examining 9-inch by 9-inch aerial photographs (1:7,200 scale). The discerning characteristics are channel size and shape, similarities in bed material, vegetation and the presence or absence of channel obstructions. The entire study length was viewed on foot during the field reconnaissance and each reach was photographed at representative locations.

Manning's n-values are estimated using the method set forth in the U.S. Geological Survey publication Estimated Manning's n-Values for Stream Channels and Flood Plains in Maricopa County Arizona (USGS, 1991). The method involves the selection of an initial value of Manning's n-value based upon the bed material and then the adjustment of that value for channel irregularities, the effects of obstructions, vegetation and channel cross-sectional variations. If the channel has sufficient meander to increase roughness, then the sum of the base n-value plus subsequent adjustments is multiplied by a meander value, m.

The base n-value for the bed material roughness is estimated from field investigations. A 1-foot square grid (grid on 1-inch centers) is utilized for the estimation of the average size of bed material. Adjustment of the base n-value is then made based on vegetation present in the channel and the overbanks, field assessment of the channel bank conditions and the impact of any obstructions and a review of the cross-section plots for variations in channel geometry.

Reach 1 consists of only one cross-section, River Mile (RM) 0.52. This cross-section represents the concrete CAP overchute. A base Manning's n-value of 0.015 is selected for the entire cross-section with no adjustments.

Reaches 2, 3 and 4 extend from RM 0.57 to RM 1.00. The bed material for these reaches consists of course sand and fine gravel in the channel and fine sand and silt in the overbanks. A base Manning's n-value of 0.026 and 0.025 is selected for the channel and overbanks, respectively. Adjustments to the base n-values are primarily due to vegetation. There are minor, isolated pockets of vegetation present in the main channel and the channel banks are heavily lined with vegetation. In order to separate the bank vegetation from the channel bed vegetation on the n-value calculation

sheets, the channel bed vegetation is considered as channel obstructions. Overbank vegetation varies both laterally and longitudinally throughout each reach. A weighted vegetation n-value adjustment is estimated for both the left and right overbanks for each reach. With the exception of Reach 4, there are no other adjustments to the base n-values. For Reach 4, additional adjustments are made to the base n-value to account for occasional variations in the channel geometry and left overbank.

Reach 5 extends from RM 1.09 to RM 1.77. The channel can be characterized by 'riffles and pools'. The bed material for this reach consists of course sand and gravel in the pools and cobbles with course sand and gravel and minor boulders in the riffles. A reach average base Manning's n-value for the channel of 0.028 is selected. The base Manning's n-value for the overbank bed material is 0.025. As with the lower reaches, the primary adjustment to the base n-value is due to vegetation. The vegetative conditions for Reach 5 are similar to those of the lower reaches and a weighted n-value adjustment is estimated for both overbanks.

Just upstream of Reach 5, the general bed characteristics of Sonoran Wash change from a 'riffle and pool' watercourse dominated by pools to a 'riffle and pool' watercourse dominated by riffles. In general, the channel bed material can be described as a matrix of material ranging in size between course sand, gravel, cobbles and minor boulders with the cobble component being greater than what was observed for Reach 5. A base average Manning's n-value of 0.030 is selected for all reaches upstream of Reach 5. Vegetative conditions in both the channel and overbanks are similar to those of the lower reaches.

Further differentiation of the upper portion of the study (Reaches 6 through 13) is based on the presence or absence of braided and tributary channels. Reaches 6 and 8 both include a tributary channel. In both locations, the tributary enters the main channel from the west. For Reaches 10 and 12, the channel is braided and the right braid is identified as the main channel. Additional consideration for all of the upper reaches (Reaches 6 through 13) is given to variations in channel geometry to account for the transitions in and out of the braided sections.

Table 4-4.2 lists the left overbank, channel and right overbank Manning's n-values utilized in the hydraulic analysis for Reaches 1 through 5 as well as Reaches 7, 9, 11 and 13. Reaches 6, 8, 10 and 12 are modeled using the horizontal variation in n-value option in HEC-RAS and these values are listed in Table 4-4.3. Where appropriate the

weighted overbank n-values are further subdivided into uniform hydraulic sections. This is accomplished by using the horizontal variation in n-value option in HEC-RAS without adjusting the overbank n-value. Guidance for the subdivision is provided in Computation of Water-Surface Profiles in Open Channels (U.S.G.S., 1984).

TABLE 4-4.1
Summary of Manning's n-values Skunk Creek Wash

Cross-section ID	n_1	n_2	n_3	n_4	n_5	n_6	n_7	n_8	n_9	n_{10}	n_{11}	n_{12}	n_{13}
1	2	3	4	5	6	7	8	9	10	11	12	13	14
26.17	0.045	0.045	0.055										
25.95	0.045	0.035	0.045	0.055	0.045								
25.83	0.055	0.045	0.045	0.055	0.035	0.045							
25.78	0.055	0.045	0.045	0.035	0.045	0.055	0.045						
25.74	0.045												
25.73	0.045												
25.69	0.055	0.045	0.035	0.045	0.055	0.045	0.035						
25.63	0.055	0.045	0.035	0.045	0.055	0.045	0.035						
25.56	0.055	0.045	0.035	0.055	0.045	0.055	0.045	0.035					
25.45	0.055	0.045	0.035	0.045	0.045	0.055	0.045						
25.38	0.055	0.045	0.035	0.055	0.07	0.045	0.07	0.045	0.055				
25.28	0.055	0.035	0.055	0.045	0.045								
25.12	0.055	0.045	0.07										
24.95	0.07	0.045	0.045	0.055									
24.87	0.055	0.045	0.055	0.045	0.045								
24.74	0.035	0.045	0.07										
24.61	0.035	0.045	0.07	0.045	0.07								
24.48	0.055	0.035	0.055	0.045	0.055								
24.38	0.055	0.045	0.055										
24.25	0.055	0.045	0.045	0.055	0.045								
24.12	0.045	0.045	0.035										
24.03	0.045	0.045	0.055	0.035									
23.94	0.045	0.055	0.045	0.045									
23.87	0.045	0.045	0.07	0.045	0.1	0.045							
23.64	0.055	0.07	0.045	0.1									
23.55	0.045	0.045	0.055	0.045	0.07								
23.45	0.045	0.045	0.1	0.045	0.1	0.045							

TABLE 4-4.1 Cont.
Summary of Manning's n-values Skunk Creek Wash

Cross-section ID 1	n_1 2	n_2 3	n_3 4	n_4 5	n_5 6	n_6 7	n_7 8	n_8 9	n_9 10	n_{10} 11	n_{11} 12	n_{12} 13	n_{13} 14
23.33	0.055	0.045	0.045	0.055									
23.25	0.055	0.045	0.07										
23.13	0.035	0.055	0.045	0.1	0.035								
22.96	0.055	0.035	0.07	0.1	0.045	0.035							
22.86	0.055	0.045	0.055	0.035	0.1	0.045	0.1	0.045					
22.79	0.055	0.1	0.045	0.1	0.045								
22.73	0.055	0.1	0.045	0.045									
22.67	0.045	0.055	0.045	0.045									
22.56	0.045	0.055	0.045	0.07	0.045								
22.48	0.055	0.045	0.055	0.045	0.07	0.045							
22.43	0.055	0.045	0.055	0.045	0.055	0.045	0.07	0.045					
22.36	0.055	0.045	0.035	0.07	0.045	0.07	0.045						
22.29	0.055	0.045	0.035	0.045	0.07	0.045	0.07	0.045	0.07				
22.22	0.045	0.035	0.045	0.055	0.045	0.07							
22.15	0.055	0.045	0.035	0.045	0.055	0.07	0.045	0.045					
22.08	0.055	0.045	0.045	0.045	0.055								
21.99	0.055	0.045	0.055	0.045	0.035	0.045	0.055	0.045					
21.91	0.055	0.045	0.035	0.07	0.045	0.07	0.045						
21.82	0.055	0.045	0.035	0.07	0.045	0.07	0.045	0.055					
21.77	0.055	0.045	0.035	0.07	0.045	0.045	0.055						
21.69	0.055	0.045	0.07	0.045	0.055								
21.63	0.055	0.045	0.055	0.045	0.07	0.045							
21.58	0.035	0.045	0.07	0.045	0.055	0.045	0.055	0.045					
21.49	0.045	0.07	0.1	0.045	0.1	0.045							
21.41	0.055	0.038	0.1	0.038	0.1	0.038	0.045						
21.35	0.035	0.055	0.038	0.1	0.038	0.045							
21.31	0.035	0.055	0.07	0.038	0.045								
21.25	0.035	0.055	0.038	0.045									

TABLE 4-4.1 Cont.
Summary of Manning's n-values Skunk Creek Wash

Cross-section ID 1	n_1 2	n_2 3	n_3 4	n_4 5	n_5 6	n_6 7	n_7 8	n_8 9	n_9 10	n_{10} 11	n_{11} 12	n_{12} 13	n_{13} 14
21.18	0.035	0.055	0.038	0.045									
21.11	0.045	0.055	0.038	0.045									
21.05	0.045	0.055	0.038	0.045									
20.98	0.045	0.055	0.038	0.045									
20.9	0.045	0.055	0.07	0.038	0.045								
20.79	0.045	0.038	0.055										
20.71	0.045	0.035	0.055	0.038	0.055	0.045							
20.64	0.055	0.045	0.035	0.038	0.055	0.045							
20.62	0.055	0.045	0.035	0.038	0.055	0.045							
20.48	0.055	0.045	0.07	0.038	0.07	0.038	0.055	0.045					
20.38	0.055	0.045	0.055	0.038	0.07	0.038	0.045						
20.26	0.07	0.045	0.038	0.07	0.038	0.055	0.038	0.045					
20.16	0.035	0.07	0.055	0.038	0.055	0.038	0.055	0.038	0.055	0.038	0.055	0.038	0.045
20.05	0.035	0.038	0.055	0.038	0.07	0.038	0.055	0.038	0.055	0.038	0.035		
19.92	0.035	0.055	0.05	0.07	0.05	0.055	0.045						
19.83	0.035	0.055	0.05	0.07	0.045								
19.72	0.035	0.055	0.05	0.055	0.05	0.055	0.05	0.045					
19.62	0.035	0.05	0.055	0.05	0.045								
19.52	0.035	0.05	0.05	0.07	0.055	0.07	0.05	0.045					
19.41	0.045	0.05	0.055	0.05	0.07	0.05	0.045						
19.26	0.055	0.07	0.045	0.07	0.05	0.045							
19.18	0.045	0.05	0.055	0.05	0.055	0.05	0.045						
19.07	0.07	0.055	0.05	0.055	0.05	0.045							
18.96	0.055	0.05	0.07	0.045									
18.84	0.055	0.05	0.045										
18.74	0.055	0.05	0.055	0.05	0.055	0.045							
18.57	0.07	0.04	0.07	0.04	0.07	0.045							
18.49	0.07	0.04	0.07	0.04	0.07	0.055	0.04	0.07	0.045				

TABLE 4-4.1 Cont.
Summary of Manning's n-values Skunk Creek Wash

Cross-section ID 1	n_1 2	n_2 3	n_3 4	n_4 5	n_5 6	n_6 7	n_7 8	n_8 9	n_9 10	n_{10} 11	n_{11} 12	n_{12} 13	n_{13} 14
18.29	0.055	0.04	0.055	0.04	0.07	0.04	0.055	0.045					
18.23	0.055	0.04	0.055										
18.16	0.07	0.04	0.07	0.04	0.055	0.04	0.055						
18.09	0.07	0.04	0.07	0.055	0.04	0.045							
17.95	0.055	0.04	0.07	0.04	0.055	0.04	0.055						
17.84	0.055	0.04	0.055	0.04	0.055	0.04	0.055						
17.78	0.045	0.04	0.055	0.04	0.055								
17.65	0.045	0.04	0.055										
17.57	0.045	0.055	0.04	0.045									
17.48	0.045	0.04	0.045										
17.39	0.055	0.045	0.04	0.055									
17.3	0.045	0.04	0.07	0.045									
17.18	0.055	0.04	0.07	0.04	0.045								
17.06	0.07	0.04	0.07	0.04	0.045								
16.96	0.07	0.04	0.045	0.055									
16.87	0.045	0.04	0.045										
16.86	0.045	0.04	0.045										
16.68	0.07	0.04	0.045	0.04	0.055	0.045	0.055						
16.49	0.055	0.04	0.07	0.04	0.045	0.055							
16.27	0.045	0.055	0.045	0.055	0.04	0.035							
16.19	0.045	0.055	0.045	0.04	0.035								
16.07	0.035	0.055	0.04	0.035									
15.89	0.045	0.04	0.055	0.035									
15.75	0.035	0.04	0.045	0.04	0.035								
15.55	0.035	0.04	0.035										
15.41	0.035	0.04	0.055	0.035									
15.22	0.035	0.04	0.055	0.04	0.035								
15.12	0.035	0.04	0.055	0.04	0.035								

TABLE 4-4.1 Cont.
Summary of Manning's n-values Skunk Creek Wash

Cross-section ID	n_1	n_2	n_3	n_4	n_5	n_6	n_7	n_8	n_9	n_{10}	n_{11}	n_{12}	n_{13}
1	2	3	4	5	6	7	8	9	10	11	12	13	14
15.06	0.045	0.04	0.055	0.04	0.045	0.04	0.035						
14.89	0.035	0.055	0.045	0.04	0.035								
14.74	0.035	0.055	0.035	0.04	0.035								
14.54	0.035	0.04	0.055	0.07	0.055	0.035							
14.3	0.045	0.04	0.045	0.07	0.035								
14.07	0.045	0.07	0.045	0.04	0.045	0.07	0.035						
13.86	0.045	0.055	0.045	0.04	0.055	0.04	0.055	0.04	0.035				
13.66	0.045	0.055	0.045	0.04	0.055	0.04	0.055	0.04	0.035				
13.55	0.045	0.055	0.045	0.04	0.055	0.04	0.055	0.04	0.055	0.04	0.035		
13.4	0.045	0.04	0.045	0.04	0.055	0.04	0.045						
13.28	0.045	0.07	0.045	0.04	0.045	0.04	0.045						
13.16	0.045	0.1	0.045	0.07	0.045	0.07	0.045	0.07	0.04	0.055	0.045		
13.08	0.045	0.1	0.045	0.1	0.05	0.05	0.045						
13.04	0.045	0.05	0.045										
13.02	0.015	0.015	0.015										
13	0.015	0.015	0.015										

TABLE 4-4.2

Summary of Manning's n-values Sonoran Wash

		Manning's n-Value		
Reach Name	**Cross-Sections**	**Left Overbank**	**Channel**	**Right Overbank**
1	0.52	0.015	0.015	0.015
2	0.57 – 0.66	0.125	0.036	0.050
3	0.73	0.050	0.038	0.075
4	0.77 – 1.00	0.080	0.037	0.060
5	1.09 – 1.77	0.050	0.040	0.050
7	1.90 – 2.64	0.060	0.045	0.055
9	2.73	0.060	0.045	0.055
11	2.97 – 3.70	0.060	0.045	0.055
13	3.79 – 3.84	0.060	0.045	0.055

TABLE 4-4.3

Summary of Manning's n-values Sonoran Wash

		Manning's n-Value				
Reach Name	**Cross-Sections**	**Left Overbank**	**Channel**	**Overbank**	**Channel**	**Right Overbank**
6	1.84	0.060	0.045	0.055	0.036	0.055
8	2.69	0.060	0.045	0.055	0.036	0.055
10	2.77 – 2.93	0.060	0.045	0.060	0.045	0.055
12	3.73 – 3.76	0.060	0.045	0.060	0.045	0.055

4-4.3.2 Expansion and Contraction Coefficients

Expansion and Contraction Coefficients were estimated from procedures and guidelines listed in the HEC-RAS User Manual. A summary of expansion and contraction coefficients used in the study are listed in Table 4-4.4

Table 4-4.4

Summary of Expansion and Contraction Coefficients

Condition	Contraction Coefficient	Expansion Coefficient
Natural Reach Gradual Transitions	0.1	0.3
Channelized Reach Gradual Transitions	0.1	0.3
Transitions at Bridges	0.3	0.5

4-4.3.3 Starting Water Surface Elevation

The starting water surface elevation of the HEC-RAS models, for the 100-year event, for both Skunk Creek and Sonoran Wash were determined from the results of a two dimensional hydraluic model (FLO-2D) conducted for the area upstream of the CAP Canal. The two dimensional backwater analyses is described in the Skunk Creek Watercourse Master Plan, Attachment 3 Hydrology, Technical Data Note Book. Starting water surface elevations of 1533.70 ft. (RM 13.28) and 1532.10 ft. (RM 0.92) for Skunk Creek and Sonoran Wash, respectively, are used in the HEC-RAS models.

The starting water surface elevations for the 2-year and 10-year HEC-RAS models developed for both Skunk Creek (cross-section 13.08) and Sonoran Wash (cross-section 0.52) are set at critical depth.

4-4.4 CROSS-SECTION DESCRIPTION

4-4.4.1 Skunk Creek

Cross-section orientation and location used in the analysis was obtained form digital files provided by the District. (Skunk Creek Floodplain Delineation Study, FCD Contract 95-16). Cross-section location and alignment revisions were made at locations where it was determined necessary. The locations of where cross-section data was updated are displayed on Figure 4-4.1 Sheets 1 through 13.

4-4.4.2 Sonoran Wash

Cross-section data are determined utilizing a digital terrain model (DTM) and topographic mapping. Distance between cross-sections is measured along the hydraulic baseline (thalweg). Distance between bank stations of each cross-section is measured along the anticipated path of the center of mass of the overbank flow. Should there be no overbank flow, distance between bank stations is measured along the top of bank. Bank stations are picked at what appeared to be a natural/improved channel bank, or at major grade break in channel side slopes. The following criteria for cross-section location and alignment was utilized.

1. The maximum distance between cross-sections is approximately 500 feet.

2. Cross-sections used for hydraulic modeling are orientated perpendicular to primary flow paths.

3. Cross-section stationing is from left to right looking downstream with the thalweg location set at station 10,000.

4-4.5 MODELING CONSIDERATIONS

The following subsection apply only to the HEC-RAS models developed for the study.

4-4.5.1 Supercritical Flow

Warning messages from the HEC-RAS model at many locations reported that the assumed water surface elevation was set to critical depth, however the calculated water surface elevation was calculated below critical depth. This indicates a potential for supercritical flow. In the event that detail design is being pursued the designer should evaluated and design for supercritical flow conditions.

4-4.5.2 Bridges

Bridges modeled are located on the Skunk Creek watercourse at the Carefree Highway and New River road crossings. As-Built plans obtained from the Maricopa County Department of Transportation and field surveys are used to update bridge geometry files in the HEC-RAS model.

Bridge analysis routines in the HEC-RAS computer program are used to model the two bridges. Three methods, the energy equation, momentum balance, and Yarnell equation are used to evaluate low flow conditions. The method resulting in the highest energy answer is used in the evaluation. HEC-RAS pressure flow solution is utilized when flow comes into contact with the low cord of the bridge.

4-4.5.3 Levees and Dikes

There are no existing levees or dikes in the subject reaches.

4-4.5.4 Islands

At some locations for both Skunk Creek and Sonoran Wash, divided flow conditions exist. Divided flow conditions are more prevalent in the Skunk Creek reach than in the Sonoran Wash reach. Divided flow typically occurs when the flow patterns of the reach are braided. For the purpose of this study, islands resulting from divided flow are not delineated.

4-4.5.5 Flow Splits

Flow splits or flow breakout was identified to occur just upstream of the CAP canal along the west side of Skunk Creek (RM13.02 to RM 13.16). The flow breakout drains to Interstate 17 and does not return to the study area..

At the CAP canal, flow from Sonoran Wash mixes with flow from Skunk Creek and ponds upstream of the canal. An analysis of this condition was under taken to determine the backwater effect of the ponding on upstream water surface elevations for both Skunk Creek and Sonoran Wash. A description of the analysis and results are presented in Attachment 7 Two Dimensional Hydraulic Model of the Confluence of Skunk Creek and Sonoran Wash at the CAP Canal.

4-4.5.6 Ineffective Flow Areas

The ineffective flow area option of the HEC-RAS computer program is used to model ineffective flow areas. Ineffective flow areas occur at locations of tributary inflow (back water with in tributary) to Skunk Creek and Sonoran Wash, in areas in which the expansion of the floodplain is greater that 4:1, within topographic depressions in which runoff is ponded and there is no apparent conveyance from one cross-section to another. Ineffective flow stations were also used at locations where the approach to

define conveyance area in the HEC-2 model utilized encroachment stations. This primarily occurs upstream of the CAP and upstream of the New River Road Bridge.

4-4.5.7 Alternative Analyses

Hydraulic models were developed for each proposed Master Plan alternative to determine the hydraulic impact of the alternative on the watercourse. Alternatives developed for the Watercourse Master Plan consisted of a Full Structural Alternative (Alternative 1), a Stakeholder Alternative (Alternative 2), a Low Impact Structural Alternative (Alternative 3), a Non-Structural Alternative (Alternative 4) and a Environmental Alternative (Alternative 5). Elements of the proposed alternatives consists of no encroachment of the floodway fringe, full encroachment of the floodway fringe, a combination of no encroachment and partial encroachment of the floodway fringe, and partial encroachment with channelization within the floodway.

The Method 1 encroachment option of the HEC-RAS model was utilized to model each of the alternatives. Encroachment stations were set at the boundary defining the alternative regardless of the boundaries location with the floodplain limits (i.e., if boundary is outside of floodplain limits, the alternative boundary station is set out side of the floodplain limits).

The Stakeholder Alternative for Sonoran Wash is the only alternative proposing channelization in the floodway. The proposed channelization occurs in a reach referred to as the Main Stem with property owned by Plateau Ventures. Plateau Venture's engineer provided an HEC-RAS model for the subject reach (RM 1.15 to RM 1.699) that modeled proposed channelization. The HEC-RAS model was incorporated into the overall HEC-RAS model developed for the Stakeholder Alternative. Plateau Ventures' model was edited so that bank stations are set at top of banks also encroachment station elevations were adjusted to contain flow to the channel area.

4-4.6 FLOODWAY MODELING

4-4.6.1 Skunk Creek

The floodway delineation for the reach of Skunk Creek between RM 13.00 and RM 17.95. is taken from work maps and hydraulic models included as part of the CLOMR submittal entitled "Response to FEMA Letter Dated 6/2/99 Case No. 99-

09-592R Communities of City of Phoenix and Maricopa County, Arizona Skunk Creek Floodplain and Floodway Revisions" dated August 19, 1999.

Floodway delineation's prepared by Montgomery Watson and Castro Fleet are used as baseline floodplain and floodway delineation's for the reach of Skunk Creek between RM 17.95 and RM 26.17.

New regulatory floodway modeling was not conducted for Skunk Creek.

4-4.6.2 Sonoran Wash

The delineation of the floodway for Sonoran Wash was determined by utilizing the Method 4 and Method 1 encroachment analyses options of the HEC-RAS computer program. The Method 4 encroachment analysis was utilized first and then the floodway alignment was refined by utilizing the Method 1 option. Target water surface elevations were set and adjusted in the Method 4 analysis until the resultant rise in water surface elevation between encroached conditions and non-encroached conditions are near the 1 foot maximum allowed. The Method 1 analysis was utilized to refine the results of the Method 4 option. Encroachment stations determined in the Method 4 analysis are adjusted to provide a smooth floodway alignment.

4-4.7 PROBLEMS ENCOUNTERED DURING THE STUDY

4-4.7.1 Special Problems and Solutions

This study's hydraulic approach at the New River Road Bridge crossing of Skunk Creek differed from the approach that was used in the Montgomery Watson FIS analysis. The approach for the HEC-2 model developed by Montgomery Watson was to align cross-sections that model the bridge parallel to the bridge face both upstream and downstream and then skew the cross-section and bridge geometric data to define conveyance area. However, downstream of the bridge the natural topography prevents the cells of the bridge to effectively convey flow. The approach taken in the development of the HEC-RAS model developed for the Watercourse Master Plan to account for downstream blockage was to align cross-sections perpendicular to flow and then define the effective flow area of the bridge. The following revisions where incorporated into the HEC-RAS model:

1) HEC-2 cross-sections 25.70 and 25.72 were eliminated.

2) Cross-sections aligned perpendicular to flow were added at RM 25.78 and RM 25.79. Cross-sections are located upstream and downstream of the bridge abutments.

3) Two additional cross-section at RM 25.73 and 25.74 are added to define the effective bridge hydraulics.

4) Due to the accumulation of sediment within and upstream of the bridge only the three central cells of the bridge opening are considered effective.

4-4.7.2 Modeling Warning and Error Messages

The model executes successfully without error messages for both Skunk Creek and Sonoran Wash. The model does report several warning messages. The following are frequent warning messages reported:

- The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This is a common message received when modeling a river system that is characterized by changes in the conveyance capacity of the channel relative to the overbank area and varies from cross-section to cross-section

- The energy loss was greater than 1.0-ft (0.3 m) between the current and previous cross-section. The message pertaining to energy loss of greater than 1 foot is to be expected, given that cross-section spacing is 300 to 500 feet and the friction slopes are greater than 0.004 ft/ft.
- The velocity head has changed by more than 0.5-ft (0.15 m). Channel velocities generally range between 8 and 14 fps within the channel for both Skunk Creek and Sonoran Wash. A velocity difference between cross-sections of 2 fps would result in a velocity head difference of more than 0.5 feet. A change of 2 fps between cross-sections is not unreasonable.
- Warning messages from the HEC-RAS model at many locations reported that the assumed water surface elevation was set to critical depth, however the calculated water surface elevation was calculated below critical depth. This indicates a potential for supercritical flow. In the event that detail design is being pursued the designer should evaluated and design for supercritical flow conditions.

4-4.8 CALIBRATION

There are no stream gauge data for 100-year peak flows to calibrate hydraulic models.

4-4.9 HYDRAULIC ANALYSIS RESULTS

This section of the report presents the results of the hydraulic models developed for the study. Hydraulic models developed for each proposed alternative is compared with the base model to determine the impact of the alternative on the hydraulic properties of the watercourse. The base model for Skunk Creek is the Watercourse Master Plan HEC-RAS model that was developed from the existing Flood Insurance and CLOMR HEC-2 models. The base model for Sonoran Wash is the Watercourse Master Plan HEC-RAS model developed from new topography. Results presented in this section are for the 100-year regulatory condition peak discharges and for the 100-year controlling peak discharges. The controlling peak discharge is defined as the greater between regulatory and future condition peak discharges. The HEC-2 model output files developed from existing HEC-2 models for Skunk Creek are located in Appendix B. HEC-RAS computer output files for the 100-year models developed for this study are located in Appendix B for Skunk Creek and Appendix C for Sonoran

Wash. A computer CD with input files for the 2-year, 10-year, and 100-year models along with a summary of computer file nomenclature are provided in Appendix D.

4-4.9.1 Conversion of HEC-2 Model to a HEC-RAS Model (Skunk Creek)

The base HEC-2 model developed for the Skunk Creek CLOMR is converted to a HEC-RAS model and is used as the base model for the Skunk Creek Watercourse Master Plan. Bank station locations and Manning's roughness coefficients for the HEC-RAS base model are revised to be consistent with current methods for locating bank station and estimating Manning's roughness coefficients. In Table 4-4.5 and Table 4-4.6 a summary of selected hydraulic model results for the HEC-2 model and the base HEC-RAS model respectively are presented.

In Table 4-4.7 a summary comparison of selected hydraulic parameter results between the HEC-2 and HEC-RAS model are presented. Positive values listed in Table 4-4.7 indicate that the HEC-RAS model reported higher values than the HEC-2 model whereas negative values indicate that the HEC-2 model reported higher values.

A review of the results indicates that differences in channel velocities range between 0.1 and 5.9 feet per second (fps) and channel conveyance is typically greater in the HEC-2 model, these differences are attributed to the difference of bank station locations and Manning's roughness coefficients used in the HEC-RAS model as compared to the HEC-2 model.

The difference in depth of flow between the two models ranged between 0.02 feet and 5.97 feet with difference between the models for the majority of flow depth values being less than 0.40 feet. Locations in which the difference of depth of flow are greater than one foot occur at cross-sections 14.54, 16.86, 16.96, 18.74, 18.84, 19.07, 19.26, 20.64, and 24.38. At cross-section locations 14.54, 18.74, 18.84, 19.07, 19.26, 20.64, 21.69 and 24.38 the difference in flow depth between the two models is attributed to Mannings roughness coefficients and the locations of bank stations. Mannings roughness coefficients utilized in the HEC-RAS model at these locations are generally1.5 to 2 times higher than values used in the HEC-2 model. Left and right banks stations are generally further apart in the HEC-2 model. At cross-section 21.69, the difference in depth of flow is attributed to revision of the cross-section for this study. A portion of this cross-section was revised yielding a minimum channel elevation approximately 3 feet lower than what was recorded in the HEC-2 model.

The difference in water surface elevations between the models at Cross-section 21.69 is 0.08 feet. Cross-sections 16.86 and 16.96 are located upstream of the Carefree Highway bridge, flow depths recorded at these locations from the HEC-RAS model are 5.97 and 1.08 feet, respectively, higher than values recorded from the HEC-2 model.

In an effort to understand the reason for the significant differences in water surface elevations between the HEC-2 and HEC-RAS computer models upstream of the bridge, multi-profile HEC-2 and HEC-RAS models were developed. The results of the multi-profile models indicate that up to a flow discharge of 19,888 cfs the two models produce comparable water surface elevations and the flow type for the subject reach is subcritical. Above 19,888 cfs, the HEC-2 model results remains in subcritical open channel flow, whereas, the HEC- RAS model changes to pressure flow. Under a pressure flow condition, the HEC-RAS computer program utilizes two routines to evaluate hydraulic conditions at a bridge. Under the condition that the bridge is fully submerged (upstream and downstream), the standard full flowing orifice equation is used. Under the condition when only the upstream side of the bridge is in contact with the water, the sluice gate equation is used. The sluice gate equation is a routine that has been added to the HEC-RAS program when the Army Corp's of Engineers (COE) developed the HEC-RAS program. This routine is not in the HEC-2 program. The sluice type equation as applied to bridges has been in existence since approximately 1978, however, it has not been incorporated into a COE hydraulic program until the HEC-RAS program was developed.

Given that the COE has included the sluice gate equation in HEC-RAS computer program, we can only conclude that the computational accuracy of the program has improved and that the result is an improvement over the result that the HEC-2 program provides.

The result of the HEC-RAS model indicates that water surface elevations are significantly higher upstream of the Carefree Highway Bridge than what is estimated by the HEC-2 model. A breakout of flow during the 100-year event is probable along the east and west banks of Skunk Creek upstream of the bridge. Flow break out will occur along the west bank between the Carefree Highway and the south extension of the Tramonto bank stabilization (approximately 340 feet upstream of the Carefree Highway). The peak flow rate of the breakout is estimated to be as high as 2900 cfs,

assuming the breakout can be modeled as a broad-crested weir with no downstream backwater effects.

Flow from the breakout will drain west along the Carefree Highway, possibly sheet-flowing over the highway, and eventually overtop the Carefree Highway and the future Via Del Puzzola roadway. The breakout flow will overtop the Carefree Highway at approximately the same location as the FEMA 100-year floodplain breakout that the Tramonto Bank Stabilization project is designed to eliminate. The FEMA breakout flow rate was estimated to be about 3,600 cfs during a 100-year flood.

A recommendation was presented to the developer that the Tramonto bank stabilization be extended south to the Carefree Highway Bridge and tied into the abutment at the northwest corner of the bridge.

Flow in the over bank along the east bank of Skunk Creek upstream of the Carefree Highway Bridge to a point approximately 600 feet upstream of cross-section 16.96 is considered ineffective flow. Flow will typically pond behind a training levee constructed for the bridge until flow overtops the roadway draining to a small drainage ditch which drains back to Skunk Creek.

Of the hydraulic parameters compared between the two models, top width varied the most. Top width determined in the HEC-2 and HEC-RAS models is the sum of the length across the top of the water surface for each wetted perimeter of the cross-section being analyzed. The top width determined is not always consistent with floodplain width. Should there be islands or high ground that is not inundated along a cross-section, the top width recorded by each model will be less than the total floodplain width. The results of comparison of top width dimensions yielded values ranging from –76.62 to +1715.34. Negative values represent areas in which the wetted perimeter width of the floodplain determine with the HEC-RAS model is less than what was determined with the HEC-2 model. Positive values listed in the top width difference column indicated areas in which the floodplain widths are greater in HEC-RAS model. The differences in top width between the two models can be contributed to the following:

1) Where there is a difference in flow depth it would be expected to have a difference in top width. In areas in which there is a increase in flow depth

and island areas along the cross-section are inundated relative to the HEC-2 model, the difference in top width can be significant.

2) Ineffective flow stations were utilized in the HEC-RAS model along cross-sections at locations where tributary/parallel channels to Skunk Creek have the possibility to be inundated by backwater or flow breakout. The ineffective flow stations are used to define the conveyance area along a cross-section where encroachment stations are used in the HEC-2 model to define conveyance. The top width of ineffective flow area is considered in the top width recorded in the HEC-RAS model, whereas, top width estimated in the HEC-2 model only considers the area between encroachment stations. There is not a good comparison at locations where this occurs.

3) The greatest difference in top widths determined in the comparison of the model results occur upstream of the CAP (RM 13.00) to River Mile 13.28, upstream of the Carefree Highway Bridge (RM 16.87) and upstream of the New River Road Bridge RM (25.74) to RM 25.95. The difference in top width upstream of the Carefree Highway Bridge is attributed to an increase in flow depth determined in the HEC-RAS model relative to the HEC-2 model.

The difference in top widths upstream of the CAP and upstream of the New River Road Bridge is attributed to modeling techniques. At these locations encroachment stations were utilized in the HEC-2 model to define the main flow conveyance area. It was determined that flow break out occurs at both locations. At the locations of flow breakout, secondary HEC-2 models were developed for the FIS study to define the overall floodplain dimensions. The Skunk Creek FIS floodplain at these locations is then defined by the combination of floodplain dimensions determined by the primary model and secondary models. The HEC-RAS model utilized ineffective flow stations at the locations that the HEC-2 model utilized encroachment stations. The top widths recorded in the HEC-RAS model include the width of the ineffective flow areas, therefore, there would not be a comparison with the HEC-2 model for reasons related above in Item 2.

4-4.9.2 Comparison of Hydraulic Model Results for Master Plan Alternatives Phase 1

4-4.9.2.1 Skunk Creek

Hydraulic evaluations of Master Plan Alternatives for the Skunk Creek Watercourse Master Plan were conducted in two phases. Phase 1 Reach of Skunk Creek commences at the CAP (RM 13.00) and extends upstream to just below the Carefree Highway Bridge at RM 16.86. Phase 1 analyses also include Sonoran Wash. Master Plan Alternatives consisted of a Full Structural Alternative, a Stakeholder Alternative, a Low Impact Structural Alternative, a Non-Structural Alternative and an Environmental Alternative. The Non-Structural and Environmental Alternatives are alternatives in which no encroachments into the 100-year floodplain are allowed. The base HEC-RAS model characterizes the elements of the Non-Structural and Environmental alternatives. The floodway profile run for the base HEC-RAS model characterizes the Full Structural Alternative (total floodway fringe encroachment). Encroachments stations for the floodway profile, developed for the base model are revised to model elements (partial encroachment of floodway fringe area) of the Stakeholder and Low Impact Structural alternatives. Table 4-4.6 lists a summary of results for selected hydraulic parameters for the Non-Structural and Environmental Alternatives. Table 4-4.8, Table 4-4.9 and Table 4-4.10 lists a summary of results for selected hydraulic parameters for the Full Structure Alternative, Stakeholder Alternative and the Low Impact Alternative, respectively.

Results of the hydraulic models for the Full Structure Alternative, Stakeholder Alternative and the Low Impact Structural Alternative are compared to results of the hydraulic model for the Non-Structural Alternative to determine the impact of the alternative on the hydraulic properties of the watercourse. Tables 4-4.11, 4-4.12 and 4-4.13 list the results of the comparison of the Non-Structural model with the Full Structure Alternative, Stakeholder Alternative and Low Impact Structural Alternative Respectively. Results of the comparison between no encroachment to full encroachment or partial encroachment indicate that generally there is a reduction in floodplain width at locations of encroachment into the floodway fringe along with an increase in flow velocity and depth. The greater the encroachment the greater the change in channel velocity and depth.

Table 4-4.5
Summary of Hydraulic Parameters - Skunk Creek Wash
Base HEC-2 Model
Regulatory 100-year Discharge

Reach	x-sec	Discharge Channel	Discharge Left Over Bank	Discharge Right Over Bank	Velocity Channel	Velocity Left Over Bank	Velocity Right Over Bank	Channel Depth of Flow	Top Width
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Braided	13.28	10344.04	2914.98	5640.98	7.79	9.09	6.54	10.01	1239.74
Braided	13.4	12384.77	4785.18	9530.05	4.88	4.03	4.89	11.23	2115.98
Braided	13.55	13914.38	12784.78	0.84	5.99	7.42	0.85	11.01	1733.57
Braided	13.66	11118.81	15581.19	0	4.41	6.74	0	7.71	1955.75
Braided	13.86	14822.59	10409.51	1467.9	5.97	6.84	5.04	9.62	1768.99
Braided	14.07	5315.013	18439.45	2945.53	6.74	6.47	4.24	7.15	1943.43
Greasewood	14.3	9812.2	5904.67	10983.13	10.82	4.48	5.89	14.56	2213.3
Greasewood	14.54	26474.51	219.17	6.32	7.96	2.12	1.43	12.09	839.24
Cut Bank	14.74	12869.17	12667.58	1163.26	14.18	6.38	4.49	10.18	1019.7
Cut Bank	14.89	16506.98	10187.93	5.09	13.95	5.67	1.15	13.7	564.34
Cut Bank	15.06	23601.44	1343	1755.56	9.17	3.05	5.77	11.69	768.9
Cut Bank	15.12	22412.46	1064.86	3222.68	11.17	3.16	6.9	9.82	821.24
Cut Bank	15.22	23514.19	27.33	3158.48	11.2	1.58	6.51	11.3	606.38
Cut Bank	15.41	26566.38	20.71	112.91	10.86	2.28	3.64	9.94	403.31
Cut Bank	15.55	20569.03	1729.3	4401.67	13.22	5.17	6.93	9.67	533.41
Cut Bank	15.75	14259.31	11781.84	658.84	11.83	5.13	3.85	14.1	801.63
Cut Bank	15.89	18068.78	8589.19	42.02	13.11	6.04	3.62	8.57	721.42
Cut Bank	16.07	18512.54	8157.9	29.56	12.93	6.04	1.85	9.94	531.86
Cut Bank	16.19	14855.65	11844.35	0	12.72	5.31	0	11.39	766.41
Cut Bank	16.27	21064.59	5635.41	0	12.64	5.6	0	12.91	646.59
Knoll	16.49	11633.23	269.46	14797.32	9.03	3.09	8.16	8.67	667.55
Knoll	16.68	26691.18	0	8.82	8.47	0	2.02	7.32	656.66
Carefree	16.86	27300	0	0	14.55	0	0	8.29	317.44

Table 4-4.5 Cont.
Summary of Hydraulic Parameters - Skunk Creek Wash
Base HEC-2 Model
Regulatory 100-year Discharge

Reach	x-sec	Discharge Channel	Discharge Left Over Bank	Discharge Right Over Bank	Velocity Channel	Velocity Left Over Bank	Velocity Right Over Bank	Channel Depth of Flow	Top Width
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Carefree	16.87	27300	0	0	12.99	0	0	9.36	320.53
Carefree	16.96	27166.47	133.53	0	12.98	3.55	0	8.66	424.44
Carefree	17.06	15209.86	10492.13	1598.01	13.11	5.39	3.15	11.67	980
Carefree	17.18	22367.84	2961.88	1970.27	11.77	5.77	4.51	9.04	828.73
Carefree	17.3	12355.94	8326.29	6617.77	9.56	6.13	5.41	9.16	1022
Carefree	17.39	19662.7	1448.28	6189.02	11.43	5.35	6.73	8.95	776.84
Carefree	17.48	15622.41	6058.16	5619.43	12.6	5.15	5.44	7.54	905
Carefree	17.57	14448.64	8804.28	4047.08	14.41	6.06	5.43	11.63	824.78
Carefree	17.65	13945.86	10366.62	2987.52	13.33	5.07	4.01	13.31	895.22
Carefree	17.78	6049.096	4991.42	16259.48	10.03	4.84	6.31	9.12	985.23
Carefree	17.84	19057.01	1253.57	6989.42	11.78	4.72	5.36	6.54	956.71
Carefree	17.95	14972.72	573.44	11753.84	12.12	4.65	5.49	8.26	1222.04
Carefree	18.09	13789.85	1866.98	12043.16	7.1	4.84	4.27	11.46	1513.72
Skunk Tank	18.16	13934	1682.45	12083.54	13.59	5.98	7	7.75	949.15
Skunk Tank	18.23	16427.15	6722.23	4550.63	12.32	5.68	3.03	11.75	1309.37
Skunk Tank	18.29	14165.21	9127.66	4407.13	14.16	5.92	4.91	10.46	1039.14
Skunk Tank	18.49	15733.23	1841.22	10125.55	11.68	5.85	6.08	9.18	848.14
Skunk Tank	18.57	9457.894	13908.12	4333.98	14.06	9.38	4.77	10.58	920.13
Skunk Tank	18.74	6760.928	20362.1	176.98	11.21	9.74	3.66	10.17	875.64
Skunk Tank	18.84	9395.679	16833.08	1071.25	14.02	9.31	5.21	8.99	684.7
Skunk Tank	18.96	10637.99	8975.27	7686.75	13.45	5.71	5.27	9.14	1432.78
Skunk Tank	19.07	8965.443	14771.6	3562.96	9.85	9.44	5.19	10.33	1357.34
Skunk Tank	19.18	11151.08	16148.92	0	10.4	10.35	0	10.34	834.35
Skunk Tank	19.26	4805.899	21974.03	520.07	9.82	11.17	6.55	11.76	717.97

Table 4-4.5 Cont.
Summary of Hydraulic Parameters - Skunk Creek Wash
Base HEC-2 Model
Regulatory 100-year Discharge

Reach	x-sec	Discharge Channel (cfs)	Discharge Left Over Bank (cfs)	Discharge Right Over Bank (cfs)	Velocity Channel (fps)	Velocity Left Over Bank (fps)	Velocity Right Over Bank (fps)	Channel Depth of Flow (ft)	Top Width (ft)
1	2	3	4	5	6	7	8	9	10
Skunk Tank	19.41	8120.101	3064.88	16115.02	10.94	4.52	6.35	8.2	1012.08
Skunk Tank	19.52	8011.611	1870.7	17417.69	16.9	8.46	8.34	8.65	680.58
Skunk Tank	19.62	9204.452	0	18095.55	12.16	0	6.67	10.53	746.74
Skunk Tank	19.72	10629.98	4636.5	12033.52	15.24	7.33	6.28	9.92	760.62
Skunk Tank	19.83	14607.88	5220.71	7471.41	14.97	5.87	5.49	11.53	714.61
Cobbled Bank	19.92	14067.63	5610.67	7621.71	13.43	4.18	6.11	12.8	1173.26
Cobbled Bank	20.05	4837.536	10783.92	11678.55	8.77	4.79	5.2	10	1085.65
Cobbled Bank	20.16	4303.928	7504	15492.07	10.65	6.22	9.54	9.25	1116.07
Cobbled Bank	20.26	5313.713	12165.82	9820.46	10.16	5.44	6.55	9.41	1253.31
Cobbled Bank	20.38	4167.493	15282.82	7849.68	11.05	5.95	6.59	9.79	1211.13
Cobbled Bank	20.48	9448.591	9893.79	7957.62	14.3	4.6	5.42	9.08	1298.9
Rodger Creek	20.62	11259.89	9433.36	6606.75	14.65	4.47	5	9.49	1241.81
Rodger Creek	20.64	19287.42	5086.61	2925.97	4.83	4.23	4.45	8.9	1349.99
Rodger Creek	20.71	13632.78	9832.78	3834.44	11.81	5.48	5.13	9.87	1391.07
Rodger Creek	20.79	12912.21	10677.01	3710.77	9.01	4.38	3.74	9.67	1260
Rodger Creek	20.9	17256.68	6308.44	3734.88	11.55	4.9	4.29	9.83	1313.97
Rodger Creek	20.98	19860.04	6665.91	774.06	10.43	4.68	2.63	12.98	1250.99
Rodger Creek	21.05	16575.99	10035.59	688.42	12.62	4.24	2.27	12.17	1247.21
Rodger Creek	21.11	18620.33	8555.55	124.12	10.95	4.44	2.06	11.5	1025.38
Rodger Creek	21.18	15557.73	11310.14	432.13	12.61	4.33	2.93	11.07	1152.57
Rodger Creek	21.25	17681.37	8227.38	1391.26	12.5	3.94	2.19	12.16	1420.77
Rodger Creek	21.31	20390.59	6564.68	344.74	10.26	3.39	2.61	11.94	965.41
Rodger Creek	21.35	16088.62	10970.75	240.63	13.62	5.18	3.18	11.86	829.04
Rodger Creek	21.41	11066.36	15462.63	771.01	13.62	6.52	4.74	12.55	799.93

Table 4-4.5 Cont.
Summary of Hydraulic Parameters - Skunk Creek Wash
Base HEC-2 Model
Regulatory 100-year Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Rodger Creek	21.49	12626.54	8514.46	6158.99	12.14	7.15	6.98	8.86	700.14
Rodger Creek	21.58	16518.93	9056.02	1725.05	9	5.88	3.28	8.7	1294.67
Rodger Creek	21.63	15437.09	11581.14	281.78	11.07	6.52	2.56	9.88	1159.04
Rodger Creek	21.69	13468.81	10911.11	2920.07	9.33	4.65	4.66	8.22	1412.19
Rodger Creek	21.77	15235.55	11263.45	801	12.07	7.31	3.59	10.63	964.76
Rodger Creek	21.82	9475.655	16631.16	1193.18	13.63	7.09	4.56	8.88	1139.89
Rodger Creek	21.91	6711.078	19200.42	1388.5	9.18	6.33	3.46	12.04	1154.39
Rodger Creek	21.99	8210.152	17924.01	1165.84	12.84	6.56	4.31	7.86	1403.61
Rodger Creek	22.08	5817.492	19815.2	1667.31	9.28	5.34	3.39	9.61	1609.96
Rodger Creek	22.15	3980.926	23293.85	25.23	10.76	7.06	2.09	10.39	1241.16
Rodger Creek	22.22	5339.765	21933.43	26.81	11.82	8.59	1.65	10.96	831.9
Rodger Creek	22.29	3998.283	22574.61	727.1	10.75	7.37	2.13	10	1282.22
Rodger Creek	22.36	5389.907	20081.32	1828.78	11.16	8.55	4.12	11.94	1104
Rodger Creek	22.43	5303.636	18508.27	3488.1	7.84	6.38	6.5	8.39	1204.82
Rodger Creek	22.48	8912.108	15260.14	3127.75	12.45	7.42	6.3	9.1	1082.95
Rodger Creek	22.56	10054.67	15367.35	1877.98	12.42	6.75	4	9.68	1064.96
Rodger Creek	22.67	12324.73	13978.46	996.82	15.09	6.38	5.03	9.87	786.32
Rodger Creek	22.73	15553.75	11522.51	223.74	13.87	5.53	2.69	10.89	869.26
Cline Creek	22.79	14803.66	11474.08	1022.26	13.74	4.97	4.56	10.94	965.08
Cline Creek	22.86	14961.91	9394.06	44.03	10.13	4.77	2.55	11.02	979.15
Cline Creek	22.95	20378.36	4016.14	5.5	7.55	4.74	1.27	10.66	1017.56
Cline Creek	22.96	11148.22	13251.78	0	15.19	4.44	0	14.86	926.98
Cline Creek	23.13	14264.23	5209.49	4926.28	14.58	4.41	5.3	11.53	801.73
Cline Creek	23.25	13670.88	1845.04	8884.08	13.83	3.94	5.6	9.87	743.33

Table 4-4.5 Cont.
Summary of Hydraulic Parameters - Skunk Creek Wash
Base HEC-2 Model
Regulatory 100-year Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Cline Creek	23.33	8186.619	829.9	15383.48	18.13	3.19	8.14	11.85	599.89
Cline Creek	23.45	6366.798	4837.12	13196.08	14.79	7.08	8.56	10.1	609.04
Cline Creek	23.55	13405.89	7122.33	3871.78	14.15	6.5	6.42	7.22	706.32
Cline Creek	23.64	6119.134	4566.28	1114.58	11.37	3.79	3.89	8.98	681.35
Shangri-La	23.87	8608.439	2663.15	528.41	12.2	3.38	2.41	10.07	555.39
Shangri-La	23.94	10051.2	1453.64	295.16	12.24	4.45	3.25	10.46	415.48
Shangri-La	24.03	4776.69	1742.58	5280.73	10.48	4.07	4.79	7.63	652.99
Shangri-La	24.12	11308.74	326.36	164.9	11.82	2.15	1.83	8.3	436.92
Shangri-La	24.25	6280.346	0	3419.65	14.03	0	5.47	9.67	267.97
Shangri-La	24.38	9193.501	182.51	323.99	7.87	2.51	2.43	7.05	370.39
Shangri-La	24.48	6540.724	3091.09	68.19	11.92	3.87	1.75	6.94	473.74
Shangri-La	24.61	6673.715	2406.21	620.07	11.6	2.87	3.26	9.84	665.08
Shangri-La	24.74	8592.856	243.38	863.77	10.79	1.14	2.8	10.05	678.84
Shangri-La	24.87	6547.064	221.51	1031.43	11.1	1.56	3.82	7.34	435.82
Shangri-La	24.95	5213.246	0.05	2586.7	7.85	0.41	3.95	7.56	360.74
New River Road	25.12	7664.109	0	135.89	12.91	0	2.28	8.07	153.27
New River Road	25.28	5478.199	2154.24	167.56	12.05	2.74	3.4	9.86	433.2
New River Road	25.38	3763.729	2509.69	1526.58	5.69	2.66	3.72	6.78	1008
New River Road	25.45	1785.011	0	6014.99	9.81	0	7.56	7.35	582.34
New River Road	25.56	1408.834	536.09	5855.07	6.43	2.21	5.43	10.34	866.12
New River Road	25.63	2005.984	8.02	5786	8.78	1.36	6.35	9.36	458.07
New River Road	25.7	7799.999	0	0	10.51	0	0	3.51	218
New River Road	25.72	7800	0	0	8.1	0	0	4.91	237
New River Road	25.83	5911.113	0	1888.89	10.93	0	3.81	8.86	393.33
New River Road	25.95	4908.171	221.04	2670.79	11.05	2.59	3.31	10.21	652.16
New River Road	26.17	5530.364	0	2269.63	11.24	0	3.08	10.78	499.86

Table 4-4.6
Summary of Hydraulic Parameters- Skunk Creek Wash
Base HEC-RAS Model (Non-Structural Alternative)
Existing Condition 100-year Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Braided	13.28	9506.21	7965.7	9228.09	12.75	6.03	4.79	11.13	2106.5
Braided	13.4	2937.15	9196.05	14566.8	7.63	4.2	4.8	11.2	2108.66
Braided	13.55	3662.2	15843.49	7194.32	11.73	7.17	7.48	10.68	1578.29
Braided	13.66	3691.27	19312.29	3696.44	7.04	5.3	4.75	7.77	1965.67
Braided	13.86	7008.98	18287.39	1403.63	9.78	5.82	5.21	9.52	1741.1
Braided	14.07	7442.24	16089.85	3167.91	8.85	4.98	3.79	7.45	2080.65
Greasewood	14.3	10607.4	6288.84	9803.76	10.99	3.08	4.19	15.12	2262.77
Greasewood	14.54	15064.88	8.81	11626.31	13.89	2.15	7.05	10.97	539.01
Cut Bank	14.74	10624.23	15599.53	476.24	12.02	8.3	2.71	9.95	781.4
Cut Bank	14.89	15714.72	10985.28	0	14.13	7.08	0	13.12	532.62
Cut Bank	15.06	10670.97	1718.42	14310.61	11.14	3.78	7.34	11.74	770.79
Cut Bank	15.12	10202.39	1637.86	14859.74	12.73	4.78	8.83	9.84	822.4
Cut Bank	15.22	13085.22	43.52	13571.26	14.11	2.67	8.28	11.27	604.72
Cut Bank	15.41	9048.64	0	17651.36	11.81	0	8.42	10.84	514.17
Cut Bank	15.55	18703.75	3256.57	4739.68	12.76	8.17	7.67	9.59	532.16
Cut Bank	15.75	12886.65	13364.26	449.1	11.2	6.5	3.56	13.67	769.68
Cut Bank	15.89	12117.1	10736.43	3846.47	13.7	7.26	7.16	8.69	724.51
Cut Bank	16.07	16837.64	9847.33	15.03	13.31	7.11	1.84	9.67	520.45
Cut Bank	16.19	13470.55	13229.45	0	12.48	5.92	0	11.29	763.77
Cut Bank	16.27	13763.12	12936.88		14.22	6.33	0	13.44	651.5
Knoll	16.49	11048.62	206.04	15445.34	11.47	2.75	7.66	8.47	654.63
Knoll	16.68	2092.7	768.89	23838.41	9.41	3.84	7.27	8.16	660.56
Carefree	16.86	27300	0	0	14.93	0	0	8.17	554.69
Carefree	16.87	27300	0	0	7.59	0	0	15.33	1921.01

Table 4-4.6 Cont.
Summary of Hydraulic Parameters- Skunk Creek Wash
Base HEC-RAS Model (Non-Structural Alternative)
Existing Condition 100-year Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Carefree	16.96	26565.58	22.89	711.53	10.77	2.48	1.89	9.74	1561.03
Carefree	17.06	14638.28	10728.29	1933.43	11.31	5.63	3.08	11.81	1052.38
Carefree	17.18	8653.72	1862.46	16783.81	13.26	4.11	9.54	9.08	857.16
Carefree	17.3	14371.53	6197.82	6730.65	12.82	5.67	4.33	9.06	1035.58
Carefree	17.39	20330.53	1202.8	5766.67	11.98	4.42	4.8	9.15	1085.47
Carefree	17.48	15296.96	5583.56	6419.49	12	5.61	6.18	7.29	962.95
Carefree	17.57	17467.89	5490.01	4342.09	12.55	4.78	5.16	11.78	889.93
Carefree	17.65	14525.18	9894.52	2880.31	13.19	5.66	3.65	13.15	903.74
Carefree	17.78	9816.27	4885.59	12598.14	12	5.58	6.64	8.48	948.92
Carefree	17.84	14820.57	1270.95	11208.48	11.58	5.23	7.03	6.46	965.82
Carefree	17.95	15434.28	615.87	11249.85	12.88	4.83	6.49	7.86	900.3
Carefree	18.09	8579.34	1490.64	17630.02	8.78	3.97	4.88	11.34	1505.49
Skunk Tank	18.16	7573.37	5010.85	15115.79	13.31	5.98	7.94	8.04	988.75
Skunk Tank	18.23	9848.84	12181.18	5669.98	13.6	6.62	3.56	11.85	1317.02
Skunk Tank	18.29	10589.78	10453.52	6656.7	9.56	5.77	4.72	11.26	1144.34
Skunk Tank	18.49	7086.73	10158.83	10454.44	14.95	9.66	7.38	8.72	826.2
Skunk Tank	18.57	9450.36	13734.98	4514.66	12.6	7.9	3.36	11.4	942.5
Skunk Tank	18.74	4457.79	20960.92	1881.29	9.11	7.62	4.36	11.19	1149.99
Skunk Tank	18.84	7881.43	17348.92	2069.65	9.83	7.58	6	10.08	1098.3
Skunk Tank	18.96	9756.38	10072.53	7471.08	12.2	6.25	4.87	9.23	1436.9
Skunk Tank	19.07	7836.09	13474.65	5989.26	9.01	5.21	3.71	11.57	1627.06
Skunk Tank	19.18	11454.4	15845.59	0	12.67	7.53	0	10.79	841.58
Skunk Tank	19.26	5563.09	19502.71	2234.2	12.17	6.68	7.07	13.35	1602.98
Skunk Tank	19.41	5380.2	5080.87	16838.93	7.68	4.84	5.75	8.9	1058.72
Skunk Tank	19.52	5914.82	2219.04	19166.13	12.41	8.56	8.09	9.11	713.8

Table 4-4.6 Cont.
Summary of Hydraulic Parameters- Skunk Creek Wash
Base HEC-RAS Model (Non-Structural Alternative)
Existing Condition 100-year Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Skunk Tank	19.62	5160.7	0	22139.3	10.2	0	7.36	10.58	778.61
Skunk Tank	19.72	7721.93	4945.76	14632.31	10.97	7.71	7.5	9.99	762.21
Skunk Tank	19.83	12131.95	5862.45	9305.6	12.71	6.94	7.2	11.34	704.04
Cobbled Bank	19.92	8744.47	8487.87	10067.65	11.3	4.71	6.04	13.28	1250.19
Cobbled Bank	20.05	4125.58	9351.32	13823.11	10.34	5.04	6.85	9.27	1030.84
Cobbled Bank	20.16	4175.73	6490.07	16634.2	12.06	5.43	9.96	9.23	1112.15
Cobbled Bank	20.26	5667.7	10980.25	10652.05	9.97	6.05	9.89	8.75	1176.69
Cobbled Bank	20.38	3379.11	15662.05	8258.84	8.56	5.74	6.51	10	1251.35
Cobbled Bank	20.48	8132.52	9472.94	9694.54	13.11	5.17	7.64	8.65	1280.28
Rodger Creek	20.62	8423.12	12313.78	6563.1	13.2	6.51	5.07	9.19	1226.45
Rodger Creek	20.64	8550.26	13265.56	5484.18	8.98	5.73	4.53	7.86	1296.34
Rodger Creek	20.71	11070.3	11404.01	4825.69	12.16	5.27	4.32	10.22	1434.28
Rodger Creek	20.79	12205.2	11929.81	3164.99	9.37	5.7	3.69	9.16	1505.07
Rodger Creek	20.9	14143.6	7916.19	5240.22	11.91	4.54	4.86	10.08	1522.79
Rodger Creek	20.98	16772.84	9553.38	973.78	11.78	4.58	2.72	13.16	1374.15
Rodger Creek	21.05	16093.57	10484.44	721.99	12.31	4.49	2.49	12.12	1303.6
Rodger Creek	21.11	17220.28	9321.02	758.7	12.46	4.46	3.93	11.48	1023.32
Rodger Creek	21.18	15093.34	11738.73	467.93	12.27	4.54	3.24	11.05	1446.85
Rodger Creek	21.25	15535.71	9656.69	2107.6	12.05	3.91	2.62	12.45	1474.07
Rodger Creek	21.31	12915.83	14032.87	351.3	12.51	5.14	3.03	11.75	947.83
Rodger Creek	21.35	9857.58	17130.75	311.67	16.25	5.96	3.44	12.1	847.97
Rodger Creek	21.41	5346.98	20950.19	1002.83	16.3	6.35	4.4	13.17	856.68
Rodger Creek	21.49	12037.86	7679.66	7582.48	10.5	5.63	7.38	9.45	731.25
Rodger Creek	21.58	6553.71	13882.88	6863.41	8.89	6.87	5.3	8.82	1308.85
Rodger Creek	21.63	7830.54	13641.12	5828.34	11.8	6.38	5.17	10.37	1405.56

Table 4-4.6 Cont.
Summary of Hydraulic Parameters- Skunk Creek Wash
Base HEC-RAS Model (Non-Structural Alternative)
Existing Condition 100-year Discharge

		Discharge			Velocity				
Reach	x-sec	Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	Channel Depth of Flow (ft)	Top Width (ft)
1	2	3	4	5	6	7	8	9	10
Rodger Creek	21.69	4000.42	19811.34	3488.24	8.25	5.43	4.37	12.14	1419.88
Rodger Creek	21.77	6705.27	19765.56	829.18	12.92	9.11	4.11	10.48	929.09
Rodger Creek	21.82	8345.78	17580.86	1373.36	11.4	6.72	4.49	9.18	1179.45
Rodger Creek	21.91	4696.34	21632.46	971.2	9.06	7.18	2.78	11.78	1122.59
Rodger Creek	21.99	6631.85	19633.54	1034.61	10.39	7.21	3.84	7.86	1401.68
Rodger Creek	22.08	4778.68	21207.19	1314.13	8.05	6.24	3.14	9.35	1542.91
Rodger Creek	22.15	3029.7	24248.69	21.61	8.61	7.89	2.46	10.19	1189.61
Rodger Creek	22.22	4406.57	22883.56	9.87	10.33	9.66	1.19	10.69	773.04
Rodger Creek	22.29	3076.45	23759.63	463.91	8.65	8.27	1.86	9.76	1218.79
Rodger Creek	22.36	4501.67	21591.17	1207.15	9.85	9.85	6.41	11.69	1042.24
Rodger Creek	22.43	3397.21	21175.98	2726.81	7.56	6.18	5.15	8	1320.49
Rodger Creek	22.48	7854.38	16646.28	2799.34	11.88	9.06	6.62	8.77	1351.09
Rodger Creek	22.56	8059.97	17246.12	1993.91	9.69	7.23	4.61	9.86	1101.1
Rodger Creek	22.67	11628.09	14592.29	1079.61	13.96	7.71	6.75	9.44	718.14
Rodger Creek	22.73	9058.35	17947.77	293.88	14.86	6.31	2.95	11.19	915.33
Cline Creek	22.79	13597.98	12978.02	724	12.24	5.2	2.85	11.2	1007.06
Cline Creek	22.86	8362.94	12236.68	3800.38	14.06	5.82	5.58	10.94	970.67
Cline Creek	22.96	10041.6	14358.4	0	13.9	5.08	0	14.67	914.06
Cline Creek	23.13	12262.13	8647.68	3490.19	13.86	7.17	3.86	11.41	790.24
Cline Creek	23.25	11251.65	3834.81	9313.54	13.64	5.38	5.55	10.1	745.9
Cline Creek	23.33	5945.47	851.45	17603.09	13.11	3.18	9.25	11.89	600.4
Cline Creek	23.45	3411.66	5339.97	15648.37	13	7.16	8.67	10.35	616.7
Cline Creek	23.55	10084.46	10670.43	3645.11	10.71	7.69	5.25	7.75	782.6
Cline Creek	23.64	4300.62	6649.58	849.8	10.86	4.44	2.74	9.23	756.64

Table 4-4.6 Cont.
Summary of Hydraulic Parameters- Skunk Creek Wash
Base HEC-RAS Model (Non-Structural Alternative)
Existing Condition 100-year Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Shangri-La	23.87	7905.48	3507.42	387.1	11.55	4.93	2.1	9.83	542.42
Shangri-La	23.94	8309.29	2856.19	634.52	8.66	4.48	3.19	11.45	623.7
Shangri-La	24.03	3672.7	1967.12	6160.19	8.38	5	5.99	7.43	646.61
Shangri-La	24.12	10580.6	705.24	514.16	10.52	3.42	4.12	8.61	448.22
Shangri-La	24.25	4529.95	109.41	5060.64	8.77	1.57	5.96	10.71	510.3
Shangri-La	24.38	6289.46	1616.66	1793.88	9.53	4.93	4.77	7.02	413.09
Shangri-La	24.48	5487.59	4176.92	35.49	10.93	6.5	1.89	6.46	455.25
Shangri-La	24.61	5823.21	3339.7	537.09	10.24	4.19	2.94	9.76	652.71
Shangri-La	24.74	7673.32	1008.75	1017.93	9.19	2.96	2.84	10.36	701.75
Shangri-La	24.87	5711.8	512.28	1575.91	9.56	2.39	5.68	7.41	530.93
Shangri-La	24.95	4598.52	79.36	3122.12	7.13	1.93	4.62	7.68	361.49
New River Road	25.12	7613.51	0	186.49	12.61	0	2.87	8.17	440.75
New River Road	25.28	4642.9	3157.1	0	8.05	3.46	0	10.32	579.13
New River Road	25.38	2394.34	2729.04	2676.63	5.56	3.04	4.43	6.7	1245.23
New River Road	25.45	1180.75	0	6619.25	7.21	0	7.38	7.49	995.15
New River Road	25.56	999.4	277.3	6523.3	6.1	1.87	7.4	9.92	1220.04
New River Road	25.63	1331.91	4.32	6463.77	7.15	1.45	7.38	9.19	648.4
New River Road	25.69	442.4	186.88	7170.72	3.45	2.08	4.23	7.1	1263.96
New River Road	25.73	7800	0	0	10.59	0	0	7.84	1534.27
New River Road	25.74	7800	0	0	4.38	0	0	12.88	2042.67
New River Road	25.78	7800	0	0	7.84	0	0	8.93	1865.83
New River Road	25.83	5408.67	0	2391.33	9.95	0	4.76	8.88	2108.67
New River Road	25.95	4156.1	301.86	3342.03	9.68	4.19	4.76	10	1968.9
New River Road	26.17	5209.27	0.01	2590.72	9.82	0.51	3.83	10.74	564.61

Table 4-4.7
Comparison of Hydraulic Parameters- Skunk Creek Wash
Base HEC-RAS Model (Non-Structural Alternative) to Base HEC-2 Model
Existing Condition 100-Year Model

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Braided	13.28	-837.83	5050.72	3587.11	4.96	-3.06	-1.75	1.12	866.76
Braided	13.40	-9447.62	4410.87	5036.75	2.75	0.17	-0.09	-0.03	-7.32
Braided	13.55	-10252.18	3058.71	7193.48	5.74	-0.25	6.63	-0.33	-155.28
Braided	13.66	-7427.54	3731.10	3696.44	2.63	-1.44	4.75	0.06	9.92
Braided	13.86	-7813.61	7877.88	-64.27	3.81	-1.02	0.17	-0.10	-27.89
Braided	14.07	2127.23	-2349.60	222.38	2.11	-1.49	-0.45	0.30	137.22
Greasewood	14.30	795.20	384.17	-1179.37	0.17	-1.40	-1.70	0.56	49.47
Greasewood	14.54	-11409.63	-210.36	11619.99	5.93	0.03	5.62	-1.12	-300.23
Cut Bank	14.74	-2244.94	2931.95	-687.02	-2.16	1.92	-1.78	-0.23	-238.30
Cut Bank	14.89	-792.26	797.35	-5.09	0.18	1.41	-1.15	-0.58	-31.72
Cut Bank	15.06	-12930.47	375.42	12555.05	1.97	0.73	1.57	0.05	1.89
Cut Bank	15.12	-12210.07	573.00	11637.06	1.56	1.62	1.93	0.02	1.16
Cut Bank	15.22	-10428.97	16.19	10412.78	2.91	1.09	1.77	-0.03	-1.66
Cut Bank	15.41	-17517.74	-20.71	17538.45	0.95	-2.28	4.78	0.90	110.86
Cut Bank	15.55	-1865.28	1527.27	338.01	-0.46	3.00	0.74	-0.08	-1.25
Cut Bank	15.75	-1372.66	1582.42	-209.74	-0.63	1.37	-0.29	-0.43	-31.95
Cut Bank	15.89	-5951.68	2147.24	3804.45	0.59	1.22	3.54	0.12	3.09
Cut Bank	16.07	-1674.90	1689.43	-14.53	0.38	1.07	-0.01	-0.27	-11.41
Cut Bank	16.19	-1385.10	1385.10	0.00	-0.24	0.61	0.00	-0.10	-2.64
Cut Bank	16.27	-7301.47	7301.47	0.00	1.58	0.73	0.00	0.53	4.91
Knoll	16.49	-584.61	-63.42	648.02	2.44	-0.34	-0.50	-0.20	-12.92

Negative Value = HEC-2 Model is greater.

Positive Value = Non-structural Alternative is greater.

Table 4-4.7 Cont.
Comparison of Hydraulic Parameters- Skunk Creek Wash
Base HEC-RAS Model (Non-Structural Alternative) to Base HEC-2 Model
Existing Condition 100-Year Model

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Knoll	16.68	-24598.48	768.89	23829.59	0.94	3.84	5.25	0.84	3.90
Carefree	16.86	0.00	0.00	0.00	0.38	0.00	0.00	-0.12	237.25
Carefree	16.87	0.00	0.00	0.00	-5.40	0.00	0.00	5.97	1600.48
Carefree	16.96	-600.89	-110.64	711.53	-2.21	-1.07	1.89	1.08	1136.59
Carefree	17.06	-571.58	236.16	335.42	-1.80	0.24	-0.07	0.14	72.38
Carefree	17.18	-13714.12	-1099.42	14813.54	1.49	-1.66	5.03	0.04	28.43
Carefree	17.30	2015.59	-2128.47	112.88	3.26	-0.46	-1.08	-0.10	13.58
Carefree	17.39	667.83	-245.48	-422.35	0.55	-0.93	-1.93	0.20	308.63
Carefree	17.48	-325.45	-474.60	800.06	-0.60	0.46	0.74	-0.25	57.95
Carefree	17.57	3019.25	-3314.27	295.01	-1.86	-1.28	-0.27	0.15	65.15
Carefree	17.65	579.32	-472.10	-107.21	-0.14	0.59	-0.36	-0.16	8.52
Carefree	17.78	3767.17	-105.83	-3661.34	1.97	0.74	0.33	-0.64	-36.31
Carefree	17.84	-4236.44	17.38	4219.06	-0.20	0.51	1.67	-0.08	9.11
Carefree	17.95	461.56	42.43	-503.99	0.76	0.18	1.00	-0.40	-321.74
Carefree	18.09	-5210.51	-376.34	5586.86	1.68	-0.87	0.61	-0.12	-8.23
Skunk Tank	18.16	-6360.63	3328.40	3032.25	-0.28	0.00	0.94	0.29	39.60
Skunk Tank	18.23	-6578.31	5458.95	1119.35	1.28	0.94	0.53	0.10	7.65
Skunk Tank	18.29	-3575.43	1325.86	2249.57	-4.60	-0.15	-0.19	0.80	105.20
Skunk Tank	18.49	-8646.50	8317.61	328.89	3.27	3.81	1.30	-0.46	-21.94
Skunk Tank	18.57	-7.53	-173.14	180.68	-1.46	-1.48	-1.41	0.82	22.37
Skunk Tank	18.74	-2303.14	598.82	1704.31	-2.10	-2.12	0.70	1.02	274.35
Skunk Tank	18.84	-1514.25	515.84	998.40	-4.19	-1.73	0.79	1.09	413.60

Negative Value = HEC-2 Model is greater.

Positive Value = Non-structural Alternative is greater.

Table 4-4.7 Cont.
Comparison of Hydraulic Parameters- Skunk Creek Wash
Base HEC-RAS Model (Non-Structural Alternative) to Base HEC-2 Model
Existing Condition 100-Year Model

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Skunk Tank	18.96	-881.61	1097.26	-215.67	-1.25	0.54	-0.40	0.09	4.12
Skunk Tank	19.07	-1129.35	-1296.95	2426.30	-0.84	-4.23	-1.48	1.24	269.72
Skunk Tank	19.18	303.32	-303.33	0.00	2.27	-2.82	0.00	0.45	7.23
Skunk Tank	19.26	757.19	-2471.32	1714.13	2.35	-4.49	0.52	1.59	885.01
Skunk Tank	19.41	-2739.90	2015.99	723.91	-3.26	0.32	-0.60	0.70	46.64
Skunk Tank	19.52	-2096.79	348.34	1748.44	-4.49	0.10	-0.25	0.46	33.22
Skunk Tank	19.62	-4043.75	0.00	4043.75	-1.96	0.00	0.69	0.05	31.87
Skunk Tank	19.72	-2908.05	309.26	2598.79	-4.27	0.38	1.22	0.07	1.59
Skunk Tank	19.83	-2475.93	641.74	1834.19	-2.26	1.07	1.71	-0.19	-10.57
Cobbled Bank	19.92	-5323.16	2877.20	2445.94	-2.13	0.53	-0.07	0.48	76.93
Cobbled Bank	20.05	-711.96	-1432.60	2144.56	1.57	0.25	1.65	-0.73	-54.81
Cobbled Bank	20.16	-128.20	-1013.93	1142.13	1.41	-0.79	0.42	-0.02	-3.92
Cobbled Bank	20.26	353.99	-1185.57	831.59	-0.19	0.61	3.34	-0.66	-76.62
Cobbled Bank	20.38	-788.38	379.23	409.16	-2.49	-0.21	-0.08	0.21	40.22
Cobbled Bank	20.48	-1316.07	-420.85	1736.92	-1.19	0.57	2.22	-0.43	-18.62
Rodger Creek	20.62	-2836.77	2880.42	-43.65	-1.45	2.04	0.07	-0.30	-15.36
Rodger Creek	20.64	-10737.16	8178.95	2558.21	4.15	1.50	0.08	-1.04	-53.65
Rodger Creek	20.71	-2562.48	1571.23	991.25	0.35	-0.21	-0.81	0.35	43.21
Rodger Creek	20.79	-707.01	1252.80	-545.78	0.36	1.32	-0.05	-0.51	245.07
Rodger Creek	20.90	-3113.08	1607.75	1505.34	0.36	-0.36	0.57	0.25	208.82
Rodger Creek	20.98	-3087.20	2887.47	199.72	1.35	-0.10	0.09	0.18	123.16
Rodger Creek	21.05	-482.42	448.85	33.57	-0.31	0.25	0.22	-0.05	56.39

Negative Value = HEC-2 Model is greater.

Positive Value = Non-structural Alternative is greater.

Table 4-4.7 Cont.
Comparison of Hydraulic Parameters- Skunk Creek Wash
Base HEC-RAS Model (Non-Structural Alternative) to Base HEC-2 Model
Existing Condition 100-Year Model

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Rodger Creek	21.11	-1400.05	765.47	634.58	1.51	0.02	1.87	-0.02	-2.06
Rodger Creek	21.18	-464.39	428.59	35.80	-0.34	0.21	0.31	-0.02	294.28
Rodger Creek	21.25	-2145.66	1429.31	716.34	-0.45	-0.03	0.43	0.29	53.30
Rodger Creek	21.31	-7474.76	7468.19	6.56	2.25	1.75	0.42	-0.19	-17.58
Rodger Creek	21.35	-6231.04	6160.00	71.04	2.63	0.78	0.26	0.24	18.93
Rodger Creek	21.41	-5719.38	5487.56	231.82	2.68	-0.17	-0.34	0.62	56.75
Rodger Creek	21.49	-588.68	-834.80	1423.49	-1.64	-1.52	0.40	0.59	31.11
Rodger Creek	21.58	-9965.22	4826.86	5138.36	-0.11	0.99	2.02	0.12	14.18
Rodger Creek	21.63	-7606.55	2059.98	5546.56	0.73	-0.14	2.61	0.49	246.52
Rodger Creek	21.69	-9468.39	8900.23	568.17	-1.08	0.78	-0.29	3.92	7.69
Rodger Creek	21.77	-8530.28	8502.11	28.18	0.85	1.80	0.52	-0.15	-35.67
Rodger Creek	21.82	-1129.88	949.70	180.18	-2.23	-0.37	-0.07	0.30	39.56
Rodger Creek	21.91	-2014.74	2432.04	-417.30	-0.12	0.85	-0.68	-0.26	-31.80
Rodger Creek	21.99	-1578.30	1709.53	-131.23	-2.45	0.65	-0.47	0.00	-1.93
Rodger Creek	22.08	-1038.81	1391.99	-353.18	-1.23	0.90	-0.25	-0.26	-67.05
Rodger Creek	22.15	-951.23	954.84	-3.62	-2.15	0.83	0.37	-0.20	-51.55
Rodger Creek	22.22	-933.20	950.13	-16.94	-1.49	1.07	-0.46	-0.27	-58.86
Rodger Creek	22.29	-888.24	1509.85	-621.63	-1.31	1.30	2.29	-0.25	-61.76
Rodger Creek	22.36	-1906.43	2667.71	-761.29	-0.28	-0.20	-1.35	-0.39	115.67
Rodger Creek	22.43	-1900.86	2663.78	-762.93	-0.16	-0.08	-1.20	-0.45	106.59
Rodger Creek	22.48	-1057.73	1386.14	-328.41	-0.57	1.64	0.32	-0.33	268.14
Rodger Creek	22.56	-1994.70	1878.77	115.93	-2.73	0.48	0.61	0.18	36.14

Negative Value = HEC-2 Model is greater.

Positive Value = Non-structural Alternative is greater.

Table 4-4.7 Cont.
Comparison of Hydraulic Parameters- Skunk Creek Wash
Base HEC-RAS Model (Non-Structural Alternative) to Base HEC-2 Model
Existing Condition 100-Year Model

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Rodger Creek	22.67	-696.64	613.83	82.79	-1.13	1.33	1.72	-0.43	-68.18
Rodger Creek	22.73	-6495.40	6425.26	70.14	0.99	0.78	0.26	0.30	46.07
Cline Creek	22.79	-1205.68	1503.94	-298.26	-1.50	0.23	-1.71	0.26	41.98
Cline Creek	22.86	-6598.97	2842.62	3756.35	3.93	1.05	3.03	-0.08	-8.48
Cline Creek	22.95	NA	NA	NA	NA	NA	NA	NA	NA
Cline Creek	22.96	-1106.62	1106.62	0.00	-1.29	0.64	0.00	-0.19	-12.92
Cline Creek	23.13	-2002.10	3438.19	-1436.09	-0.72	2.76	-1.44	-0.12	-11.49
Cline Creek	23.25	-2419.23	1989.77	429.46	-0.19	1.44	-0.05	0.23	2.57
Cline Creek	23.33	-2241.15	21.55	2219.61	-5.02	-0.01	1.11	0.04	0.51
Cline Creek	23.45	-2955.14	502.85	2452.29	-1.79	0.08	0.11	0.25	7.66
Cline Creek	23.55	-3321.43	3548.10	-226.67	-3.44	1.19	-1.17	0.53	76.28
Cline Creek	23.64	-1818.51	2083.30	-264.78	-0.51	0.65	-1.15	0.25	75.29
Shangri-La	23.87	-702.96	844.27	-141.31	-0.65	1.55	-0.31	-0.24	-12.97
Shangri-La	23.94	-1741.91	1402.55	339.36	-3.58	0.03	-0.06	0.99	208.22
Shangri-La	24.03	-1103.99	224.54	879.46	-2.10	0.93	1.20	-0.20	-6.38
Shangri-La	24.12	-728.14	378.88	349.26	-1.30	1.27	2.29	0.31	11.30
Shangri-La	24.25	-1750.40	109.41	1640.99	-5.26	1.57	0.49	1.04	242.33
Shangri-La	24.38	-2904.04	1434.15	1469.89	1.66	2.42	2.34	-0.03	42.70
Shangri-La	24.48	-1053.13	1085.83	-32.70	-0.99	2.63	0.14	-0.48	-18.49
Shangri-La	24.61	-850.51	933.49	-82.98	-1.36	1.32	-0.32	-0.08	-12.37
Shangri-La	24.74	-919.54	765.37	154.16	-1.60	1.82	0.04	0.31	22.91
Shangri-La	24.87	-835.26	290.77	544.48	-1.54	0.83	1.86	0.07	95.11

Negative Value = HEC-2 Model is greater.

Positive Value = Non-structural Alternative is greater.

Table 4-4.7 Cont.
Comparison of Hydraulic Parameters- Skunk Creek Wash
Base HEC-RAS Model (Non-Structural Alternative) to Base HEC-2 Model
Existing Condition 100-Year Model

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Shangri-La	24.95	-614.73	79.31	535.42	-0.72	1.52	0.67	0.12	0.75
New River Road	25.12	-50.60	0.00	50.60	-0.30	0.00	0.59	0.10	287.48
New River Road	25.28	-835.30	1002.86	-167.56	-4.00	0.72	-3.40	0.46	145.93
New River Road	25.38	-1369.39	219.35	1150.05	-0.13	0.38	0.71	-0.08	237.23
New River Road	25.45	-604.26	0.00	604.26	-2.60	0.00	-0.18	0.14	412.81
New River Road	25.56	-409.43	-258.79	668.23	-0.33	-0.34	1.97	-0.42	353.92
New River Road	25.63	-674.07	-3.70	677.77	-1.63	0.09	1.03	-0.17	190.33
New River Road	25.70	NA	NA	NA	NA	NA	NA	NA	NA
New River Road	25.72	NA	NA	NA	NA	NA	NA	NA	NA
New River Road	25.83	-502.44	0.00	502.44	-0.98	0.00	0.95	0.02	1715.34
New River Road	25.95	-752.07	80.82	671.24	-1.37	1.60	1.45	-0.21	1316.74
New River Road	26.17	-321.09	0.01	321.09	-1.42	0.49	0.75	-0.04	64.75

Negative Value = HEC-2 Model is greater.

Positive Value = Non-structural Alternative is greater.

Table 4-4.8
Summary of Hydraulic Parameters
Full Structural Alternative for Skunk Creek Phase 1
Existing Condition 100-year Discharge

Reach	X-sec	Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	Channel Depth of Flow (ft)	Top Width (ft)
1	2	3	4	5	6	7	8	9	10
Braided	13.28	7533.45	8189.88	10976.66	9.05	4.73	4.25	12.10	1265.00
Braided	13.40	4596.89	8608.35	13494.76	12.76	9.47	8.71	8.93	932.00
Braided	13.55	3369.71	14268.04	9062.25	8.31	5.41	5.61	9.10	1334.00
Braided	13.66	5049.94	16799.54	4850.52	10.15	8.00	6.91	5.68	1427.00
Braided	13.86	7160.63	17476.62	2062.75	8.25	5.28	4.76	10.48	1330.15
Braided	14.07	8796.08	14664.93	3238.99	11.00	6.16	4.48	7.22	1724.00
Greasewood	14.30	13373.22	8736.61	4590.18	12.72	4.71	7.04	15.95	950.00
Greasewood	14.54	14417.69	0	12282.31	11.75	0	6.21	11.86	530.00
Cut Bank	14.74	12057.76	14121.09	521.15	14.39	10.82	7.61	9.49	400.00
Cut Bank	14.89	15437.22	11248.93	13.85	12.79	6.90	1.60	13.90	483.61
Cut Bank	15.06	12284.95	0	14415.05	13.04	0	9.01	11.61	418.00
Cut Bank	15.12	12588.01	0	14111.99	15.31	0	11.20	9.62	376.00
Cut Bank	15.22	11883.58	0	14816.42	11.25	0	7.26	12.40	523.00
Cut Bank	15.41	9315.79	0	17384.21	13.69	0	9.71	9.98	381.58
Cut Bank	15.55	22874.51	2646.96	1178.53	14.44	10.04	9.15	10.20	292.00
Cut Bank	15.75	12112.32	14386.50	201.18	9.59	5.98	4.54	14.56	639.00
Cut Bank	15.89	16091.82	4729.84	5878.34	15.41	8.04	8.80	9.95	393.00
Cut Bank	16.07	18381.61	8318.39	0	12.76	6.77	0	10.79	370.00
Cut Bank	16.19	15453.17	11246.83	0	13.77	7.13	0	11.65	470.59
Cut Bank	16.27	17487.37	9212.63	0	16.61	9.11	0	14.32	283.97
Knoll	16.49	10925.75	0	15774.25	9.66	0	6.96	9.72	524.00
Knoll	16.68	2103.77	734.61	23861.62	10.05	4.10	7.79	6.79	650.00

Table 4-4.9
Summary of Hydraulic Parameters
Stake Holder Alternative for Skunk Creek Phase 1
Existing Condition 100-year Discharge

Reach	X-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Braided	13.28	9518.47	7961.92	9219.61	12.77	6.04	4.80	11.13	2104.84
Braided	13.40	2935.26	9200.56	14564.18	7.62	4.20	4.80	9.31	2099.67
Braided	13.55	3664.43	15842.64	7192.92	11.75	7.18	7.49	7.68	1577.29
Braided	13.66	3690.25	19312.40	3697.35	7.03	5.29	4.75	5.88	1965.68
Braided	13.86	7008.31	18279.15	1412.53	9.78	5.82	5.26	9.52	1734.98
Braided	14.07	7443.81	16089.21	3166.98	8.85	4.99	3.79	7.45	2080.35
Greasewood	14.30	10590.02	6303.66	9806.32	10.97	3.07	4.18	15.12	2262.77
Greasewood	14.54	15072.25	8.50	11619.25	13.92	2.13	7.06	10.96	538.76
Greasewood	14.58	10934.34	6442.57	9323.08	9.24	7.36	8.40	8.83	650.94
Greasewood	14.59	13509.49	6854.78	6335.73	12.89	10.71	9.67	6.69	537.11
Cut Bank	14.74	11643.83	14514.80	541.37	13.14	10.10	3.01	9.97	608.01
Cut Bank	14.89	15894.82	10803.11	2.08	13.67	7.17	1.07	13.53	470.67
Cut Bank	15.06	11297.27	0	15402.73	11.66	0	7.74	11.84	531.38
Cut Bank	15.12	10927.72	0	15772.28	13.82	0	9.62	9.34	563.08
Cut Bank	15.22	12508.95	0	14191.05	12.87	0	7.80	11.66	574.19
Cut Bank	15.41	9152.30	0	17547.70	12.59	0	8.92	10.45	417.47
Cut Bank	15.55	18502.11	3327.14	4870.76	12.44	8.07	7.59	9.70	532.16
Cut Bank	15.75	13116.68	13157.28	426.04	11.50	6.85	3.60	13.59	718.27
Cut Bank	15.89	16091.82	4729.84	5878.34	15.41	8.04	8.80	9.95	393.00
Cut Bank	16.07	18381.61	8318.39	0	12.76	6.77	0	10.79	370.00
Cut Bank	16.19	14839.10	11860.91	0	13.22	6.94	0	11.65	497.78
Cut Bank	16.27	14989.36	11710.64	0	15.04	7.14	0	13.74	473.20
Knoll	16.49	10797.88	252.13	15649.98	10.67	2.57	7.16	8.83	667.89
Knoll	16.68	2100.58	747.81	23851.62	9.78	3.96	7.56	6.94	659.55

Table 4-4.10
Summary of Hydraulic Parameters
Low Impact Structural Alternative for Skunk Creek Phase 1
Existing Condition 100-year Discharge

Reach	X-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Braided	13.28	9357.62	7845.67	9496.71	12.55	5.94	5.06	11.13	1905.00
Braided	13.40	2958.48	9166.25	14575.26	7.73	4.25	4.85	11.17	2096.54
Braided	13.55	3637.81	15854.15	7208.03	11.58	7.07	7.39	10.71	1584.06
Braided	13.66	3695.13	19320.75	3684.12	7.08	5.34	4.78	7.75	1955.74
Braided	13.86	6977.36	18314.5	1408.13	9.71	5.8	5.16	9.54	1729.72
Braided	14.07	7450.75	16115.19	3134.06	8.9	5.05	3.79	7.43	1928.63
Greasewood	14.30	10613.98	6306.83	9779.19	11.01	3.13	4.19	15.11	2213.3
Greasewood	14.54	15060.03	9.02	11630.95	13.88	2.16	7.05	10.97	539.18
Cut Bank	14.74	10894.88	15284.35	520.77	12.28	8.82	2.84	9.98	693.01
Cut Bank	14.89	15680.84	11019.16	0.00	14.06	7.06	0.00	13.14	533.13
Cut Bank	15.06	10686.43	1705.41	14308.16	11.18	3.78	7.36	11.73	770.32
Cut Bank	15.12	10295.17	1485.76	14919.08	12.9	5.36	8.94	9.81	743.46
Cut Bank	15.22	13006.34	48.64	13645.02	13.93	2.71	8.2	11.32	606.22
Cut Bank	15.41	9062.99	0.00	17637.01	11.92	0.00	8.48	10.78	438.58
Cut Bank	15.55	18672.29	3265.97	4761.75	12.71	8.15	7.66	9.60	532.33
Cut Bank	15.75	13010.97	13239.22	449.81	11.32	6.77	3.59	13.66	720.88
Cut Bank	15.89	12117.1	10736.43	3846.47	13.7	7.26	7.16	8.69	724.51
Cut Bank	16.07	16837.96	9847.02	15.01	13.31	7.11	1.84	9.67	520.44
Cut Bank	16.19	13443.43	13256.57	0.00	12.46	5.94		11.29	754.77
Cut Bank	16.27	13752.4	12947.6	0.00	14.2	6.32		13.44	651.61
Knoll	16.49	11051.81	206.01	15442.18	11.48	2.76	7.66	8.46	654.21
Knoll	16.68	2092.6	769.16	23838.24	9.4	3.84	7.27	8.16	660.58

Table 4-4.11

Comparison of Hydraulic Parameters

Base HEC-RAS Model (Non-Structural Alternative) to Full Structural Alternative for Skunk Creek Phase 1

Existing Condition 100-Year Model

Reach	X-sec	Difference in Discharge			Difference in Velocity			Difference in Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Braided	13.28	1972.76	-224.18	-1748.57	3.70	1.30	0.54	-0.97	841.50
Braided	13.40	-1659.74	587.70	1072.04	-5.13	-5.27	-3.91	0.37	1176.66
Braided	13.55	292.49	1575.45	-1867.93	3.42	1.76	1.87	-1.42	244.29
Braided	13.66	-1358.67	2512.75	-1154.08	-3.11	-2.70	-2.16	0.19	538.67
Braided	13.86	-151.65	810.77	-659.12	1.53	0.54	0.45	-0.96	410.95
Braided	14.07	-1353.84	1424.92	-71.08	-2.15	-1.18	-0.69	0.23	356.65
Greasewood	14.30	-2765.82	-2447.77	5213.58	-1.73	-1.63	-2.85	-0.83	1312.77
Greasewood	14.54	647.19	8.81	-656.00	2.14	2.15	0.84	-0.89	9.01
Cut Bank	14.74	-1433.53	1478.44	-44.91	-2.37	-2.52	-4.90	0.46	381.40
Cut Bank	14.89	277.50	-263.65	-13.85	1.34	0.18	-1.60	-0.78	49.01
Cut Bank	15.06	-1613.98	1718.42	-104.44	-1.90	3.78	-1.67	0.13	352.79
Cut Bank	15.12	-2385.62	1637.86	747.75	-2.58	4.78	-2.37	-0.18	446.40
Cut Bank	15.22	1201.64	43.52	-1245.16	2.86	2.67	1.02	-1.13	81.72
Cut Bank	15.41	-267.15	0.00	267.15	-1.88	0.00	-1.29	0.86	132.59
Cut Bank	15.55	-4170.76	609.61	3561.15	-1.68	-1.87	-1.48	-0.61	240.16
Cut Bank	15.75	774.33	-1022.24	247.92	1.61	0.52	-0.98	-0.89	130.68
Cut Bank	15.89	-3974.72	6006.59	-2031.87	-1.71	-0.78	-1.64	-1.26	331.51
Cut Bank	16.07	-1543.97	1528.94	15.03	0.55	0.34	1.84	-1.12	150.45
Cut Bank	16.19	-1982.62	1982.62	0.00	-1.29	-1.21	0.00	-0.36	293.18
Cut Bank	16.27	-3724.25	3724.25	0.00	-2.39	-2.78	0.00	-0.88	367.53
Knoll	16.49	122.87	206.04	-328.91	1.81	2.75	0.70	-1.25	130.63
Knoll	16.68	-11.07	34.28	-23.21	-0.64	-0.26	-0.52	0.37	10.56

Negative Value = Structural Alternative is greater.
Positive Value = Non-structural Alternative is greater.

Table 4-4.12
Comparison of Hydraulic Parameters
Base HEC-RAS Model (Non-Structural Alternative) to Stakeholder Alternative for Skunk Creek Phase 1
Existing Condition 100-Year Model

Reach	X-sec	Difference in Discharge			Difference in Velocity			Difference Channel Depth of Flow	Top Width Difference
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Braided	13.28	-12.26	3.78	8.48	-0.02	-0.01	-0.01	0.00	1.66
Braided	13.40	1.89	-4.51	2.62	0.01	0.00	0.00	-0.01	8.99
Braided	13.55	-2.23	0.85	1.40	-0.02	-0.01	-0.01	0.00	1.00
Braided	13.66	1.02	-0.11	-0.91	0.01	0.01	0.00	-0.01	-0.01
Braided	13.86	0.67	8.24	-8.90	0.00	0.00	-0.05	0.00	6.12
Braided	14.07	-1.57	0.64	0.93	0.00	-0.01	0.00	0.00	0.30
Greasewood	14.30	17.38	-14.82	-2.56	0.02	0.01	0.01	0.00	0.00
Greasewood	14.54	-7.37	0.31	7.06	-0.03	0.02	-0.01	0.01	0.25
Greasewood	14.58	NA	NA	NA	NA	NA	NA	NA	NA
Greasewood	14.59	NA	NA	NA	NA	NA	NA	NA	NA
Cut Bank	14.74	-1019.60	1084.73	-65.13	-1.12	-1.80	-0.30	-0.02	173.39
Cut Bank	14.89	-180.10	182.17	-2.08	0.46	-0.09	-1.07	-0.41	61.95
Cut Bank	15.06	-626.30	1718.42	-1092.12	-0.52	3.78	-0.40	-0.10	239.41
Cut Bank	15.12	-725.33	1637.86	-912.54	-1.09	4.78	-0.79	0.10	259.32
Cut Bank	15.22	576.27	43.52	-619.79	1.24	2.67	0.48	-0.39	30.53
Cut Bank	15.41	-103.66	0.00	103.66	-0.78	0.00	-0.50	0.39	96.70
Cut Bank	15.55	201.64	-70.57	-131.08	0.32	0.10	0.08	-0.11	0.00
Cut Bank	15.75	-230.03	206.98	23.06	-0.30	-0.35	-0.04	0.08	51.41
Cut Bank	15.89	-3974.72	6006.59	-2031.87	-1.71	-0.78	-1.64	-1.26	331.51
Cut Bank	16.07	-1543.97	1528.94	15.03	0.55	0.34	1.84	-1.12	150.45
Cut Bank	16.19	-1368.55	1368.54	0.00	-0.74	-1.02	0.00	-0.36	265.99
Cut Bank	16.27	-1226.24	1226.24	0.00	-0.82	-0.81	0.00	-0.30	178.30
Knoll	16.49	250.74	-46.09	-204.64	0.80	0.18	0.50	-0.36	-13.26
Knoll	16.68	-7.88	21.08	-13.21	-0.37	-0.12	-0.29	0.22	1.01

Negative Value = Stakeholder Alternative is greater.
Positive Value = Non-structural Alternative is greater.

Table 4-4.13
Comparison of Hydraulic Parameters
Base HEC-RAS Model (Non-Structural Alternative) to Low Impact Structural Alternative for Skunk Creek Phase 1
Existing Condition 100-Year Model

Reach	X-sec	Difference in Discharge			Difference in Velocity			Difference Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Braided	13.28	148.59	120.03	-268.62	0.20	0.09	-0.27	0.00	201.50
Braided	13.40	-21.33	29.80	-8.46	-0.10	-0.05	-0.05	0.03	12.12
Braided	13.55	24.39	-10.66	-13.71	0.15	0.10	0.09	-0.03	-5.77
Braided	13.66	-3.86	-8.46	12.32	-0.04	-0.04	-0.03	0.02	9.93
Braided	13.86	31.62	-27.11	-4.50	0.07	0.02	0.05	-0.02	11.38
Braided	14.07	-8.51	-25.34	33.85	-0.05	-0.07	0.00	0.02	152.02
Greasewood	14.30	-6.58	-17.99	24.57	-0.02	-0.05	0.00	0.01	49.47
Greasewood	14.54	4.85	-0.21	-4.64	0.01	-0.01	0.00	0.00	-0.17
Greasewood	14.74	-270.65	315.18	-44.53	-0.26	-0.52	-0.13	-0.03	88.39
Greasewood	14.89	33.88	-33.88	0.00	0.07	0.02	0.00	-0.02	-0.51
Cut Bank	15.06	-15.46	13.01	2.45	-0.04	0.00	-0.02	0.01	0.47
Cut Bank	15.12	-92.78	152.10	-59.34	-0.17	-0.58	-0.11	0.03	78.94
Cut Bank	15.22	78.88	-5.12	-73.76	0.18	-0.04	0.08	-0.05	-1.50
Cut Bank	15.41	-14.35	0.00	14.35	-0.11	0.00	-0.06	0.06	75.59
Cut Bank	15.55	31.46	-9.40	-22.07	0.05	0.02	0.01	-0.01	-0.17
Cut Bank	15.75	-124.32	125.04	-0.71	-0.12	-0.27	-0.03	0.01	48.80
Cut Bank	15.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cut Bank	16.07	-0.32	0.31	0.02	0.00	0.00	0.00	0.00	0.01
Cut Bank	16.19	27.12	-27.12	0.00	0.02	-0.02	0.00	0.00	9.00
Cut Bank	16.27	10.72	-10.72	0.00	0.02	0.01	0.00	0.00	-0.11
Knoll	16.49	-3.19	0.03	3.16	-0.01	-0.01	0.00	0.01	0.42
Knoll	16.68	0.10	-0.27	0.17	0.01	0.00	0.00	0.00	-0.02

Negative Value = Low Impact Structural Alternative is greater.
Positive Value = Non-structural Alternative is greater.

4-4.9.2.2 Sonoran Wash

Master Plan Alternatives for Sonoran Wash, as with Phase 1 of Skunk Creek, consisted of a Full Structural Alternative, a Stakeholder Alternative, a Low Impact Structural Alternative, and a Non Structural Alternative. The Non-Structural Alternative is an alternative in which no encroachments into the 100-year floodplain is allowed. The base Sonoran Wash HEC-RAS model characterizes the elements of the Non-Structural Alternative. The floodway profile run for the base HEC RAS model characterizes the Full Structural Alternative (total floodway fringe encroachment). Encroachments stations for the floodway profile, developed for the base model are revised to model elements (partial encroachment of floodway fringe area) of the Stakeholder and Low Impact Structural alternatives. Table 4-4.14 lists a summary of results for selected hydraulic parameters for the Non-Structural Alternative. Table 4-4.15, Table 4-4.16 and Table 4-4.17 lists a summary of results for selected hydraulic parameters for the Full Structure Alternative, Stakeholder Alternative and the Low Impact Structural Alternative respectively.

Results of the hydraulic models for the Full Structure Alternative, Stakeholder Alternative and the Low Impact Structural Alternative are compared to results of the hydraulic model for the Non-Structural Alternative to determine the impact of the alternative on the hydraulic properties of the watercourse. Tables 4-4.18, 4-4.19 and 4-4.20 list the results of the comparison of the Non-Structural model with the Full Structure Alternative, Stakeholder Alternative and Low Impact Structural Alternative respectively. Results of the comparison between no encroachment to full encroachment or partial encroachment indicate that generally there is a reduction in floodplain width at locations of encroachment into the floodway fringe along with an increase in flow velocity and depth. The greater the encroachment the greater the change in channel velocity and depth.

Table 4-4.14

Summary of Hydraulic Parameters

Non-Structural Alternative for Sonoran Wash

Existing Condition Model

Reach	X-sec	Discharge			Velocity				Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	Channel Depth of Flow (ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Sandy	0.92	5200.94	446.44	4052.62	5.33	1.73	2.51	8.62	692.11
Sandy	1.00	5329.48	298.75	4071.77	7.53	1.4	3.69	6.08	775.61
Sandy	1.09	3511.54	3143.03	3045.43	10.47	4.12	3.88	9.25	858.53
Sandy	1.15	4102.05	2966.41	2631.55	7.16	3.24	3.35	7.58	964.49
Main Stem	1.21	3848.09	2570.48	3281.43	9.09	3.58	3.53	8.31	1052.09
Main Stem	1.25	3049.69	3226.75	3423.56	6.33	2.99	2.53	9.38	1323.78
Main Stem	1.29	3976.27	1874.81	3848.93	8.1	3.98	3.33	7.17	1125.09
Main Stem	1.33	3671.28	602.93	5425.79	8.43	2.75	3.53	6.05	1117.35
Main Stem	1.38	2888.85	61.2	6749.95	8.38	1.64	3.58	7.29	1055.49
Main Stem	1.48	4319.42	1280.67	4099.91	10.62	3.92	4.19	7.59	837.91
Main Stem	1.56	4056.07	2253.98	3389.95	8.97	3.39	3.51	8.09	901.21
Main Stem	1.65	5786.97	1435.74	2477.29	10.59	2.66	3.79	9.87	880.92
Main Stem	1.72	5900.23	2568.71	1231.06	8.86	2.91	2.87	10.5	893.85
Main Stem	1.77	5623.58	2701.87	1374.55	8.7	3.06	2.79	10.84	934.12
Ironwood	1.84	3418.79	1869.83	4411.38	8.33	2.4	4.68	9.27	878.6
Ironwood	1.90	4708.81	1372.51	3618.68	11.23	2.86	3.64	9.24	954.55
Ironwood	1.99	3750.18		5949.82	6.42		3.27	7	1214.23
Ironwood	2.08	2664.07	2926.6	2809.33	7.2	3.31	2.67	7.04	1035.69
Ironwood	2.13	4085.61	666.1	3648.29	13.24	3.64	5.85	8.11	857.17
Ironwood	2.19	2198.38	760.41	5441.21	6.84	2.15	3.83	9.54	1295.88
Ironwood	2.28	4011.55	449.85	3938.6	10.79	2.7	6.37	7.93	375.97
Ironwood	2.35	5522.04	2847.32	30.63	8.54	4.12	1.39	9.99	401.96
Ironwood	2.41	3742.59	2971.18	1686.23	7.84	3.29	2.46	11.25	685.53
Ironwood	2.46	5294.85	2467.41	637.74	11.92	5.07	5.08	8.95	358.16
Ironwood	2.52	4258.97	1416.84	2724.19	6.06	3.14	3.14	9.06	482.97
Ironwood	2.58	3974.8	694.09	3731.11	9.93	2.81	4.65	7.99	539.53
Ironwood	2.64	4056.1	1896.41	2447.49	8.36	4.16	3.96	7.95	461.69

Table 4-4.14 Continued

Summary of Hydraulic Parameters

Non-Structural Alternative for Sonoran Wash

Existing Condition Model

Reach	X-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Ironwood	2.69	2150.07	2276.6	3973.33	6.66	2.95	4.47	8.86	654.41
Ironwood	2.73	2601.11	3898.88	0	8.67	4.42	0.33	7.91	380.48
Ironwood	2.77	3858.58	2641.42		9.06	4.92		6.04	362.87
Ironwood	2.84	1757.47	4171.94	570.59	7.49	5.42	4.13	6.66	326.79
Ironwood	2.88	2483.71	3468.41	547.87	11.49	5.91	5.79	5.84	364.95
Ironwood	2.93	2593.4	2988.35	918.25	7.2	4.49	4.17	6.03	369.29
Ironwood	2.97	3349.56	2052.37	1098.07	11.55	4.44	5.68	6.49	345.66
Hackberry	3.05	3260.53	83.74	3155.73	8.06	1.96	4.59	9.1	272.51
Hackberry	3.10	3720.01		2779.99	9.05		4.91	7.69	275.33
Hackberry	3.15	3069.37	2071.76	1358.87	8.67	4.73	4.09	8.1	291.29
Hackberry	3.24	3298.18	3201.82		9.48	4.72		8.46	292.12
Hackberry	3.31	3178.5	2600.53	720.97	7.83	3.97	4.21	8.31	342.04
Hackberry	3.40	3243.94	763.82	2492.23	9.29	3.52	4.91	8.62	283.45
Hackberry	3.46	4167.92	519.41	1812.67	10.77	3.71	4.97	9.19	228.85
Hackberry	3.54	3872.02	46.75	2581.23	7.71	1.77	4.4	8	292.37
Hackberry	3.61	3755.62	1248.9	1495.48	11.35	4.65	4.59	8.89	293.05
Hackberry	3.65	2984.16	2723.75	792.08	7.09	3.77	2.66	8.31	407.56
Hackberry	3.70	1674.07	1623.39	2.54	4.88	2.87	0.65	7.75	268.86
Hackberry	3.73	571.05	480.45	2248.49	5.03	2.85	3.75	5.1	328.03
Hackberry	3.76	929.69	910.61	1459.7	6.72	3.43	3.92	4.7	394.94
Hackberry	3.79	1383.22	1081.35	835.43	7.6	2.94	3.9	5.11	409.38
Hackberry	3.84	1893.74	800.9	605.36	8.8	3.12	3.99	6.6	303.39

Table 4-4.15

Summary of Hydraulic Parameters

Full Structural Alternative for Sonoran Wash

Existing Condition Model

Reach	X-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Sandy	0.92	4888.65	493.45	4317.9	4.25	1.47	2.1	9.62	692.11
Sandy	1.00	6821.78	0.00	2878.22	9.02	0.00	4.49	6.36	378.76
Sandy	1.09	4373.32	2422.73	2903.95	11.59	5.52	5.05	10.05	394.81
Sandy	1.15	5655.45	2587.46	1457.09	8.19	4.37	4.06	8.57	428.55
Main Stem	1.21	4688.18	1977.83	3033.99	9.37	4.17	4.21	9.26	557.88
Main Stem	1.25	4277.98	1489.06	3932.96	7.67	3.5	3.79	10.32	543.67
Main Stem	1.29	5022.23	0.00	4677.77	8.27	0.00	4.35	8.15	520.09
Main Stem	1.33	4715.83	0.00	4984.17	9.32	0.00	4.36	6.83	555.43
Main Stem	1.38	3764.27	0.00	5935.73	9.34	0.00	4.38	8.2	569.85
Main Stem	1.48	5410.19	0.00	4289.81	11.44	0.00	5.23	8.48	399.12
Main Stem	1.56	4677.91	1588.58	3433.51	9.06	4.38	4.59	9.01	377.3
Main Stem	1.65	7140.64	987.98	1571.38	12.51	4.43	5.24	10.18	301.93
Main Stem	1.72	6852.71	2712.35	134.94	8.92	4.27	3.86	11.49	295.25
Main Stem	1.77	6920.71	2385.26	394.03	9.59	4.26	3.58	11.57	345.21
Ironwood	1.84	3829.72	91.53	5778.75	8.22	2.93	5.07	10.24	360
Ironwood	1.90	4410.4	272.05	5017.54	9.62	3.72	3.65	9.94	619.94
Ironwood	1.99	4870.79	0.00	4829.21	8.21	0.00	5.27	7.08	362.25
Ironwood	2.08	3376.09	2514.61	2509.3	7.86	4.52	3.41	7.95	481.87
Ironwood	2.13	3744.55	1115.91	3539.54	10.65	3.84	5.35	8.96	392
Ironwood	2.19	2773.52	0.00	5626.48	8.64	0.00	5.56	9.53	254.31
Ironwood	2.28	4815.87	0.00	3584.13	11.25	0.00	7.31	8.85	163.68
Ironwood	2.35	6654	1599.06	146.94	9.01	5.22	2.53	10.87	206.24
Ironwood	2.41	4747.78	2442.97	1209.26	8.99	4.26	3.46	12.12	290
Ironwood	2.46	5999.25	2313.11	87.64	11.38	5.28	4.56	9.97	225.8
Ironwood	2.52	4886.44	894.84	2618.72	6.28	3.34	3.68	9.8	312.62
Ironwood	2.58	4675.85	1.45	3722.7	10.85	1.25	6.29	8.48	208.35
Ironwood	2.64	4688.28	0.00	3711.72	8.57	0.00	4.57	8.74	322.37
Ironwood	2.69	2179.27	1540.17	4680.55	6.01	3.04	4.09	9.64	525.91
Ironwood	2.73	3004.46	3495.54	0.00	9.24	5.37	0.00	8.35	229.96
Ironwood	2.77	5050.38	1449.62	0.00	10.73	5.18	0.00	6.51	206.56

Table 4-4.15 Continued

Summary of Hydraulic Parameters

Full Structural Alternative for Sonoran Wash

Existing Condition Model

Reach	X-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Ironwood	2.84	1937.48	4562.52	0.00	7.01	5.48	0.00	7.61	227.02
Ironwood	2.88	3086.14	3413.86	0.00	12.2	6.16	0.00	6.64	244.56
Ironwood	2.93	3128.94	2987.57	383.49	7.48	5.38	4.47	6.83	208.83
Ironwood	2.97	3853.94	1241.14	1404.92	12.61	6	6.54	6.8	186.67
Hackberry	3.05	3812.27	89.36	2598.37	8.56	2.98	5.5	9.81	157.97
Hackberry	3.10	4751.97	0.00	1748.03	10.43	0.00	6.38	8.27	144.54
Hackberry	3.15	3607.93	1915.29	976.78	8.88	5.37	4.99	9.07	159.76
Hackberry	3.24	4039.55	2460.45	0.00	10.32	5.88	0.00	9.15	167.5
Hackberry	3.31	4023.33	2476.67	0.00	8.45	4.77	0.00	9.29	201.06
Hackberry	3.40	3912.63	275.1	2312.27	9.87	4.37	5.93	9.55	139.77
Hackberry	3.46	4669.56	0.00	1830.44	10.72	0.00	6.16	10.14	114.44
Hackberry	3.54	4554.86	17.95	1927.19	7.97	2.2	5.16	8.8	168.05
Hackberry	3.61	4426.19	816.14	1257.67	12.56	6.63	6.69	9.33	121.78
Hackberry	3.65	3512.83	2298.26	688.91	7.3	4.36	3.93	9.25	200
Hackberry	3.70	1980.29	1317.67	2.04	4.83	3.16	1.01	8.67	165.04
Hackberry	3.73	826.43	0.00	2473.57	5.95	0.00	4.4	5.91	183.64
Hackberry	3.76	1494.25	330.82	1474.93	8.61	4.91	5.4	5.52	172.06
Hackberry	3.79	1974.19	1316.88	8.93	8.63	4.86	2.29	6.13	128.65
Hackberry	3.84	2547.92	570.96	181.12	10	5	4.63	7.55	84.75

Table 4-4.16

Summary of Hydraulic Parameters

Stakeholder Alternative for Sonoran Wash

Existing Condition Model

Reach	X-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Sandy	0.92	5200.94	446.44	4052.62	5.33	1.73	2.51	8.62	692.11
Sandy	1.00	5329.48	298.75	4071.77	7.53	1.4	3.69	6.08	775.61
Sandy	1.09	3510.7	3143.38	3045.92	10.47	4.11	3.88	9.25	858.63
Sandy	1.15	4100.64	2967.44	2631.93	7.16	3.24	3.35	7.58	964.6
Main Stem	1.19	8025.65	406.79	1267.55	5.62	1.55	1.53	7.75	935.6
Main Stem	1.21	7533.73	243.2	1923.07	8.92	1.88	6.09	7.38	474.51
Main Stem	1.24981	7871.97	432.46	1395.56	6.97	1.81	3.69	8.24	522.99
Main Stem	1.25	7374.48	392.92	1932.6	7.16	1.77	5.15	7.93	516.13
Main Stem	1.29	8400.5	0.0	1299.5	6.39	0.0	3.64	7.43	384.67
Main Stem	1.32982	9114.75	0.0	585.25	5.24	0.0	2.37	7.58	356.43
Main Stem	1.33	8717.37	0.0	982.63	6.72	0.0	4.22	5.39	352.83
Main Stem	1.38	8731.18	0.0	968.82	7.85	0.0	5.45	5.66	287.77
Main Stem	1.4798	8821.5	0.0	878.5	9.48	0.0	4.88	7.07	231.53
Main Stem	1.48	8226.03	0.0	1473.97	11.65	0.0	8.48	4.95	228.94
Main Stem	1.56	8203.91	0.0	1496.09	8.07	0.0	5.71	7.83	242.1
Main Stem	1.64981	8539.31	0.0	1160.69	8.33	0.0	4.49	8.66	234.53
Main Stem	1.65	7971.44	0.0	1728.56	9.62	0.0	7.09	6.42	229.98
Main Stem	1.678	7940.89	0.0	1759.11	10.68	0.0	7.61	6.94	213.43
Main Stem	1.69878	7919.73	0.0	1780.27	10.1	0.0	6.9	7.64	220.37
Main Stem	1.699	7738.24	0.0	1961.76	11.28	0.0	8.15	6.39	212.76
Main Stem	1.72	7210.37	1776.2	713.43	11.4	4.53	5.46	10.17	331.99
Main Stem	1.77	7009.2	2315.05	375.75	9.88	4.31	3.61	11.45	345.21
Ironwood	1.84	3626.22	87.16	5986.62	7.76	2.77	4.63	10.27	416.92
Ironwood	1.90	4551.84	271.3	4876.86	10.09	3.86	3.73	9.81	619.94
Ironwood	1.99	4839.47	0.0	4860.53	8.03	0.0	5.19	7.16	362.5
Ironwood	2.08	3387.31	2516.79	2495.9	7.91	4.55	3.42	7.93	481.87
Ironwood	2.13	3725.88	1113.38	3560.74	10.59	3.83	5.27	8.96	400

Table 4-4.16 Continued

Stakeholder Alternative for Sonoran Wash, Existing Condition Model

Reach	X-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Ironwood	2.19	2778.87	0.0	5621.13	8.68	0.0	5.58	9.51	254.31
Ironwood	2.28	4814.72	0.0	3585.28	11.24	0.0	7.3	8.86	163.68
Ironwood	2.35	6654.16	1599.02	146.82	9.01	5.22	2.53	10.87	206.21
Ironwood	2.41	4747.83	2442.94	1209.23	8.99	4.26	3.46	12.12	290
Ironwood	2.46	5269.1	3052.78	78.12	9.8	4.83	3.93	10.1	266.43
Ironwood	2.52	4554.03	1579.43	2266.54	6.27	3.3	3.58	9.3	373.97
Ironwood	2.58	4287.21	872.91	3239.88	10.41	3.14	5.91	8.18	378.12
Ironwood	2.64	3873.2	1936.33	2590.47	7.6	3.88	3.73	8.26	461.65
Ironwood	2.69	2132.25	2289.94	3977.82	6.56	2.92	4.41	8.91	656.68
Ironwood	2.73	2588.92	3911.08	0.0	8.61	4.41	0.0	7.92	380.64
Ironwood	2.77	3859.3	2640.7	0.0	9.07	4.92	0.0	6.04	362.82
Ironwood	2.84	1757.38	4172	570.62	7.49	5.42	4.13	6.66	326.8
Ironwood	2.88	2466.6	3483.01	550.39	11.34	5.85	5.74	5.87	364.95
Ironwood	2.93	2597.65	2985.28	917.07	7.23	4.52	4.19	6.01	368.88
Ironwood	2.97	3286.79	2104.41	1108.8	11.16	4.36	5.55	6.58	345.66
Hackberry	3.05	3279.28	80.04	3140.68	8.18	1.97	4.64	9.04	271.03
Hackberry	3.10	3726.24	0.0	2773.76	9.09	0.0	4.92	7.68	275.05
Hackberry	3.15	3068.12	2072.03	1359.85	8.67	4.73	4.09	8.1	291.18
Hackberry	3.24	3297.85	3202.15	0.0	9.48	4.72	0.0	8.46	292.13
Hackberry	3.31	3178.29	2600.67	721.04	7.83	3.97	4.21	8.31	342.01
Hackberry	3.40	3243.77	763.89	2492.34	9.29	3.52	4.91	8.62	283.46
Hackberry	3.46	4167.26	519.79	1812.95	10.77	3.72	4.97	9.19	228.7
Hackberry	3.54	3872.15	46.72	2581.12	7.71	1.77	4.4	8	292.36
Hackberry	3.61	3753.7	1249.95	1496.35	11.35	4.66	4.59	8.89	292.61
Hackberry	3.65	2984.41	2723.72	791.88	7.09	3.78	2.67	8.31	407.31
Hackberry	3.70	1674.1	1623.36	2.54	4.88	2.87	0.65	7.75	268.81
Hackberry	3.73	568.8	484.75	2246.45	5.01	2.88	3.75	5.1	321.46
Hackberry	3.76	928.91	911.16	1459.94	6.72	3.44	3.94	4.69	393.23
Hackberry	3.79	1377.58	1085.61	836.81	7.57	2.96	3.91	5.11	404.29
Hackberry	3.84	1896.25	799.37	604.38	8.82	3.12	4	6.59	302.97

Table 4-4.17

Summary of Hydraulic Parameters

Low Impact Structural Alternative for Sonoran Wash

Existing Condition Model

Reach	X-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Sandy	0.92	5200.94	446.43	4052.63	5.33	1.73	2.51	8.62	692.11
Sandy	1.00	5430.26	125.65	4144.08	7.69	1.51	3.77	6.07	636.00
Sandy	1.09	3525.45	3015.02	3159.53	10.42	4.52	3.91	9.30	729.60
Sandy	1.15	4087.86	2955.05	2657.09	7.09	3.28	3.33	7.61	917.33
Main Stem	1.21	3998.19	2707.24	2994.57	9.45	3.86	3.83	8.31	910.00
Main Stem	1.25	3206.55	3164.81	3328.64	6.55	3.20	2.83	9.48	940.00
Main Stem	1.29	3941.40	1862.40	3896.20	7.80	4.23	3.55	7.29	910.00
Main Stem	1.33	3854.37	649.96	5195.68	8.79	3.19	3.85	6.09	920.00
Main Stem	1.38	3049.62	80.85	6569.53	8.65	1.81	3.99	7.41	852.23
Main Stem	1.48	4437.70	1404.94	3857.36	10.63	4.51	4.67	7.73	625.00
Main Stem	1.56	4448.90	2598.24	2652.86	9.63	4.01	4.50	8.23	539.98
Main Stem	1.65	6143.00	2150.42	1406.58	10.60	3.41	4.51	10.28	546.72
Main Stem	1.72	5872.69	3013.92	813.39	8.41	3.21	4.25	10.81	585.00
Main Stem	1.77	6207.91	3094.81	397.28	9.52	3.58	3.06	10.89	615.00
Ironwood	1.84	3153.76	2138.40	4407.84	7.39	2.48	4.23	9.55	801.92
Ironwood	1.90	4458.65	1463.91	3777.44	10.39	2.94	3.58	9.41	865.00
Ironwood	1.99	3832.47	0.00	5867.53	6.69	0.00	3.38	6.90	915.58
Ironwood	2.08	2970.21	3410.61	2019.18	7.84	3.66	2.94	7.18	805.24
Ironwood	2.13	4079.73	836.86	3483.41	12.60	3.69	5.63	8.41	498.20
Ironwood	2.19	2207.06	773.31	5419.63	6.85	2.17	4.24	9.56	501.96
Ironwood	2.28	3990.74	466.33	3942.93	10.67	2.72	6.31	7.97	375.83
Ironwood	2.35	5529.52	2840.83	29.65	8.58	4.14	1.39	9.98	400.66
Ironwood	2.41	3742.89	2971.10	1686.01	7.84	3.29	2.46	11.25	685.51
Ironwood	2.46	5151.01	2579.05	669.93	11.21	4.89	4.87	9.14	361.31
Ironwood	2.52	4292.76	1411.21	2696.03	6.18	3.19	3.18	8.99	482.01
Ironwood	2.58	3991.37	685.84	3722.79	10.00	2.82	4.68	7.97	538.47
Ironwood	2.64	4050.36	1897.66	2451.98	8.33	4.15	3.95	7.96	461.88

Table 4-4.17 Continued

Summary of Hydraulic Parameters

Low Impact Structural Alternative for Sonoran Wash

Existing Condition Model

Reach	X-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Ironwood	2.69	2149.77	2276.81	3973.42	6.65	2.95	4.47	8.86	654.47
Ironwood	2.73	2601.01	3898.99	0.00	8.67	4.42	0.33	7.91	380.48
Ironwood	2.77	3858.66	2641.34	0.00	9.06	4.92	0.00	6.04	362.80
Ironwood	2.84	1757.47	4171.94	570.59	7.49	5.42	4.13	6.66	326.79
Ironwood	2.88	2470.65	3480.54	548.81	11.37	5.86	5.74	5.86	365.11
Ironwood	2.93	2596.62	2986.04	917.35	7.22	4.51	4.18	6.01	368.97
Ironwood	2.97	3307.31	2092.60	1100.09	11.27	4.39	5.55	6.56	346.45
Hackberry	3.05	3273.35	81.20	3145.45	8.14	1.97	4.63	9.06	271.49
Hackberry	3.10	3724.38	0.00	2775.62	9.08	0.00	4.92	7.68	275.12
Hackberry	3.15	3068.48	2071.96	1359.56	8.67	4.73	4.09	8.10	291.18
Hackberry	3.24	3276.71	3223.29	0.00	9.44	4.86	0.00	8.45	275.40
Hackberry	3.31	3461.14	2244.55	794.31	8.46	4.39	4.57	8.36	283.61
Hackberry	3.40	3158.20	810.76	2531.04	8.80	4.25	4.73	8.81	244.67
Hackberry	3.46	4173.08	517.94	1808.99	10.81	3.72	4.99	9.18	228.44
Hackberry	3.54	3870.90	46.94	2582.17	7.71	1.77	4.39	8.01	292.49
Hackberry	3.61	3755.03	1249.48	1495.49	11.36	4.66	4.59	8.89	292.61
Hackberry	3.65	2984.09	2723.78	792.12	7.09	3.77	2.67	8.31	407.31
Hackberry	3.70	1674.08	1623.38	2.54	4.88	2.87	0.65	7.75	268.81
Hackberry	3.73	568.80	484.76	2246.45	5.01	2.88	3.75	5.10	321.46
Hackberry	3.76	928.91	911.16	1459.94	6.72	3.44	3.94	4.69	393.23
Hackberry	3.79	1378.09	1085.17	836.74	7.57	2.96	3.91	5.11	404.29
Hackberry	3.84	1895.88	799.59	604.52	8.82	3.12	4.00	6.59	303.03

Table 4-4.18

Comparison of Hydraulic Parameters

Non-Structural Alternative to Full Structural Alternative for Sonoran Wash

Existing Condition 100-year Discharge

Reach	X-sec	Difference in Discharge			Difference in Velocity			Difference in Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Sandy	0.92	312.29	-47.01	-265.28	1.08	0.26	0.41	-1.00	0.00
Sandy	1.00	-1492.30	298.75	1193.55	-1.49	1.40	-0.80	-0.28	396.85
Sandy	1.09	-861.78	720.30	141.48	-1.12	-1.40	-1.17	-0.80	463.72
Sandy	1.15	-1553.40	378.95	1174.46	-1.03	-1.13	-0.71	-0.99	535.94
Main Stem	1.21	-840.09	592.65	247.44	-0.28	-0.59	-0.68	-0.95	494.21
Main Stem	1.25	-1228.29	1737.69	-509.40	-1.34	-0.51	-1.26	-0.94	780.11
Main Stem	1.29	-1045.96	1874.81	-828.84	-0.17	3.98	-1.02	-0.98	605.00
Main Stem	1.33	-1044.55	602.93	441.62	-0.89	2.75	-0.83	-0.78	561.92
Main Stem	1.38	-875.42	61.20	814.22	-0.96	1.64	-0.80	-0.91	485.64
Main Stem	1.48	-1090.77	1280.67	-189.90	-0.82	3.92	-1.04	-0.89	438.79
Main Stem	1.56	-621.84	665.40	-43.56	-0.09	-0.99	-1.08	-0.92	523.91
Main Stem	1.65	-1353.67	447.76	905.91	-1.92	-1.77	-1.45	-0.31	578.99
Main Stem	1.72	-952.48	-143.64	1096.12	-0.06	-1.36	-0.99	-0.99	598.60
Main Stem	1.77	-1297.13	316.61	980.52	-0.89	-1.20	-0.79	-0.73	588.91
Ironwood	1.84	-410.93	1778.30	-1367.37	0.11	-0.53	-0.39	-0.97	518.60
Ironwood	1.90	298.41	1100.46	-1398.86	1.61	-0.86	-0.01	-0.70	334.61
Ironwood	1.99	-1120.61	0.00	1120.61	-1.79	0.00	-2.00	-0.08	851.98
Ironwood	2.08	-712.02	411.99	300.03	-0.66	-1.21	-0.74	-0.91	553.82
Ironwood	2.13	341.06	-449.81	108.75	2.59	-0.20	0.50	-0.85	465.17
Ironwood	2.19	-575.14	760.41	-185.27	-1.80	2.15	-1.73	0.01	1041.57
Ironwood	2.28	-804.32	449.85	354.47	-0.46	2.70	-0.94	-0.92	212.29
Ironwood	2.35	-1131.96	1248.26	-116.31	-0.47	-1.10	-1.14	-0.88	195.72
Ironwood	2.41	-1005.19	528.21	476.97	-1.15	-0.97	-1.00	-0.87	395.53
Ironwood	2.46	-704.40	154.30	550.10	0.54	-0.21	0.52	-1.02	132.36
Ironwood	2.52	-627.47	522.00	105.47	-0.22	-0.20	-0.54	-0.74	170.35
Ironwood	2.58	-701.05	692.64	8.41	-0.92	1.56	-1.64	-0.49	331.18

Table 4-4.18 Continued

Comparison of Hydraulic Parameters

Non-Structural Alternative to Full Structural Alternative for Sonoran Wash

Existing Condition 100-year Discharge

Reach	X-sec	Difference in Discharge			Difference in Velocity			Difference in Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Ironwood	2.64	-632.18	1896.41	-1264.23	-0.21	4.16	-0.61	-0.79	139.32
Ironwood	2.69	-29.20	736.43	-707.22	0.65	-0.09	0.38	-0.78	128.50
Ironwood	2.73	-403.35	403.34	0.00	-0.57	-0.95	0.33	-0.44	150.52
Ironwood	2.77	-1191.80	1191.80	0.00	-1.67	-0.26	0.00	-0.47	156.31
Ironwood	2.84	-180.01	-390.58	570.59	0.48	-0.06	4.13	-0.95	99.77
Ironwood	2.88	-602.43	54.55	547.87	-0.71	-0.25	5.79	-0.80	120.39
Ironwood	2.93	-535.54	0.78	534.76	-0.28	-0.89	-0.30	-0.80	160.46
Ironwood	2.97	-504.38	811.23	-306.85	-1.06	-1.56	-0.86	-0.31	158.99
Hackberry	3.05	-551.74	-5.62	557.36	-0.50	-1.02	-0.91	-0.71	114.54
Hackberry	3.10	-1031.96	0.00	1031.96	-1.38	0.00	-1.47	-0.58	130.79
Hackberry	3.15	-538.56	156.47	382.09	-0.21	-0.64	-0.90	-0.97	131.53
Hackberry	3.24	-741.37	741.37	0.00	-0.84	-1.16	0.00	-0.69	124.62
Hackberry	3.31	-844.83	123.86	720.97	-0.62	-0.80	4.21	-0.98	140.98
Hackberry	3.40	-668.69	488.72	179.96	-0.58	-0.85	-1.02	-0.93	143.68
Hackberry	3.46	-501.64	519.41	-17.77	0.05	3.71	-1.19	-0.95	114.41
Hackberry	3.54	-682.84	28.80	654.04	-0.26	-0.43	-0.76	-0.80	124.32
Hackberry	3.61	-670.57	432.76	237.81	-1.21	-1.98	-2.10	-0.44	171.27
Hackberry	3.65	-528.67	425.49	103.17	-0.21	-0.59	-1.27	-0.94	207.56
Hackberry	3.70	-306.22	305.72	0.50	0.05	-0.29	-0.36	-0.92	103.82
Hackberry	3.73	-255.38	480.45	-225.08	-0.92	2.85	-0.65	-0.81	144.39
Hackberry	3.76	-564.56	579.79	-15.23	-1.89	-1.48	-1.48	-0.82	222.88
Hackberry	3.79	-590.97	-235.53	826.50	-1.03	-1.92	1.61	-1.02	280.73
Hackberry	3.84	-654.18	229.94	424.24	-1.20	-1.88	-0.64	-0.95	218.64

Negative Value = Structural Alternative is greater.
Positive Value = Non-structural Alternative is greater.

Table 4-4.19

Comparison of Hydraulic Parameters

Non-Structural Alternative to Stakeholder Alternative for Sonoran Wash

Existing Condition 100-year Discharge

Reach	X-sec	Difference in Discharge			Difference in Velocity			Difference in Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Sandy	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sandy	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sandy	1.09	0.84	-0.35	-0.49	0.00	0.01	0.00	0.00	-0.10
Sandy	1.15	1.41	-1.03	-0.38	0.00	0.00	0.00	0.00	-0.11
Main Stem	1.19	-4177.56	2163.69	2013.88	3.47	2.03	2.00	0.56	116.49
Main Stem	1.21	-4484.04	2983.55	1500.49	-2.59	1.11	-3.56	2.00	849.27
Main Stem	1.24981	--	--	--	--	--	--	--	--
Main Stem	1.25	-4324.79	2833.83	1490.96	-0.83	1.22	-2.62	1.45	807.65
Main Stem	1.29	-4424.23	1874.81	2549.43	1.71	3.98	-0.31	-0.26	740.42
Main Stem	1.32982	--	--	--	--	--	--	--	--
Main Stem	1.33	-5046.09	602.93	4443.16	1.71	2.75	-0.69	0.66	764.52
Main Stem	1.38	-5842.33	61.20	5781.13	0.53	1.64	-1.87	1.63	767.72
Main Stem	1.4798	--	--	--	--	--	--	--	--
Main Stem	1.48	-3906.61	1280.67	2625.94	-1.03	3.92	-4.29	2.64	608.97
Main Stem	1.56	-4147.84	2253.98	1893.86	0.90	3.39	-2.20	0.26	659.11
Main Stem	1.64981	--	--	--	--	--	--	--	--
Main Stem	1.65	-2184.47	1435.74	748.73	0.97	2.66	-3.30	3.45	650.94
Main Stem	1.678	--	--	--	--	--	--	--	--
Main Stem	1.69878	--	--	--	--	--	--	--	--
Main Stem	1.699	--	--	--	--	--	--	--	--
Main Stem	1.72	-1310.14	792.51	517.63	-2.54	-1.62	-2.59	0.33	561.86
Main Stem	1.77	-1385.62	386.82	998.80	-1.18	-1.25	-0.82	-0.61	588.91
Ironwood	1.84	-207.43	1782.67	-1575.24	0.57	-0.37	0.05	-1.00	461.68
Ironwood	1.90	156.97	1101.21	-1258.18	1.14	-1.00	-0.09	-0.57	334.61
Ironwood	1.99	-1089.29	0.00	1089.29	-1.61	0.00	-1.92	-0.16	851.73
Ironwood	2.08	-723.24	409.81	313.43	-0.71	-1.24	-0.75	-0.89	553.82

Table 4-4.19 Continued

Comparison of Hydraulic Parameters

Non-Structural Alternative to Stakeholder Alternative for Sonoran Wash

Existing Condition 100-year Discharge

Reach	X-sec	Difference in Discharge			Difference in Velocity			Difference in Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Ironwood	2.13	359.73	-447.28	87.55	2.65	-0.19	0.58	-0.85	457.17
Ironwood	2.19	-580.49	760.41	-179.92	-1.84	2.15	-1.75	0.03	1041.57
Ironwood	2.28	-803.17	449.85	353.32	-0.45	2.70	-0.93	-0.93	212.29
Ironwood	2.35	-1132.12	1248.30	-116.19	-0.47	-1.10	-1.14	-0.88	195.75
Ironwood	2.41	-1005.24	528.24	477.00	-1.15	-0.97	-1.00	-0.87	395.53
Ironwood	2.46	25.75	-585.37	559.62	2.12	0.24	1.15	-1.15	91.73
Ironwood	2.52	-295.06	-162.59	457.65	-0.21	-0.16	-0.44	-0.24	109.00
Ironwood	2.58	-312.41	-178.82	491.23	-0.48	-0.33	-1.26	-0.19	161.41
Ironwood	2.64	182.90	-39.92	-142.98	0.76	0.28	0.23	-0.31	0.04
Ironwood	2.69	17.82	-13.34	-4.49	0.10	0.03	0.06	-0.05	-2.27
Ironwood	2.73	12.19	-12.20	0.00	0.06	0.01	0.33	-0.01	-0.16
Ironwood	2.77	-0.72	0.72	0.00	-0.01	0.00	0.00	0.00	0.05
Ironwood	2.84	0.09	-0.06	-0.03	0.00	0.00	0.00	0.00	-0.01
Ironwood	2.88	17.11	-14.60	-2.52	0.15	0.06	0.05	-0.03	0.00
Ironwood	2.93	-4.25	3.07	1.18	-0.03	-0.03	-0.02	0.02	0.41
Ironwood	2.97	62.77	-52.04	-10.73	0.39	0.08	0.13	-0.09	0.00
Hackberry	3.05	-18.75	3.70	15.05	-0.12	-0.01	-0.05	0.06	1.48
Hackberry	3.10	-6.23	0.00	6.23	-0.04	0.00	-0.01	0.01	0.28
Hackberry	3.15	1.25	-0.27	-0.98	0.00	0.00	0.00	0.00	0.11
Hackberry	3.24	0.33	-0.33	0.00	0.00	0.00	0.00	0.00	-0.01
Hackberry	3.31	0.21	-0.14	-0.07	0.00	0.00	0.00	0.00	0.03
Hackberry	3.40	0.17	-0.07	-0.11	0.00	0.00	0.00	0.00	-0.01
Hackberry	3.46	0.66	-0.38	-0.28	0.00	-0.01	0.00	0.00	0.15
Hackberry	3.54	-0.13	0.03	0.11	0.00	0.00	0.00	0.00	0.01
Hackberry	3.61	1.92	-1.05	-0.87	0.00	-0.01	0.00	0.00	0.44

Table 4-4.19 Continued

Comparison of Hydraulic Parameters

Non-Structural Alternative to Stakeholder Alternative for Sonoran Wash

Existing Condition 100-year Discharge

Reach	X-sec	Difference in Discharge			Difference in Velocity			Difference in Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Hackberry	3.65	-0.25	0.03	0.20	0.00	-0.01	-0.01	0.00	0.25
Hackberry	3.70	-0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.05
Hackberry	3.73	2.25	-4.30	2.04	0.02	-0.03	0.00	0.00	6.57
Hackberry	3.76	0.78	-0.55	-0.24	0.00	-0.01	-0.02	0.01	1.71
Hackberry	3.79	5.64	-4.26	-1.38	0.03	-0.02	-0.01	0.00	5.09
Hackberry	3.84	-2.51	1.53	0.98	-0.02	0.00	-0.01	0.01	0.42

Negative Value = Stakeholder Alternative is greater.
Positive Value = Non-structural Alternative is greater.

Table 4-4.20

Comparison of Hydraulic Parameters

Non-Structural Alternative to Low Impact Structural Alternative for Sonoran Wash

Existing Condition 100-year Discharge

Reach	X-sec	Difference in Discharge			Difference in Velocity			Difference in Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Sandy	0.92	0.00	0.01	-0.01	0.00	0.00	0.00	0.00	0.00
Sandy	1.00	-100.78	173.10	-72.31	-0.16	-0.11	-0.08	0.01	139.61
Sandy	1.09	-13.91	128.01	-114.10	0.05	-0.40	-0.03	-0.05	128.93
Sandy	1.15	14.19	11.36	-25.54	0.07	-0.04	0.02	-0.03	47.16
Main Stem	1.21	-150.10	-136.76	286.86	-0.36	-0.28	-0.30	0.00	142.09
Main Stem	1.25	-156.86	61.94	94.92	-0.22	-0.21	-0.30	-0.10	383.78
Main Stem	1.29	34.87	12.41	-47.27	0.30	-0.25	-0.22	-0.12	215.09
Main Stem	1.33	-183.09	-47.03	230.11	-0.36	-0.44	-0.32	-0.04	197.35
Main Stem	1.38	-160.77	-19.65	180.42	-0.27	-0.17	-0.41	-0.12	203.26
Main Stem	1.48	-118.28	-124.27	242.55	-0.01	-0.59	-0.48	-0.14	212.91
Main Stem	1.56	-392.83	-344.26	737.09	-0.66	-0.62	-0.99	-0.14	361.23
Main Stem	1.65	-356.03	-714.68	1070.71	-0.01	-0.75	-0.72	-0.41	334.20
Main Stem	1.72	27.54	-445.21	417.67	0.45	-0.30	-1.38	-0.31	308.85
Main Stem	1.77	-584.33	-392.94	977.27	-0.82	-0.52	-0.27	-0.05	319.12
Ironwood	1.84	265.03	-268.57	3.54	0.94	-0.08	0.45	-0.28	76.68
Ironwood	1.90	250.16	-91.40	-158.76	0.84	-0.08	0.06	-0.17	89.55
Ironwood	1.99	-82.29	0.00	82.29	-0.27	0.00	-0.11	0.10	298.65
Ironwood	2.08	-306.14	-484.01	790.15	-0.64	-0.35	-0.27	-0.14	230.45
Ironwood	2.13	5.88	-170.76	164.88	0.64	-0.05	0.22	-0.30	358.97
Ironwood	2.19	-8.68	-12.90	21.58	-0.01	-0.02	-0.41	-0.02	793.92
Ironwood	2.28	20.81	-16.48	-4.33	0.12	-0.02	0.06	-0.04	0.14
Ironwood	2.35	-7.48	6.49	0.98	-0.04	-0.02	0.00	0.01	1.30
Ironwood	2.41	-0.30	0.08	0.22	0.00	0.00	0.00	0.00	0.02
Ironwood	2.46	143.84	-111.64	-32.19	0.71	0.18	0.21	-0.19	-3.15
Ironwood	2.52	-33.79	5.63	28.16	-0.12	-0.05	-0.04	0.07	0.96
Ironwood	2.58	-16.57	8.25	8.32	-0.07	-0.01	-0.03	0.02	1.06

Table 4-4.20 Continued

Comparison of Hydraulic Parameters

Non-Structural Alternative to Low Impact Structural Alternative for Sonoran Wash

Existing Condition 100-year Discharge

Reach	X-sec	Difference in Discharge			Difference in Velocity			Difference in Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Ironwood	2.64	5.74	-1.25	-4.49	0.03	0.01	0.01	-0.01	-0.19
Ironwood	2.69	0.30	-0.21	-0.09	0.01	0.00	0.00	0.00	-0.06
Ironwood	2.73	0.10	-0.11	0.00	0.00	0.00	0.00	0.00	0.00
Ironwood	2.77	-0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.07
Ironwood	2.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ironwood	2.88	13.06	-12.13	-0.94	0.12	0.05	0.05	-0.02	-0.16
Ironwood	2.93	-3.22	2.31	0.90	-0.02	-0.02	-0.01	0.02	0.32
Ironwood	2.97	42.25	-40.23	-2.02	0.28	0.05	0.13	-0.07	-0.79
Hackberry	3.05	-12.82	2.54	10.28	-0.08	-0.01	-0.04	0.04	1.02
Hackberry	3.10	-4.37	0.00	4.37	-0.03	0.00	-0.01	0.01	0.21
Hackberry	3.15	0.89	-0.20	-0.69	0.00	0.00	0.00	0.00	0.11
Hackberry	3.24	21.47	-21.47	0.00	0.04	-0.14	0.00	0.01	16.72
Hackberry	3.31	-282.64	355.98	-73.34	-0.63	-0.42	-0.36	-0.05	58.43
Hackberry	3.40	85.74	-46.94	-38.81	0.49	-0.73	0.18	-0.19	38.78
Hackberry	3.46	-5.16	1.47	3.68	-0.04	-0.01	-0.02	0.01	0.41
Hackberry	3.54	1.12	-0.19	-0.94	0.00	0.00	0.01	-0.01	-0.12
Hackberry	3.61	0.59	-0.58	-0.01	-0.01	-0.01	0.00	0.00	0.44
Hackberry	3.65	0.07	-0.03	-0.04	0.00	0.00	-0.01	0.00	0.25
Hackberry	3.70	-0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.05
Hackberry	3.73	2.25	-4.31	2.04	0.02	-0.03	0.00	0.00	6.57
Hackberry	3.76	0.78	-0.55	-0.24	0.00	-0.01	-0.02	0.01	1.71
Hackberry	3.79	5.13	-3.82	-1.31	0.03	-0.02	-0.01	0.00	5.09
Hackberry	3.84	-2.14	1.31	0.84	-0.02	0.00	-0.01	0.01	0.36

Negative Value = Team Alternative is greater.
Positive Value = Non-structural Alternative is greater.

4-4.9.3 Comparison of Hydraulic Model Results for Master Plan Alternatives Phase 2

4-4.9.3.1 Skunk Creek

The Phase 2 Reach of Skunk Creek commences at the Carefree Highway Bridge and extends upstream of the New River Road Bridge to River Mile 26.1. Master Plan Alternatives consisted of a Full Structural Alternative, a Low Impact Structural Alternative, and a Non-Structural Alternative.

Peak discharges utilized in the hydraulic evaluation of the Phase 2 reach are termed controlling peak discharges. The controlling peak discharge is the greater of either the existing condition peak discharge or future condition peak discharge. Upstream of River Mile 23.55 future condition peak discharge controls whereas downstream of River Mile 23.55 existing condition peak discharge controls. This is true for both the 100-year and 10-year events. Future condition peak discharges control for the 2-year events for both all Phase1 and Phase 2 reaches.

The Non-Structural Alternative is an alternative in which no encroachments into the 100-year floodplain are allowed. Flow rates in the base HEC-RAS model are revised to reflect the controlling peak discharges. The revised base HEC-RAS model characterizes the elements of the Non-Structural Alternative.

The Full Structural Alternative is characterized by allowing full encroachment into the floodway fringe and by channel improvements upstream and immediately downstream of the New River Road Bridge. Channel improvements consists of increasing the conveyance of the channel by increasing the width and providing levees to direct flow to the improved channel segment. The bottom width of the channel downstream of the bridge is increased to match the dimensions of the bridge and then transitions downstream to the natural channel. The bottom width upstream of the bridge is increased to a dimension that allows the flow from a 100-year event to be contained within the channel.

The Low Impact Structural Alternative is an alternative that allows partial encroachment in the watercourse. The Lateral Migration Erosion Hazard Zone defines encroachment limits. Another element of the Low Impact Structural Alternative is channel improvement at the New River Road Bridge. Channel improvements consist of increasing the channel width downstream of the bridge to the dimensions of the bridge, transitioning the improved channel downstream to the

natural channel dimensions and removing the accumulation of sediment within the bridge and upstream of the bridge.

Table 4-4.21 lists a summary of results for selected hydraulic parameters for the Non-Structural Alternative. Table 4-4.22, and Table 4-4.23 lists a summary of results for selected hydraulic parameters for the Full Structure Alternative and the Low Impact Alternative, respectively.

Results of the hydraulic models for the Full Structure Alternative and the Low Impact Structural Alternative are compared to results of the hydraulic model for the Non-Structural Alternative to determine the impact of the alternative on the hydraulic properties of the watercourse. Tables 4-4.24, 4-4.25 list the results of the comparison of the Non-Structural model with the Full Structure Alternative, and the Low Impact Structural Alternative, respectively. Results of the comparison between no encroachment to full encroachment or partial encroachment (as with other previously discussed comparisons) indicate that there is a reduction in floodplain width at locations of encroachment into the floodway fringe along with an increase in flow velocity and depth. The greater the encroachment the greater the change in channel velocity and depth. For both the Full Structural alternative and the Low Impact Structural Alternative channel improvements proposed in the vicinity of the New River Road Bridge has increased the conveyance capacity of the bridge. Channel improvements proposed with the full Structural Alternative eliminates flow breakout upstream of the bridge.

Table 4-4.21

Summary of Hydraulic Parameters

Base HEC-RAS Model for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Carefree	16.86	27300	0	0	14.93	0	0	8.17	554.69
Carefree	16.87	27300	0	0	7.59	0	0	15.33	1921.01
Carefree	16.96	26565.58	22.89	711.53	10.77	2.48	1.89	9.74	1561.03
Carefree	17.06	14638.28	10728.29	1933.43	11.31	5.63	3.08	11.81	1052.38
Carefree	17.18	8653.72	1862.46	16783.81	13.26	4.11	9.54	9.08	857.16
Carefree	17.3	14371.53	6197.82	6730.65	12.82	5.67	4.33	9.06	1035.58
Carefree	17.39	20330.53	1202.8	5766.67	11.98	4.42	4.8	9.15	1085.47
Carefree	17.48	15296.96	5583.56	6419.49	12	5.61	6.18	7.29	962.95
Carefree	17.57	17467.89	5490.01	4342.09	12.55	4.78	5.16	11.78	889.93
Carefree	17.65	14525.18	9894.52	2880.31	13.19	5.66	3.65	13.15	903.74
Carefree	17.78	9816.27	4885.59	12598.14	12	5.58	6.64	8.48	948.92
Carefree	17.84	14820.57	1270.95	11208.48	11.58	5.23	7.03	6.46	965.82
Carefree	17.95	15434.28	615.87	11249.85	12.88	4.83	6.49	7.86	900.3
Carefree	18.09	8579.34	1490.64	17630.02	8.78	3.97	4.88	11.34	1505.49
Skunk Tank	18.16	7573.37	5010.85	15115.79	13.31	5.98	7.94	8.04	988.75
Skunk Tank	18.23	9848.84	12181.18	5669.98	13.6	6.62	3.56	11.85	1317.02
Skunk Tank	18.29	10589.78	10453.52	6656.7	9.56	5.77	4.72	11.26	1144.34
Skunk Tank	18.49	7086.73	10158.83	10454.44	14.95	9.66	7.38	8.72	826.2
Skunk Tank	18.57	9450.36	13734.98	4514.66	12.6	7.9	3.36	11.4	942.5

Table 4-4.21 Cont.

Summary of Hydraulic Parameters

Base HEC-RAS Model for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Skunk Tank	18.74	4457.79	20960.92	1881.29	9.11	7.62	4.36	11.19	1149.99
Skunk Tank	18.84	7881.43	17348.92	2069.65	9.83	7.58	6	10.08	1098.3
Skunk Tank	18.96	9756.38	10072.53	7471.08	12.2	6.25	4.87	9.23	1436.9
Skunk Tank	19.07	7836.09	13474.65	5989.26	9.01	5.21	3.71	11.57	1627.06
Skunk Tank	19.18	11454.4	15845.59	0	12.67	7.53	0	10.79	841.58
Skunk Tank	19.26	5563.09	19502.71	2234.2	12.17	6.68	7.07	13.35	1602.98
Skunk Tank	19.41	5380.2	5080.87	16838.93	7.68	4.84	5.75	8.9	1058.72
Skunk Tank	19.52	5914.82	2219.04	19166.13	12.41	8.56	8.09	9.11	713.8
Skunk Tank	19.62	5160.7	0	22139.3	10.2	0	7.36	10.58	778.61
Skunk Tank	19.72	7721.93	4945.76	14632.31	10.97	7.71	7.5	9.99	762.21
Skunk Tank	19.83	12131.95	5862.45	9305.6	12.71	6.94	7.2	11.34	704.04
Cobbled Bank	19.92	8744.47	8487.87	10067.65	11.3	4.71	6.04	13.28	1250.19
Cobbled Bank	20.05	4125.58	9351.32	13823.11	10.34	5.04	6.85	9.27	1030.84
Cobbled Bank	20.16	4175.73	6490.07	16634.2	12.06	5.43	9.96	9.23	1112.15
Cobbled Bank	20.26	5667.7	10980.25	10652.05	9.97	6.05	9.89	8.75	1176.69
Cobbled Bank	20.38	3379.11	15662.05	8258.84	8.56	5.74	6.51	10	1251.35
Cobbled Bank	20.48	8132.52	9472.94	9694.54	13.11	5.17	7.64	8.65	1280.28
Rodger Creek	20.62	8423.12	12313.78	6563.1	13.2	6.51	5.07	9.19	1226.45
Rodger Creek	20.64	8550.26	13265.56	5484.18	8.98	5.73	4.53	7.86	1296.34
Rodger Creek	20.71	11070.3	11404.01	4825.69	12.16	5.27	4.32	10.22	1434.28

Table 4-4.21 Cont.

Summary of Hydraulic Parameters

Base HEC-RAS Model for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Rodger Creek	20.79	12205.2	11929.81	3164.99	9.37	5.7	3.69	9.16	1505.07
Rodger Creek	20.9	14143.6	7916.19	5240.22	11.91	4.54	4.86	10.08	1522.79
Rodger Creek	20.98	16772.84	9553.38	973.78	11.78	4.58	2.72	13.16	1374.15
Rodger Creek	21.05	16093.57	10484.44	721.99	12.31	4.49	2.49	12.12	1303.6
Rodger Creek	21.11	17220.28	9321.02	758.7	12.46	4.46	3.93	11.48	1023.32
Rodger Creek	21.18	15093.34	11738.73	467.93	12.27	4.54	3.24	11.05	1446.85
Rodger Creek	21.25	15535.71	9656.69	2107.6	12.05	3.91	2.62	12.45	1474.07
Rodger Creek	21.31	12915.83	14032.87	351.3	12.51	5.14	3.03	11.75	947.83
Rodger Creek	21.35	9857.58	17130.75	311.67	16.25	5.96	3.44	12.1	847.97
Rodger Creek	21.41	5346.98	20950.19	1002.83	16.3	6.35	4.4	13.17	856.68
Rodger Creek	21.49	12037.86	7679.66	7582.48	10.5	5.63	7.38	9.45	731.25
Rodger Creek	21.58	6553.71	13882.88	6863.41	8.89	6.87	5.3	8.82	1308.85
Rodger Creek	21.63	7830.54	13641.12	5828.34	11.8	6.38	5.17	10.37	1405.56
Rodger Creek	21.69	4000.42	19811.34	3488.24	8.25	5.43	4.37	12.14	1419.88
Rodger Creek	21.77	6705.27	19765.56	829.18	12.92	9.11	4.11	10.48	929.09
Rodger Creek	21.82	8345.78	17580.86	1373.36	11.4	6.72	4.49	9.18	1179.45
Rodger Creek	21.91	4696.34	21632.46	971.2	9.06	7.18	2.78	11.78	1122.59
Rodger Creek	21.99	6631.85	19633.54	1034.61	10.39	7.21	3.84	7.86	1401.68
Rodger Creek	22.08	4778.68	21207.19	1314.13	8.05	6.24	3.14	9.35	1542.91
Rodger Creek	22.15	3029.7	24248.69	21.61	8.61	7.89	2.46	10.19	1189.61

Table 4-4.21 Cont.

Summary of Hydraulic Parameters

Base HEC-RAS Model for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Rodger Creek	22.22	4406.57	22883.56	9.87	10.33	9.66	1.19	10.69	773.04
Rodger Creek	22.29	3076.45	23759.63	463.91	8.65	8.27	1.86	9.76	1218.79
Rodger Creek	22.36	4501.67	21591.17	1207.15	9.85	9.85	6.41	11.69	1042.24
Rodger Creek	22.43	3397.21	21175.98	2726.81	7.56	6.18	5.15	8	1320.49
Rodger Creek	22.48	7854.38	16646.28	2799.34	11.88	9.06	6.62	8.77	1351.09
Rodger Creek	22.56	8059.97	17246.12	1993.91	9.69	7.23	4.61	9.86	1101.1
Rodger Creek	22.67	11628.09	14592.29	1079.61	13.96	7.71	6.75	9.44	718.14
Rodger Creek	22.73	9058.35	17947.77	293.88	14.86	6.31	2.95	11.19	915.33
Cline Creek	22.79	13597.98	12978.02	724	12.24	5.2	2.85	11.2	1007.06
Cline Creek	22.86	8362.94	12236.68	3800.38	14.06	5.82	5.58	10.94	970.67
Cline Creek	22.96	10041.6	14358.4	0	13.9	5.08	0	14.67	914.06
Cline Creek	23.13	12262.13	8647.68	3490.19	13.86	7.17	3.86	11.41	790.24
Cline Creek	23.25	11251.65	3834.81	9313.54	13.64	5.38	5.55	10.1	745.9
Cline Creek	23.33	5945.47	851.45	17603.09	13.11	3.18	9.25	11.89	600.4
Cline Creek	23.45	3411.66	5339.97	15648.37	13	7.16	8.67	10.35	616.7
Cline Creek	23.55	10084.46	10670.43	3645.11	10.71	7.69	5.25	7.75	782.6
Cline Creek	23.64	4548.67	7130.02	908.31	11.42	4.69	2.89	9.28	763.51
Shangri-La	23.87	8230.74	3887.3	468.96	11.78	5.09	2.26	9.99	551.91
Shangri-La	23.94	8661.13	3184.01	741.86	8.78	4.52	3.32	11.64	631.97
Shangri-La	24.03	3801.72	2165.52	6619.76	8.4	5.15	6.08	7.58	651.91

Table 4-4.21 Cont.

Summary of Hydraulic Parameters

Base HEC-RAS Model for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Shangri-La	24.12	11141.25	839.33	606.42	10.89	3.71	4.38	8.72	453.39
Shangri-La	24.25	5297.42	295.62	6243.96	9.74	2.38	6.63	11.12	549.07
Shangri-La	24.38	7253.38	2137.29	2446.33	9.87	5.29	5.24	7.66	428.13
Shangri-La	24.48	6293.85	5446.25	96.89	11.56	6.95	2.63	6.89	472.15
Shangri-La	24.61	6380.45	4816.1	640.45	10.5	4.61	2.73	10.25	715.7
Shangri-La	24.74	8588.99	1919.61	1328.4	9.74	3.86	3.16	10.74	712.74
Shangri-La	24.87	6140.05	865.2	1805.75	9.79	2.89	5.86	7.68	538.62
Shangri-La	24.95	5101.44	135.35	3574.21	7.53	2.41	4.93	7.95	363.16
New River Road	25.12	8497.19	0	313.81	13.02	0	3.48	8.65	464.7
New River Road	25.28	4939.57	3871.43	0	8.09	3.64	0	10.73	635.9
New River Road	25.38	2633.96	3211.69	2965.35	5.72	3.17	4.44	6.91	1280.58
New River Road	25.45	1362.33	0	7448.67	7.79		7.55	7.65	1058.72
New River Road	25.56	1134.22	514.47	7162.31	6.3	2.28	7.05	10.2	1298.04
New River Road	25.63	1505.43	13.54	7292.03	7.62	2.23	7.75	9.37	674.16
New River Road	25.69	520.52	265	8025.48	3.63	2.35	4.25	7.38	1307.49
New River Road	25.73	8810.58	0	0.42	10.98	0	1.08	8.16	1798.5
New River Road	25.74	8811	0	0	4.59	0	0	13.54	2083.86
New River Road	25.78	8811	0	0	7.98	0	0	9.58	1905
New River Road	25.83	5940.93	0	2870.07	10.46		5.18	9.07	2119.74
New River Road	25.95	4363.13	424.63	4023.24	9.71	4.73	4.76	10.29	2056.81
New River Road	26.17	5622.24	0.19	3188.57	10.12	1.04	4.08	10.99	597.1
			0						

Table 4-4.22

Summary of Hydraulic Parameters

Full Structural Alternative for Skunk Creek Phase 2

100-year Controlling Peak Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Carefree	16.86	27300	0	0	14.78	0	0	8.23	270.22
Carefree	16.87	27300	0	0	7.58	0	0	15.34	295.5
Carefree	16.96	27102.59	22.18	175.23	11.1	2.5	2.76	9.67	456
Carefree	17.06	17237.71	7524.35	2537.95	13	5.35	3.81	12	870
Carefree	17.18	8693.02	1884.55	16722.43	13.42	4.61	9.82	9.02	755.01
Carefree	17.3	14475.21	6199.73	6625.06	13.02	6.34	4.41	8.99	922
Carefree	17.39	20723.61	1235.29	5341.11	12.32	4.91	5.39	9.1	713
Carefree	17.48	15725.66	5828.51	5745.83	12.28	5.86	6.74	7.31	851.08
Carefree	17.57	17846.72	5130.29	4322.99	12.83	4.86	6.06	11.78	746.55
Carefree	17.65	14647.11	9864.37	2788.52	13.35	5.76	3.86	13.1	846.3
Carefree	17.78	9746.2	4932.45	12621.35	11.82	5.63	6.56	8.54	934.85
Carefree	17.84	14963.67	1249.14	11087.19	11.75	5.38	7.31	6.43	905
Carefree	17.95	15539.04	608.74	11152.22	13.09	4.89	6.67	7.8	774.67
Carefree	18.09	9830.71	1140.54	16728.75	9.77	4.81	6.46	11.53	715
Skunk Tank	18.16	7886.03	5518.2	14295.78	12.94	6.18	8.97	8.49	651.41
Skunk Tank	18.23	11271.08	12588.72	3840.2	15.15	7.78	4.74	12.1	700
Skunk Tank	18.29	10893.91	10272.23	6533.86	8.96	5.7	5.42	12.05	700
Skunk Tank	18.49	7877.77	9791.21	10031.02	15.29	11.46	7.06	9.29	643
Skunk Tank	18.57	10029.19	12338.06	5332.76	12.49	8.23	3.76	11.96	780
Skunk Tank	18.74	4694.42	21187.95	1417.63	9.29	7.79	5.71	11.39	745
Skunk Tank	18.84	9719.13	14821.53	2759.34	11.39	8.4	7.74	10.5	564

Table 4-4.22 Cont.

Summary of Hydraulic Parameters

Full Structural Alternative for Skunk Creek Phase 2

100-year Controlling Peak Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Skunk Tank	18.96	10231.9	7665.2	9402.9	11.79	6.47	5.95	9.93	841
Skunk Tank	19.07	8790.14	14943.64	3566.22	9.69	6.18	5.01	11.95	830
Skunk Tank	19.18	11793.09	15506.9	0	12.93	7.88	0	10.85	748.84
Skunk Tank	19.26	5724.9	20205.57	1369.53	12.29	6.94	7.51	13.55	635
Skunk Tank	19.41	5458.28	4735.2	17106.52	7.63	5.04	5.75	9.04	950
Skunk Tank	19.52	5903.59	2215.29	19181.12	12.36	8.68	8.07	9.12	680
Skunk Tank	19.62	5159.68	0	22140.32	10.2	0	7.37	10.58	746.81
Skunk Tank	19.72	7779.41	4592.64	14927.95	11.05	7.95	7.68	9.99	725
Skunk Tank	19.83	12245.39	5307.99	9746.62	12.75	7	7.46	11.39	650
Cobbled Bank	19.92	9750.25	5791.21	11758.54	12.29	5.61	6.69	13.55	683.31
Cobbled Bank	20.05	3960.99	9559.24	13779.77	9.42	4.68	6.29	9.64	1038.31
Cobbled Bank	20.16	4214.61	6274.27	16811.12	12.13	5.6	10.01	9.25	1068.39
Cobbled Bank	20.26	5848.91	10416.99	11034.11	10.13	6.09	10.09	8.81	1145.4
Cobbled Bank	20.38	3446.84	15492.95	8360.21	8.55	5.75	6.47	10.09	1189.81
Cobbled Bank	20.48	9211.68	8082	10006.32	13.72	5.18	9.24	9.2	906
Rodger Creek	20.62	9440.35	12267.64	5592.01	13.74	7.84	5.23	9.77	885
Rodger Creek	20.64	10532.58	11939.26	4828.17	9.97	7.07	5.05	8.48	850
Rodger Creek	20.71	13213.12	11262.51	2824.37	13.48	7.07	4.6	10.78	810
Rodger Creek	20.79	16796.8	10503.2	0	11.13	6.89	0	9.97	660
Rodger Creek	20.9	16986.66	8131.43	2181.91	13.65	5.93	5.34	10.43	670
Rodger Creek	20.98	18350.69	8949.32	0	12.75	5.32	0	13.24	670
Rodger Creek	21.05	17818.1	9047.64	434.26	13.54	5.1	5.21	12.18	695

Table 4-4.22 Cont.

Summary of Hydraulic Parameters

Full Structural Alternative for Skunk Creek Phase 2

100-year Controlling Peak Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Rodger Creek	21.11	18140.24	8397.94	761.82	13	4.74	5.53	11.56	775
Rodger Creek	21.18	15822.85	11477.15	0	12.89	4.89	0	11.03	900
Rodger Creek	21.25	17760.92	9539.08	0	13.58	4.47	0	12.59	745
Rodger Creek	21.31	14186.93	12437.63	675.45	12.66	5.19	4.59	12.55	650
Rodger Creek	21.35	9793.41	16984.05	522.54	15.22	5.88	3.7	12.77	705
Rodger Creek	21.41	5529.86	20591.42	1178.72	16.84	6.98	5.39	13.18	600
Rodger Creek	21.49	11791.58	7647.27	7861.15	10.01	5.43	7.38	9.63	700
Rodger Creek	21.58	8779.04	10937.43	7583.52	11.64	7.09	10.21	7.73	840
Rodger Creek	21.63	7463.23	12387.65	7449.11	9.86	5.28	6.53	10.76	1055
Rodger Creek	21.69	5073.26	17661.98	4564.77	10.16	5.96	5.4	8.31	1330
Rodger Creek	21.77	6475.23	19598.3	1226.47	11.17	7.17	4.53	11.16	1357.72
Rodger Creek	21.82	9062.14	16731.71	1506.15	12.62	7.27	5.29	9.07	1087.96
Rodger Creek	21.91	5648.15	21651.85	0	9.76	7.45	0	12.39	1031.03
Rodger Creek	21.99	7516.6	19783.4	0	10.53	6.82	0	8.44	1219.14
Rodger Creek	22.08	5706.77	20358.5	1234.73	8.9	7.45	4.32	9.73	1125
Rodger Creek	22.15	3905.66	23322.05	72.28	9.54	8.42	3.52	10.83	968.69
Rodger Creek	22.22	4513.14	22786.86	0	9.67	10.07	0	11.12	668.53
Rodger Creek	22.29	3670.64	23609.51	19.84	9.67	8.66	1.33	10.11	859.25
Rodger Creek	22.36	4660.07	22639.93	0	9.12	9.33	0	12.19	781.87
Rodger Creek	22.43	6208.01	20657.15	434.83	11.67	7.47	3.8	8.23	918
Rodger Creek	22.48	10065.95	17234.05	0	11.47	8.09	0	9.09	723
Rodger Creek	22.56	9485.74	17723.75	90.51	10.61	8.01	3.17	10.36	635

Table 4-4.22 Cont.

Summary of Hydraulic Parameters

Full Structural Alternative for Skunk Creek Phase 2

100-year Controlling Peak Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Rodger Creek	22.67	12815.09	14484.91	0	14.36	7.96	0	9.94	575
Rodger Creek	22.73	10788.39	16511.61	0	16.32	7.32	0	11.98	531
Cline Creek	22.79	14651.9	11479.54	1168.55	11.54	5.5	3.29	12.42	660
Cline Creek	22.86	8328.52	11813.22	4258.25	13.23	6.16	5.69	11.46	742
Cline Creek	22.96	11825.31	12574.69	0	16.01	5.71	0	14.93	514.83
Cline Creek	23.13	12794.28	8968.52	2637.2	13.22	7.74	3.65	12.3	561
Cline Creek	23.25	14785.22	1864.23	7750.55	16.55	7.87	7.55	10.81	334
Cline Creek	23.33	6175.25	0	18224.75	11.12	0	8.64	13.77	331
Cline Creek	23.45	3434.12	5867.17	15098.72	13.38	9.93	8.9	10.21	465
Cline Creek	23.55	12760.84	7979.66	3659.51	12.41	8.63	6.1	8.31	467
Cline Creek	23.64	3896.95	7767.37	922.68	8.86	3.93	2.54	10.13	662
Shangri-La	23.87	9210.11	3376.89	0	12.68	4.94	0	10.31	353
Shangri-La	23.94	8804.56	3517.54	264.89	8.19	4.09	3.7	12.27	500
Shangri-La	24.03	7080.23	480.28	5026.49	14.01	7.11	10.16	8.16	223
Shangri-La	24.12	11594.52	992.47	0	9.21	5.34	0	10.23	207
Shangri-La	24.25	6074.35	0	5762.65	11.23	0	7.6	11.07	248
Shangri-La	24.38	7787.38	2064.61	1985.01	9.58	5.77	5.82	8.33	266
Shangri-La	24.48	8929.89	2907.1	0	13.52	7.11	0	8.09	214
Shangri-La	24.61	11837	0	0	14.99	0	0	12.55	79
Shangri-La	24.74	11837	0	0	9.41	0	0	13.75	125
Shangri-La	24.87	8206.94	358.36	245.7	11.02	4.4	6.28	8.77	151
Shangri-La	24.95	8100.78	645.44	64.78	9.4	4.65	3.39	9.46	180

Table 4-4.22 Cont.

Summary of Hydraulic Parameters

Full Structural Alternative for Skunk Creek Phase 2

100-year Controlling Peak Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
New River Road	25.12	8470.06		340.94	12.75		3.57	8.76	155.85
New River Road	25.28	6425.51	2385.49		9.9	5.44		11.17	190.77
New River Road	25.38	3395.68	1538.82	3876.5	5.39	2.7	3.95	8.06	646
New River Road	25.45	2276.64		6534.36	10.29		6.5	7.29	632
New River Road	25.56	1127.69	561.16	7122.15	5.76	2.19	6.22	10.37	807.77
New River Road	25.63	5433.01	0.37	3377.62	8.04	1.04	7.18	5.73	413.16
New River Road	25.69	8811			7.82			3.58	321.78
New River Road	25.73	8811			10.91			3.93	214.8
New River Road	25.74	8811			6.52			6.41	221
New River Road	25.78	8811			6.95			7.07	193.29
New River Road	25.83	8811			13.04			8.43	126
New River Road	25.95	6938.29	1777.87	94.84	11.79	8.33	4.2	10.95	141
New River Road	26.17	8811			14.24			11.65	96

Table 4-4.23

Summary of Hydraulic Parameters

Low Impact Structural Alternative for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Discharge			Velocity				
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank	Channel Depth of Flow	Top Width
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Carefree	16.86	27300	0	0	14.93	0	0	8.17	269.97
Carefree	16.87	27300	0	0	7.59	0	0	15.33	1411.37
Carefree	16.96	27095.79	22.09	182.12	11.1	2.5	2.01	9.67	1207.83
Carefree	17.06	15112.13	10322.5	1865.36	11.46	5.7	3.24	11.96	902.81
Carefree	17.18	8643.15	1938.47	16718.38	13.26	4.37	9.66	9.07	791.99
Carefree	17.3	14367.16	6293.98	6638.86	12.88	6.07	4.37	9.02	961.13
Carefree	17.39	20681.93	1206.79	5411.29	12.22	4.48	5.36	9.13	905.81
Carefree	17.48	15553.39	5793.57	5953.04	12.14	5.77	6.64	7.32	870.19
Carefree	17.57	17671.02	5391.32	4237.66	12.77	4.89	5.97	11.73	769.14
Carefree	17.65	14607.17	9882.31	2810.52	13.29	5.7	3.83	13.12	862.79
Carefree	17.78	9758.77	4939.72	12601.52	11.86	5.57	6.58	8.52	946.1
Carefree	17.84	14936	1260.98	11103.03	11.72	5.29	7.28	6.44	916.23
Carefree	17.95	15509.56	609.32	11181.11	13.05	4.88	6.58	7.81	819.51
Carefree	18.09	9532.68	1673.05	16494.28	9.5	4.48	5.92	11.51	920.33
Skunk Tank	18.16	7353.69	5251.4	15094.91	12.24	5.64	7.9	8.4	810.89
Skunk Tank	18.23	10772.8	13426.29	3500.91	14.83	7.32	4.4	11.88	804.72
Skunk Tank	18.29	10708.93	11016.23	5974.84	9.17	5.63	5.72	11.7	712.85
Skunk Tank	18.49	7081.83	10155.04	10463.13	14.92	9.65	7.37	8.73	826.49
Skunk Tank	18.57	9454.57	13738.63	4506.8	12.61	7.91	3.36	11.39	942.36
Skunk Tank	18.74	4453.03	20938.7	1908.27	9.1	7.61	4.85	11.19	876.22
Skunk Tank	18.84	7882.45	17349.04	2068.51	9.84	7.58	6	10.07	701.99

Table 4-4.23 Cont.

Summary of Hydraulic Parameters

Low Impact Structural Alternative for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Skunk Tank	18.96	10050.95	10179.16	7069.89	12.67	6.44	5.85	9.16	1018.88
Skunk Tank	19.07	8470.7	15472.61	3356.69	9.42	5.54	4.75	11.87	1060.95
Skunk Tank	19.18	11435.18	15864.82	0	12.63	7.51	0	10.8	841.74
Skunk Tank	19.26	5569.53	19498.79	2231.68	12.19	6.69	7.08	13.34	840.13
Skunk Tank	19.41	5480.37	4637.82	17181.81	7.78	5.08	5.82	8.93	988.33
Skunk Tank	19.52	5882.94	2230.17	19186.89	12.26	8.45	8	9.16	709.39
Skunk Tank	19.62	5130.22	0	22169.78	10.22	0	7.61	10.51	698.88
Skunk Tank	19.72	7691.54	4919.23	14689.23	10.95	7.68	7.56	9.98	751.51
Skunk Tank	19.83	12072.04	5806	9421.96	12.68	6.91	7.35	11.32	690.51
Cobbled Bank	19.92	9657.42	6241.58	11401	12.31	5.73	6.64	13.43	716.21
Cobbled Bank	20.05	3976.57	9544.64	13778.79	9.51	4.7	6.35	9.6	1055.55
Cobbled Bank	20.16	4197.24	6409.59	16693.18	12.17	5.53	10.07	9.21	1083.78
Cobbled Bank	20.26	5981.06	10178.19	11140.75	10.27	6.13	10.08	8.84	1137.42
Cobbled Bank	20.38	3426.45	15466.63	8406.92	8.43	5.68	6.37	10.13	1213.07
Cobbled Bank	20.48	8915.82	7082.82	11301.36	13.62	4.96	7.99	9.02	1058.4
Rodger Creek	20.62	9217.3	10789.19	7293.51	13.76	7.63	5.51	9.57	931.5
Rodger Creek	20.64	9511.93	11271.65	6516.41	9.15	6.46	4.87	8.38	960.12
Rodger Creek	20.71	11704.29	10777.04	4818.67	12.92	6.58	4.61	10.18	1064.71
Rodger Creek	20.79	13346.81	10084.75	3868.45	9.65	6.03	3.93	9.47	1127.91
Rodger Creek	20.9	14596.85	7524.33	5178.82	12.5	5.24	5.07	9.96	1002.53
Rodger Creek	20.98	17703.52	8426.69	1169.79	12.27	5.09	2.98	13.26	997.36

Table 4-4.23 Cont.

Summary of Hydraulic Parameters

Low Impact Structural Alternative for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Rodger Creek	21.05	16680.21	9560.13	1059.66	12.4	4.81	3.08	12.37	937.62
Rodger Creek	21.11	17584.19	8952.46	763.35	12.77	4.67	4.02	11.45	886.94
Rodger Creek	21.18	15806.72	11005.65	487.62	12.86	4.75	3.39	11.04	991.03
Rodger Creek	21.25	15710.22	9633.76	1956.02	12.2	3.97	2.86	12.43	1278.6
Rodger Creek	21.31	12695.83	14214.6	389.57	12.18	5.25	3.19	11.84	862.74
Rodger Creek	21.35	9948.32	17044.73	306.95	16.44	6.07	3.47	12.07	779.89
Rodger Creek	21.41	5343.81	20861.57	1094.62	16.23	6.5	4.75	13.21	738.21
Rodger Creek	21.49	12016.26	7710.85	7572.89	10.45	5.64	7.34	9.47	722.3
Rodger Creek	21.58	6568.54	13399	7332.45	8.98	6.95	6.25	8.78	1123.25
Rodger Creek	21.63	7695.05	13497.23	6107.71	11.56	6.26	5.44	10.39	1334.87
Rodger Creek	21.69	4023.14	19771.37	3505.48	8.36	5.48	4.45	12.1	1415.97
Rodger Creek	21.77	6685.23	19749.32	865.45	12.84	9.05	4.29	10.5	922.52
Rodger Creek	21.82	8368.76	17562.77	1368.47	11.47	6.75	4.51	9.17	1177.46
Rodger Creek	21.91	4691.47	21632.07	976.46	9.03	7.16	2.78	11.79	1123.25
Rodger Creek	21.99	6637.78	19630.56	1031.66	10.41	7.22	3.85	7.85	1399.71
Rodger Creek	22.08	4838.77	21115.79	1345.44	8.12	6.33	3.18	9.36	1517.13
Rodger Creek	22.15	3083.13	24194.05	22.82	8.72	8.24	2.51	10.21	1047.71
Rodger Creek	22.22	4389.07	22898.34	12.59	10.13	9.48	1.24	10.76	788.57
Rodger Creek	22.29	3095.27	23772	432.73	8.76	8.46	1.84	9.72	1180.38
Rodger Creek	22.36	4486.04	21597.95	1216.02	9.72	9.72	6.33	11.74	996.82
Rodger Creek	22.43	3385.28	21114.55	2800.17	7.58	6.23	5.37	7.98	1301.03

Table 4-4.23 Cont.

Summary of Hydraulic Parameters

Low Impact Structural Alternative for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Rodger Creek	22.48	7854.38	16646.28	2799.34	11.88	9.06	6.62	7.77	1061.34
Rodger Creek	22.56	8465.88	16709.31	2124.8	10.11	7.92	4.84	9.9	960.22
Rodger Creek	22.67	11624.8	14595.05	1080.15	13.95	7.71	6.75	9.44	718.22
Rodger Creek	22.73	9571.26	17273.78	454.96	15.33	6.76	3.59	11.41	765.98
Cline Creek	22.79	14655.3	11740.66	904.04	12.75	5.78	3.06	11.49	792.04
Cline Creek	22.86	8295.82	11986.26	4117.92	13.31	6.17	5.68	11.36	754.47
Cline Creek	22.96	11593.35	12806.65	0	15.87	5.78	0	14.8	531.88
Cline Creek	23.13	11022.67	9916.05	3461.28	11.85	7.48	3.43	11.9	698.78
Cline Creek	23.25	11490.23	3685.95	9223.82	14.19	5.47	5.7	9.95	744.17
Cline Creek	23.33	5888.44	964.3	17547.26	12.78	3.26	9.07	12.02	594.87
Cline Creek	23.45	3436.22	5173.98	15789.8	13.31	7.45	8.92	10.25	570.67
Cline Creek	23.55	10761.95	11557.89	2080.17	11.2	8.06	5.09	7.87	722.08
Cline Creek	23.64	4298.04	7370.55	918.4	10.41	4.38	2.69	9.57	805.75
Shangri-La	23.87	8248.45	3874.07	464.48	11.83	5.11	2.37	9.98	523.05
Shangri-La	23.94	8631.32	3187.4	768.27	8.74	4.51	3.43	11.65	623.28
Shangri-La	24.03	4580.36	599.65	7406.99	10.14	4.31	7.73	7.57	454.51
Shangri-La	24.12	11431.43	739.37	416.2	11.25	4.51	5.25	8.68	310.68
Shangri-La	24.25	5281.52	361.36	6194.12	9.54	2.5	6.84	11.26	406.84
Shangri-La	24.38	7295.61	2152.14	2389.26	9.92	5.32	5.47	7.67	359.51
Shangri-La	24.48	6293.85	5446.25	96.89	11.56	6.95	2.63	6.89	472.15
Shangri-La	24.61	6436.29	4753.15	647.57	10.58	4.91	2.75	10.26	597.58

Table 4-4.23 Cont.

Summary of Hydraulic Parameters

Low Impact Structural Alternative for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Discharge			Velocity			Channel Depth of Flow	Top Width
		Channel (cfs)	Left Over Bank (cfs)	Right Over Bank (cfs)	Channel (fps)	Left Over Bank (fps)	Right Over Bank (fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Shangri-La	24.74	9043.9	1378.88	1414.22	10.38	4.17	3.76	10.65	528.76
Shangri-La	24.87	5977.52	932.82	1900.66	9.41	2.89	6.48	7.76	509.57
Shangri-La	24.95	5125.52	123.03	3562.45	7.67	2.36	5.01	7.88	362.72
New River Road	25.12	8497.29	0	313.71	13.02	0	3.48	8.65	437.69
New River Road	25.28	4939.57	3871.43	0	8.09	3.64	0	10.73	626.91
New River Road	25.38	2633.57	3211.47	2965.96	5.71	3.17	4.44	6.91	1221.84
New River Road	25.45	1362.14	0	7448.86	7.79	0	7.56	7.64	1028.44
New River Road	25.56	1123.97	494.16	7192.87	6.29	2.26	7.26	10.18	1194
New River Road	25.63	4143.7	0.11	4667.19	6.22	0.43	5.94	8.98	702.38
New River Road	25.69	3276.2	0	5534.8	4.18	0	4.69	4.51	977.34
New River Road	25.73	8811	0	0	10.91	0	0	3.93	214.8
New River Road	25.74	8811	0	0	6.52	0	0	6.41	230.1
New River Road	25.78	8811	0	0	6.95			7.07	950.32
New River Road	25.83	5935.17	0	2875.83	10.44	0	5.18	8.08	1388.49
New River Road	25.95	4368.34	423.44	4019.21	9.73	4.73	4.77	8.98	800.05
New River Road	26.17	5622.24	0.19	3188.57	10.12	1.04	4.08	10.99	520.18

Table 4-4.24

Comparison of Hydraulic Parameters

Base HEC-RAS Model (Non-Structural Alternative) to Structural Alternative for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Difference in Discharge			Difference in Velocity			Difference in Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Carefree	16.86	0	0	0	0.15	0	0	-0.06	284.47
Carefree	16.87	0	0	0	0.01	0	0	-0.01	1625.51
Carefree	16.96	-537.01	0.71	536.30	-0.33	-0.02	-0.87	0.07	1105.03
Carefree	17.06	-2599.43	3203.94	-604.52	-1.69	0.28	-0.73	-0.19	182.38
Carefree	17.18	-39.30	-22.09	61.38	-0.16	-0.50	-0.28	0.06	102.15
Carefree	17.30	-103.68	-1.91	105.59	-0.20	-0.67	-0.08	0.07	113.58
Carefree	17.39	-393.08	-32.49	425.56	-0.34	-0.49	-0.59	0.05	372.47
Carefree	17.48	-428.70	-244.95	673.66	-0.28	-0.25	-0.56	-0.02	111.87
Carefree	17.57	-378.83	359.72	19.10	-0.28	-0.08	-0.90	0.00	143.38
Carefree	17.65	-121.93	30.15	91.79	-0.16	-0.10	-0.21	0.05	57.44
Carefree	17.78	70.07	-46.86	-23.21	0.18	-0.05	0.08	-0.06	14.07
Carefree	17.84	-143.10	21.81	121.29	-0.17	-0.15	-0.28	0.03	60.82
Carefree	17.95	-104.76	7.13	97.63	-0.21	-0.06	-0.18	0.06	125.63
Carefree	18.09	-1251.37	350.10	901.27	-0.99	-0.84	-1.58	-0.19	790.49
Skunk Tank	18.16	-312.66	-507.35	820.01	0.37	-0.20	-1.03	-0.45	337.34
Skunk Tank	18.23	-1422.24	-407.54	1829.78	-1.55	-1.16	-1.18	-0.25	617.02
Skunk Tank	18.29	-304.13	181.29	122.84	0.60	0.07	-0.70	-0.79	444.34
Skunk Tank	18.49	-791.04	367.62	423.42	-0.34	-1.80	0.32	-0.57	183.20

Negative Value = Structural Alternative is greater.
Positive Value = Non-structural Alternative is greater.

Table 4-4.24 Cont.

Comparison of Hydraulic Parameters

Base HEC-RAS Model (Non-Structural Alternative) to Structural Alternative for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Difference in Discharge			Difference in Velocity			Difference in Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Skunk Tank	18.57	-578.83	1396.92	-818.10	0.11	-0.33	-0.40	-0.56	162.50
Skunk Tank	18.74	-236.63	-227.03	463.66	-0.18	-0.17	-1.35	-0.20	404.99
Skunk Tank	18.84	-1837.70	2527.39	-689.69	-1.56	-0.82	-1.74	-0.42	534.30
Skunk Tank	18.96	-475.52	2407.33	-1931.82	0.41	-0.22	-1.08	-0.70	595.90
Skunk Tank	19.07	-954.05	-1468.99	2423.04	-0.68	-0.97	-1.30	-0.38	797.06
Skunk Tank	19.18	-338.69	338.69	0	-0.26	-0.35	0.00	-0.06	92.74
Skunk Tank	19.26	-161.81	-702.86	864.67	-0.12	-0.26	-0.44	-0.20	967.98
Skunk Tank	19.41	-78.08	345.67	-267.59	0.05	-0.20	0.00	-0.14	108.72
Skunk Tank	19.52	11.23	3.75	-14.99	0.05	-0.12	0.02	-0.01	33.80
Skunk Tank	19.62	1.02	0	-1.02	0.00	0.00	-0.01	0.00	31.80
Skunk Tank	19.72	-57.48	353.12	-295.64	-0.08	-0.24	-0.18	0.00	37.21
Skunk Tank	19.83	-113.44	554.46	-441.02	-0.04	-0.06	-0.26	-0.05	54.04
Cobbled Bank	19.92	-1005.78	2696.66	-1690.89	-0.99	-0.90	-0.65	-0.27	566.88
Cobbled Bank	20.05	164.59	-207.92	43.34	0.92	0.36	0.56	-0.37	-7.47
Cobbled Bank	20.16	-38.88	215.80	-176.92	-0.07	-0.17	-0.05	-0.02	43.76
Cobbled Bank	20.26	-181.21	563.26	-382.06	-0.16	-0.04	-0.20	-0.06	31.29
Cobbled Bank	20.38	-67.73	169.10	-101.37	0.01	-0.01	0.04	-0.09	61.54
Cobbled Bank	20.48	-1079.16	1390.94	-311.78	-0.61	-0.01	-1.60	-0.55	374.28
Rodger Creek	20.62	-1017.23	46.14	971.09	-0.54	-1.33	-0.16	-0.58	341.45

Negative Value = Structural Alternative is greater.

Positive Value = Non-structural Alternative is greater.

Table 4-4.24 Cont.

Comparison of Hydraulic Parameters

Base HEC-RAS Model (Non-Structural Alternative) to Structural Alternative for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Difference in Discharge			Difference in Velocity			Difference in Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Rodger Creek	20.64	-1982.32	1326.30	656.01	-0.99	-1.34	-0.52	-0.62	446.34
Rodger Creek	20.71	-2142.82	141.50	2001.32	-1.32	-1.80	-0.28	-0.56	624.28
Rodger Creek	20.79	-4591.60	1426.61	3164.99	-1.76	-1.19	3.69	-0.81	845.07
Rodger Creek	20.90	-2843.06	-215.24	3058.31	-1.74	-1.39	-0.48	-0.35	852.79
Rodger Creek	20.98	-1577.85	604.06	973.78	-0.97	-0.74	2.72	-0.08	704.15
Rodger Creek	21.05	-1724.53	1436.80	287.73	-1.23	-0.61	-2.72	-0.06	608.60
Rodger Creek	21.11	-919.96	923.08	-3.12	-0.54	-0.28	-1.60	-0.08	248.32
Rodger Creek	21.18	-729.51	261.58	467.93	-0.62	-0.35	3.24	0.02	546.85
Rodger Creek	21.25	-2225.21	117.61	2107.60	-1.53	-0.56	2.62	-0.14	729.07
Rodger Creek	21.31	-1271.10	1595.24	-324.15	-0.15	-0.05	-1.56	-0.80	297.83
Rodger Creek	21.35	64.17	146.70	-210.87	1.03	0.08	-0.26	-0.67	142.97
Rodger Creek	21.41	-182.88	358.77	-175.89	-0.54	-0.63	-0.99	-0.01	256.68
Rodger Creek	21.49	246.28	32.39	-278.67	0.49	0.20	0.00	-0.18	31.25
Rodger Creek	21.58	-2225.33	2945.45	-720.11	-2.75	-0.22	-4.91	1.09	468.85
Rodger Creek	21.63	367.31	1253.47	-1620.77	1.94	1.10	-1.36	-0.39	350.56
Rodger Creek	21.69	-1072.84	2149.36	-1076.53	-1.91	-0.53	-1.03	3.83	89.88
Rodger Creek	21.77	230.04	167.26	-397.29	1.75	1.94	-0.42	-0.68	-428.63
Rodger Creek	21.82	-716.36	849.15	-132.79	-1.22	-0.55	-0.80	0.11	91.49

Negative Value = Structural Alternative is greater.

Positive Value = Non-structural Alternative is greater.

Table 4-4.24 Cont.

Comparison of Hydraulic Parameters

Base HEC-RAS Model (Non-Structural Alternative) to Structural Alternative for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Difference in Discharge			Difference in Velocity			Difference in Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Rodger Creek	21.91	-951.81	-19.39	971.20	-0.70	-0.27	2.78	-0.61	91.56
Rodger Creek	21.99	-884.75	-149.86	1034.61	-0.14	0.39	3.84	-0.58	182.54
Rodger Creek	22.08	-928.09	848.69	79.40	-0.85	-1.21	-1.18	-0.38	417.91
Rodger Creek	22.15	-875.96	926.64	-50.67	-0.93	-0.53	-1.06	-0.64	220.92
Rodger Creek	22.22	-106.57	96.70	9.87	0.66	-0.41	1.19	-0.43	104.51
Rodger Creek	22.29	-594.19	150.12	444.07	-1.02	-0.39	0.53	-0.35	359.54
Rodger Creek	22.36	-158.40	-1048.76	1207.15	0.73	0.52	6.41	-0.50	260.37
Rodger Creek	22.43	-2810.80	518.83	2291.98	-4.11	-1.29	1.35	-0.23	402.49
Rodger Creek	22.48	-2211.57	-587.77	2799.34	0.41	0.97	6.62	-0.32	628.09
Rodger Creek	22.56	-1425.77	-477.63	1903.40	-0.92	-0.78	1.44	-0.50	466.10
Rodger Creek	22.67	-1187.00	107.38	1079.61	-0.40	-0.25	6.75	-0.50	143.14
Rodger Creek	22.73	-1730.04	1436.16	293.88	-1.46	-1.01	2.95	-0.79	384.33
Cline Creek	22.79	-1053.92	1498.48	-444.55	0.70	-0.30	-0.44	-1.22	347.06
Cline Creek	22.86	34.42	423.46	-457.87	0.83	-0.34	-0.11	-0.52	228.67
Cline Creek	22.96	-1783.71	1783.71	0.00	-2.11	-0.63	0.00	-0.26	399.23
Cline Creek	23.13	-532.15	-320.84	852.99	0.64	-0.57	0.21	-0.89	229.24
Cline Creek	23.25	-3533.57	1970.58	1562.99	-2.91	-2.49	-2.00	-0.71	411.90
Cline Creek	23.33	-229.78	851.45	-621.66	1.99	3.18	0.61	-1.88	269.40

Negative Value = Structural Alternative is greater.
Positive Value = Non-structural Alternative is greater.

Table 4-4.24 Cont.

Comparison of Hydraulic Parameters

Base HEC-RAS Model (Non-Structural Alternative) to Structural Alternative for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Difference in Discharge			Difference in Velocity			Difference in Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Cline Creek	23.45	-22.46	-527.20	549.65	-0.38	-2.77	-0.23	0.14	151.70
Cline Creek	23.55	-2676.38	2690.77	-14.40	-1.70	-0.94	-0.85	-0.56	315.60
Cline Creek	23.64	651.72	-637.35	-14.37	2.56	0.76	0.35	-0.85	101.51
Shangri-La	23.87	-979.37	510.41	468.96	-0.90	0.15	2.26	-0.32	198.91
Shangri-La	23.94	-143.43	-333.53	476.97	0.59	0.43	-0.38	-0.63	131.97
Shangri-La	24.03	-3278.51	1685.24	1593.27	-5.61	-1.96	-4.08	-0.58	428.91
Shangri-La	24.12	-453.27	-153.14	606.42	1.68	-1.63	4.38	-1.51	246.39
Shangri-La	24.25	-776.93	295.62	481.31	-1.49	2.38	-0.97	0.05	301.07
Shangri-La	24.38	-534.00	72.68	461.32	0.29	-0.48	-0.58	-0.67	162.13
Shangri-La	24.48	-2636.04	2539.15	96.89	-1.96	-0.16	2.63	-1.20	258.15
Shangri-La	24.61	-5456.55	4816.10	640.45	-4.49	4.61	2.73	-2.30	636.70
Shangri-La	24.74	-3248.01	1919.61	1328.40	0.33	3.86	3.16	-3.01	587.74
Shangri-La	24.87	-2066.89	506.84	1560.05	-1.23	-1.51	-0.42	-1.09	387.62
Shangri-La	24.95	-2999.34	-510.09	3509.43	-1.87	-2.24	1.54	-1.51	183.16
New River Road	25.12	27.13	0.00	-27.13	0.27	0.00	-0.09	-0.11	308.85
New River Road	25.28	-1485.94	1485.94	0.00	-1.81	-1.80	0.00	-0.44	445.13
New River Road	25.38	-761.72	1672.87	-911.15	0.33	0.47	0.49	-1.15	634.58
New River Road	25.45	-914.31	0.00	914.31	-2.50	0.00	1.05	0.36	426.72

Negative Value = Structural Alternative is greater.

Positive Value = Non-structural Alternative is greater.

Table 4-4.24 Cont.

Comparison of Hydraulic Parameters

Base HEC-RAS Model (Non-Structural Alternative) to Structural Alternative for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Difference in Discharge			Difference in Velocity			Difference in Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
New River Road	25.56	6.53	-46.69	40.16	0.54	0.09	0.83	-0.17	490.27
New River Road	25.63	-3927.58	13.17	3914.41	-0.42	1.19	0.57	3.64	261.00
New River Road	25.69	-8290.48	265.00	8025.48	-4.19	2.35	4.25	3.80	985.71
New River Road	25.73	-0.42	0.00	0.42	0.07	0.00	1.08	4.23	1583.70
New River Road	25.74	0.00	0.00	0.00	-1.93	0.00	0.00	7.13	1862.86
New River Road	25.78	0.00	0.00	0.00	1.03	0.00	0.00	2.51	1711.71
New River Road	25.89	-2870.07	0.00	2870.07	-2.58	0.00	5.18	0.64	1993.74
New River Road	25.95	-6938.29	-1777.87	-94.84	-11.79	-8.33	-4.20	-10.95	-141.00
New River Road	26.17	-4447.87	424.63	4023.24	-4.53	4.73	4.76	-1.36	1960.81

Negative Value = Structural Alternative is greater.

Positive Value = Non-structural Alternative is greater.

Table 4-4.25

Comparison of Hydraulic Parameters

Base HEC-RAS Model (Non-Structural Alternative) to Low Impact Structural Alternative for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Difference in Discharge			Difference in Velocity			Difference Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Carefree	16.86	0	0	0	0	0	0	0	284.72
Carefree	16.87	0	0	0	0	0	0	0	509.64
Carefree	16.96	-530.06	0.80	529.27	-0.33	-0.02	-0.12	0.07	353.20
Carefree	17.06	-474.07	405.80	68.28	-0.15	-0.07	-0.16	-0.15	149.58
Carefree	17.18	10.57	-76.01	65.43	0.00	-0.26	-0.12	0.01	65.17
Carefree	17.30	4.37	-96.16	91.79	-0.06	-0.40	-0.04	0.04	74.45
Carefree	17.39	-351.40	-3.99	355.38	-0.24	-0.06	-0.56	0.02	179.66
Carefree	17.48	-256.43	-210.01	466.45	-0.14	-0.16	-0.46	-0.03	92.76
Carefree	17.57	-203.13	98.69	104.43	-0.22	-0.11	-0.81	0.05	120.79
Carefree	17.65	-81.99	12.21	69.79	-0.10	-0.04	-0.18	0.03	40.95
Carefree	17.78	57.50	-54.13	-3.38	0.14	0.01	0.06	-0.04	2.82
Carefree	17.84	-115.43	9.97	105.45	-0.14	-0.06	-0.25	0.02	49.59
Carefree	17.95	-75.28	6.55	68.74	-0.17	-0.05	-0.09	0.05	80.79
Carefree	18.09	-953.34	-182.41	1135.74	-0.72	-0.51	-1.04	-0.17	585.16
Skunk Tank	18.16	219.68	-240.55	20.88	1.07	0.34	0.04	-0.36	177.86
Skunk Tank	18.23	-923.96	-1245.11	2169.07	-1.23	-0.70	-0.84	-0.03	512.30
Skunk Tank	18.29	-119.15	-562.71	681.86	0.39	0.14	-1.00	-0.44	431.49
Skunk Tank	18.49	4.90	3.79	-8.69	0.03	0.01	0.01	-0.01	-0.29

Negative Value = Low Impact Structural Alternative is greater.
Positive Value = Non-structural Alternative is greater.

Table 4-4.25 Cont.

Comparison of Hydraulic Parameters

Base HEC-RAS Model (Non-Structural Alternative) to Low Impact Structural Alternative for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Difference in Discharge			Difference in Velocity			Difference Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Skunk Tank	18.57	-4.21	-3.65	7.86	-0.01	-0.01	0.00	0.01	0.14
Skunk Tank	18.74	4.76	22.22	-26.98	0.01	0.01	-0.49	0.00	273.77
Skunk Tank	18.84	-1.02	-0.12	1.14	-0.01	0.00	0.00	0.01	396.31
Skunk Tank	18.96	-294.57	-106.63	401.19	-0.47	-0.19	-0.98	0.07	418.02
Skunk Tank	19.07	-634.61	-1997.96	2632.57	-0.41	-0.33	-1.04	-0.30	566.11
Skunk Tank	19.18	19.22	-19.23	0.00	0.04	0.02	0	-0.01	-0.16
Skunk Tank	19.26	-6.44	3.92	2.52	-0.02	-0.01	-0.01	0.01	762.85
Skunk Tank	19.41	-100.17	443.05	-342.88	-0.10	-0.24	-0.07	-0.03	70.39
Skunk Tank	19.52	31.88	-11.13	-20.76	0.15	0.11	0.09	-0.05	4.41
Skunk Tank	19.62	30.48	0.00	-30.48	-0.02	0.00	-0.25	0.07	79.73
Skunk Tank	19.72	30.39	26.53	-56.92	0.02	0.03	-0.06	0.01	10.70
Skunk Tank	19.83	59.91	56.45	-116.36	0.03	0.03	-0.15	0.02	13.53
Cobbled Bank	19.92	-912.95	2246.29	-1333.35	-1.01	-1.02	-0.60	-0.15	533.98
Cobbled Bank	20.05	149.01	-193.32	44.32	0.83	0.34	0.50	-0.33	-24.71
Cobbled Bank	20.16	-21.51	80.48	-58.98	-0.11	-0.10	-0.11	0.02	28.37
Cobbled Bank	20.26	-313.36	802.06	-488.70	-0.30	-0.08	-0.19	-0.09	39.27
Cobbled Bank	20.38	-47.34	195.42	-148.08	0.13	0.06	0.14	-0.13	38.28
Cobbled Bank	20.48	-783.30	2390.12	-1606.82	-0.51	0.21	-0.35	-0.37	221.88
Rodger Creek	20.62	-794.18	1524.59	-730.41	-0.56	-1.12	-0.44	-0.38	294.95

Negative Value = Low Impact Structural Alternative is greater.
Positive Value = Non-structural Alternative is greater.

Table 4-4.25 Cont.

Comparison of Hydraulic Parameters

Base HEC-RAS Model (Non-Structural Alternative) to Low Impact Structural Alternative for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Difference in Discharge			Difference in Velocity			Difference Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Rodger Creek	20.64	-961.67	1993.91	-1032.23	-0.17	-0.73	-0.34	-0.52	336.22
Rodger Creek	20.71	-633.99	626.97	7.02	-0.76	-1.31	-0.29	0.04	369.57
Rodger Creek	20.79	-1141.61	1845.06	-703.46	-0.28	-0.33	-0.24	-0.31	377.16
Rodger Creek	20.90	-453.25	391.86	61.40	-0.59	-0.70	-0.21	0.12	520.26
Rodger Creek	20.98	-930.68	1126.69	-196.01	-0.49	-0.51	-0.26	-0.10	376.79
Rodger Creek	21.05	-586.64	924.31	-337.67	-0.09	-0.32	-0.59	-0.25	365.98
Rodger Creek	21.11	-363.91	368.56	-4.65	-0.31	-0.21	-0.09	0.03	136.38
Rodger Creek	21.18	-713.38	733.08	-19.69	-0.59	-0.21	-0.15	0.01	520.55
Rodger Creek	21.25	-174.51	22.93	151.58	-0.15	-0.06	-0.24	0.02	195.47
Rodger Creek	21.31	220.00	-181.73	-38.27	0.33	-0.11	-0.16	-0.09	85.09
Rodger Creek	21.35	-90.74	86.02	4.72	-0.19	-0.11	-0.03	0.03	68.08
Rodger Creek	21.41	3.17	88.62	-91.79	0.07	-0.15	-0.35	-0.04	118.47
Rodger Creek	21.49	21.60	-31.19	9.59	0.05	-0.01	0.04	-0.02	8.95
Rodger Creek	21.58	-14.83	483.88	-469.04	-0.09	-0.08	-0.95	0.04	185.60
Rodger Creek	21.63	135.49	143.89	-279.37	0.24	0.12	-0.27	-0.02	70.69
Rodger Creek	21.69	-22.72	39.97	-17.24	-0.11	-0.05	-0.08	0.04	3.91
Rodger Creek	21.77	20.04	16.24	-36.27	0.08	0.06	-0.18	-0.02	6.57
Rodger Creek	21.82	-22.98	18.09	4.89	-0.07	-0.03	-0.02	0.01	1.99
Rodger Creek	21.91	4.87	0.39	-5.26	0.03	0.02	0.00	-0.01	-0.66

Negative Value = Low Impact Structural Alternative is greater.
Positive Value = Non-structural Alternative is greater.

Table 4-4.25 Cont.

Comparison of Hydraulic Parameters

Base HEC-RAS Model (Non-Structural Alternative) to Low Impact Structural Alternative for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Difference in Discharge			Difference in Velocity			Difference Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Rodger Creek	21.99	-5.93	2.98	2.95	-0.02	-0.01	-0.01	0.01	1.97
Rodger Creek	22.08	-60.09	91.40	-31.31	-0.07	-0.09	-0.04	-0.01	25.78
Rodger Creek	22.15	-53.43	54.64	-1.21	-0.11	-0.35	-0.05	-0.02	141.90
Rodger Creek	22.22	17.50	-14.78	-2.72	0.20	0.18	-0.05	-0.07	-15.53
Rodger Creek	22.29	-18.82	-12.37	31.18	-0.11	-0.19	0.02	0.04	38.41
Rodger Creek	22.36	15.63	-6.78	-8.87	0.13	0.13	0.08	-0.05	45.42
Rodger Creek	22.43	11.93	61.43	-73.36	-0.02	-0.05	-0.22	0.02	19.46
Rodger Creek	22.48	0	0	0	0	0	0	1.00	289.75
Rodger Creek	22.56	-405.91	536.81	-130.89	-0.42	-0.69	-0.23	-0.04	140.88
Rodger Creek	22.67	3.29	-2.76	-0.54	0.01	0.00	0.00	0.00	-0.08
Rodger Creek	22.73	-512.91	673.99	-161.08	-0.47	-0.45	-0.64	-0.22	149.35
Cline Creek	22.79	-1057.32	1237.36	-180.04	-0.51	-0.58	-0.21	-0.29	215.02
Cline Creek	22.86	67.12	250.42	-317.54	0.75	-0.35	-0.10	-0.42	216.20
Cline Creek	22.96	-1551.75	1551.75	0.00	-1.97	-0.70	0.00	-0.13	382.18
Cline Creek	23.13	1239.46	-1268.37	28.91	2.01	-0.31	0.43	-0.49	91.46
Cline Creek	23.25	-238.58	148.86	89.72	-0.55	-0.09	-0.15	0.15	1.73
Cline Creek	23.33	57.03	-112.85	55.83	0.33	-0.08	0.18	-0.13	5.53
Cline Creek	23.45	-24.56	165.99	-141.43	-0.31	-0.29	-0.25	0.10	46.03
Cline Creek	23.55	-677.49	-887.46	1564.94	-0.49	-0.37	0.16	-0.12	60.52

Negative Value = Low Impact Structural Alternative is greater.
Positive Value = Non-structural Alternative is greater.

Table 4-4.25 Cont.

Comparison of Hydraulic Parameters

Base HEC-RAS Model (Non-Structural Alternative) to Low Impact Structural Alternative for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Difference in Discharge			Difference in Velocity			Difference Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
Cline Creek	23.64	250.63	-240.53	-10.09	1.01	0.31	0.20	-0.29	-42.24
Shangri-La	23.87	-17.71	13.23	4.48	-0.05	-0.02	-0.11	0.01	28.86
Shangri-La	23.94	29.81	-3.39	-26.41	0.04	0.01	-0.11	-0.01	8.69
Shangri-La	24.03	-778.64	1565.87	-787.23	-1.74	0.84	-1.65	0.01	197.40
Shangri-La	24.12	-290.18	99.96	190.22	-0.36	-0.80	-0.87	0.04	142.71
Shangri-La	24.25	15.90	-65.74	49.84	0.20	-0.12	-0.21	-0.14	142.23
Shangri-La	24.38	-42.23	-14.85	57.07	-0.05	-0.03	-0.23	-0.01	68.62
Shangri-La	24.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Shangri-La	24.61	-55.84	62.95	-7.12	-0.08	-0.30	-0.02	-0.01	118.12
Shangri-La	24.74	-454.91	540.73	-85.82	-0.64	-0.31	-0.60	0.09	183.98
Shangri-La	24.87	162.53	-67.62	-94.91	0.38	0.00	-0.62	-0.08	29.05
Shangri-La	24.95	-24.08	12.32	11.76	-0.14	0.05	-0.08	0.07	0.44
New River Road	25.12	-0.10	0.00	0.10	0.00	0.00	0.00	0.00	27.01
New River Road	25.28	0	0	0	0	0	0	0	8.99
New River Road	25.38	0.39	0.22	-0.61	0.01	0.00	0.00	0.00	58.74
New River Road	25.45	0.19	0.00	-0.19	0.00	0.00	-0.01	0.01	30.28
New River Road	25.56	10.25	20.31	-30.56	0.01	0.02	-0.21	0.02	104.04
New River Road	25.63	-2638.27	13.43	2624.84	1.40	1.80	1.81	0.39	-28.22
New River Road	25.69	-2755.68	265.00	2490.68	-0.55	2.35	-0.44	2.87	330.15

Negative Value = Low Impact Structural Alternative is greater.
Positive Value = Non-structural Alternative is greater.

Table 4-4.25 Cont.

Comparison of Hydraulic Parameters

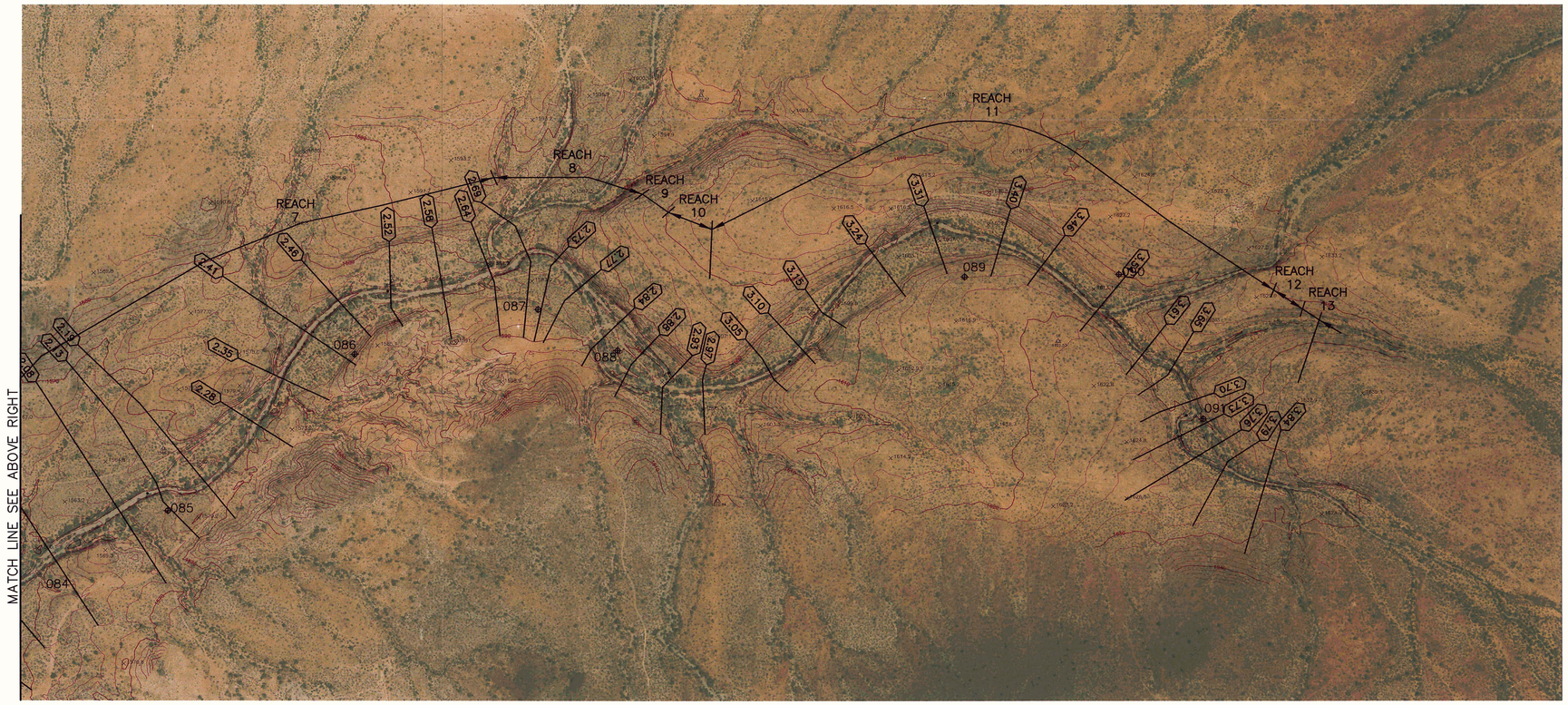
Base HEC-RAS Model (Non-Structural Alternative) to Low Impact Structural Alternative for Skunk Creek

100-year Controlling Peak Discharge

Reach	x-sec	Difference in Discharge			Difference in Velocity			Difference Channel Depth of Flow	Top Width Difference
		Channel	Left Over Bank	Right Over Bank	Channel	Left Over Bank	Right Over Bank		
		(cfs)	(cfs)	(cfs)	(fps)	(fps)	(fps)	(ft)	(ft)
1	2	3	4	5	6	7	8	9	10
New River Road	25.73	-0.42	0	0.42	0.07	0	1.08	4.23	1569.92
New River Road	25.74	0.00	0	0.00	-1.93	0	0	7.13	1649.90
New River Road	25.78	0.00	0	0.00	1.03	0.00	0.00	2.51	954.68
New River Road	25.83	5.76	0	-5.76	0.02	0	0	0.99	731.25
New River Road	25.95	-5.21	1.19	4.03	-0.02	0.00	-0.01	1.31	1256.76
New River Road	26.17	0	0	0	0	0	0	0	76.92

Negative Value = Low Impact Structural Alternative is greater.
Positive Value = Non-structural Alternative is greater.

MATCH LINE SEE BELOW LEFT



MATCH LINE SEE ABOVE RIGHT

N

400 0 400 800

SCALE OF FEET

N

400 0 400 800

SCALE OF FEET

Stantec

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Legend

CROSS SECTION — 1.99

n–VALUE REACH IDENTIFIER — REACH 6

GPS COORDINATE AND PHOTO VICINITY LOCATION — 080

File Name:FIGURE1.DWG	DES\ES	PJE	MCG	10/12/99
	Dwn.	Dsgn.	Dsgn.	Date

Client/Project

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

SKUNK CREEK WATERCOURSE MASTER PLAN

Title

PLATE 1
SONORAN WASH MANNING'S N-VALUE REACH MAP

Project No.	Scale	
82000141	1"=400'	
Drawing No.	**Sheet**	**Revision**
Appendix A, Figure 1	1 of 1	0

P:\82000141\Drawings\Jobmap\Figure1.dwg
2001 July 16, 1:28 p.m.

APPENDIX A

MANNING'S N-VALUE CALCULATIONS AND PHOTOGRAPHS

MANNING'S N VALUE CALCULATION SHEETS

Table A-1
Determination of Manning's n-value by the FCDMC method

Project: Skunk Creek Watercourse Master Plan
Steam: Sonoran Wash
Reach: 1: RM 0.52 By: mcg Date: 12 Jan. 00

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018	0.015	0.015	0.015
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000	0.000	0.000
	Minor		0.001 - 0.005			
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000	0.000	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010			
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00	1.000	1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.015	0.015	0.015
Photograph No.:					1-3	

Table A-1
Determination of Manning's n-value by the FCDMC method

Project: Skunk Creek Watercourse Master Plan
Steam: Sonoran Wash
Reach: 2: RM 0.57 - 0.66 By: mcg Date: 12 Jan. 00

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032	0.025		0.025
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035		0.026	
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000	0.000	0.000
	Minor		0.001 - 0.005			
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000	0.000	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.010	
	Medium		0.010 - 0.025			0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100	0.100		
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00	1.000	1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.125	0.036	0.050
Photograph No.:				4	5-8	

Table A-1
Determination of Manning's n-value by the FCDMC method

Project: Skunk Creek Watercourse Master Plan
Steam: Sonoran Wash
Reach: 3: RM 0.73 By: mcg Date: 12 Jan. 00

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032	0.025		0.025
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035		0.026	
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000	0.000	0.000
	Minor		0.001 - 0.005			
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000		0.000
	Minor		0.005 - 0.015		0.002	
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.010	
	Medium		0.010 - 0.025	0.025		
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			0.050
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00	1.000	1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.050	0.038	0.075
Photograph No.:				9-11	6-8	12-14

Table A-1
Determination of Manning's n-value by the FCDMC method

Project: Skunk Creek Watercourse Master Plan
Steam: Sonoran Wash
Reach: 4: RM 0.77 - 1.00 By: mcg Date: 12 Jan. 00

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032	0.025		0.025
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035		0.026	
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000	0.000	0.000
	Minor		0.001 - 0.005			
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000	0.000	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.010	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			0.035
	Very Large		0.050 - 0.100	0.050		
Variations in Channel Cross Section	Gradual	n_4	0.000			0.000
	Alternating (occasionally)		0.001 - 0.005	0.005	0.001	
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00	1.000	1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.080	0.037	0.060
Photograph No.:				18-20	15-17	21-23

Table A-1
Determination of Manning's n-values by the FCDMC method

Project: Skunk Creek Watercourse Master Plan
Steam: Sonoran Wash
Reach: 5: RM 1.09 - 1.77 By: mcg Date: 12 Jan. 00

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032	0.025		0.025
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.028	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000	0.000	0.000
	Minor		0.001 - 0.005			
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000	0.002	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.025	0.010	0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00	1.000	1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.050	0.040	0.050
Photograph No.:				27-29	33-35	30-32
					42-45	

Table A-1
Determination of Manning's n-values by the FCDMC method

Project: Skunk Creek Watercourse Master Plan
Steam: Sonoran Wash
Reach: 6: RM 1.84
8: RM 2.69

By: mcg Date: 12 Jan. 00

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Confluence	Tributary Chnl	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018					
	Rock Cut		0.025					
	Firm Soil		0.025 - 0.032	0.025		0.025		0.025
	Fine Sand		0.023 - 0.026					
	Coarse Sand		0.026 - 0.035				0.026	
	Gravel		0.028 - 0.035					
	Cobble		0.030 - 0.050		0.030			
	Boulder		0.040 - 0.070					
Degree of Irregularity	Smooth	n_1	0.000	0.000		0.000	0.000	0.000
	Minor		0.001 - 0.005		0.001			
	Moderate		0.006 - 0.010					
	Severe		0.011 - 0.020					
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000	0.002	0.000	0.000	0.000
	Minor		0.005 - 0.015					
	Appreciable		0.020 - 0.030					
	Severe		0.040 - 0.060					
Vegetation	Small	n_3	0.002 - 0.010					
	Medium		0.010 - 0.025		0.010		0.010	
	Large		0.025 - 0.050	0.035		0.030		0.030
	Very Large		0.050 - 0.100					
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000		0.000	0.000	0.000
	Alternating (occasionally)		0.001 - 0.005		0.002			
	Alternating (frequently)		0.010 - 0.015					
Degree of Meandering	Minor	m	1.00	1.000	1.000	1.000	1.000	1.000
	Appreciable		1.15					
	Severe		1.30					
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.060	0.045	0.055	0.036	0.055
Photograph No.:				102-104	52-54	77-79	80-82	83-85
					62-64			

Table A-1
Determination of Manning's n-values by the FCDMC method

Project: Skunk Creek Watercourse Master Plan
Steam: Sonoran Wash
Reach: 7: RM 1.90 - 2.64
9: RM 2.73
11: RM 2.97 - 3.70
13: RM 3.79 - 3.84

By: mcg Date: 12 Jan. 00

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032	0.025		0.025
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000		0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000	0.002	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010			
	Medium		0.010 - 0.025		0.010	
	Large		0.025 - 0.050	0.035		0.030
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000		0.000
	Alternating (occasionally)		0.001 - 0.005		0.002	
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00	1.000	1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.060	0.045	0.055
Photograph No.:				102-104	52-54	77-79
					62-64	

Table A-1
Determination of Manning's n-values by the FCDMC method

Project: Skunk Creek Watercourse Master Plan
Steam: Sonoran Wash
Reach: 10: RM 2.77 - 2.93
12: RM 3.73 - 3.76

By: mcg Date: 12 Jan. 00

Channel Conditions		Manning's n Adjustment		Left Overbank	Left Braid	Island	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018					
	Rock Cut		0.025					
	Firm Soil		0.025 - 0.032	0.025		0.025		0.025
	Fine Sand		0.023 - 0.026					
	Coarse Sand		0.026 - 0.035					
	Gravel		0.028 - 0.035					
	Cobble		0.030 - 0.050		0.030		0.030	
	Boulder		0.040 - 0.070					
Degree of Irregularity	Smooth	n_1	0.000	0.000		0.000		0.000
	Minor		0.001 - 0.005		0.001		0.001	
	Moderate		0.006 - 0.010					
	Severe		0.011 - 0.020					
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000	0.002	0.000	0.002	0.000
	Minor		0.005 - 0.015					
	Appreciable		0.020 - 0.030					
	Severe		0.040 - 0.060					
Vegetation	Small	n_3	0.002 - 0.010					
	Medium		0.010 - 0.025		0.010		0.010	
	Large		0.025 - 0.050	0.035		0.035		0.030
	Very Large		0.050 - 0.100					
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000		0.000		0.000
	Alternating (occasionally)		0.001 - 0.005		0.002		0.002	
	Alternating (frequently)		0.010 - 0.015					
Degree of Meandering	Minor	m	1.00	1.000	1.000	1.000	1.000	1.000
	Appreciable		1.15					
	Severe		1.30					
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.060	0.045	0.060	0.045	0.055
Photograph No.:				86-88	89-91	92	93-95	96-98

PHOTOGRAPH LOCATIONS AND DESCRIPTIONS

Table A-2

Skunk Creek Watercourse Master Plan
Photograph location and description for Unnamed Tributary

Picture[a]	GPS Coordinate ID[b]	Description
1	75	Looking upstream at overchute
2		Debris caught in baffle blocks
3		Looking downstream at overchute
4		Looking upstream from overchute
5		Bed material just upstream of overchute
6	76	Channel bed material
7		Looking upstream in main channel
8		Looking downstream in main channel
9		Left overbank bed material
10		Looking upstream in left overbank
11		Looking downstream in left overbank
12		Right overbank bed material
13		Looking upstream in right overbank
14		Looking downstream in right overbank
15	77	Channel bed material
16		Looking upstream in main channel
17		Looking downstream in main channel
18		Left overbank bed material
19		Looking upstream in left overbank
20		Looking downstream in left overbank
21		Right overbank bed material
22		Looking upstream in right overbank
23		Looking downstream in right overbank
24	78	Channel bed material
25		Looking upstream in main channel
26		Looking downstream in main channel
27		Left overbank bed material
28		Looking upstream in left overbank
29		Looking downstream in left overbank
30		Right overbank bed material
31		Looking upstream in right overbank
32		Looking downstream in right overbank
33	79	Channel bed material
34		Looking upstream in main channel
35		Looking downstream in main channel
36		Left overbank bed material
37		Looking upstream in left overbank
38		Looking downstream in left overbank
39		Right overbank bed material
40		Looking upstream in right overbank

Notes:
A: Selected photographs that are representative of reach characteristics are highlighted
B: Photographs were taken in the vicinity of GPS coordinate. See Plate 1 for the GPS coordinate location.

Table A-2 (continued)

Skunk Creek Watercourse Master Plan
Photograph location and description for Unnamed Tributary

Picture[a]	GPS Coordinate ID[b]	Description
41		Looking downstream in right overbank
42		Typical bed material in riffle
43	80	Channel bed material
44		Looking upstream in main channel
45		Looking downstream in main channel
46		Left overbank bed material
47		Looking upstream in left overbank
48		Looking downstream in left overbank
49		Right overbank bed material
50		Looking upstream in right overbank
51		Looking downstream in right overbank
52	84	Channel bed material
53		Looking upstream in main channel
54		Looking downstream in main channel
55		Left overbank bed material
56		Looking upstream in left overbank
57		Looking downstream in left overbank
58		Right overbank bed material
59		Looking upstream in right overbank
60		Looking downstream in right overbank
61	85	Old bridge abutment
62	86	Channel bed material
63		Looking upstream in main channel
64		Looking downstream in main channel
65		Left overbank bed material
66		Looking upstream in left overbank
67		Looking downstream in left overbank
68		Right overbank bed material
69		Looking upstream in right overbank
70		Looking downstream in right overbank
71	87	Channel bed material
72		Looking upstream in main channel
73		Looking downstream in main channel
74		Left overbank bed material
75		Looking upstream in left overbank
76		Looking downstream in left overbank
77		Inundation area bed material
78		Looking upstream in overbank
79		Looking downstream in overbank
80		Tributary channel bad material

Notes:
A: Selected photographs that are representative of reach characteristics are highlighted
B: Photographs were taken in the vicinity of GPS coordinate. See Plate 1 for the GPS coordinate location.

Table A-2 (continued)

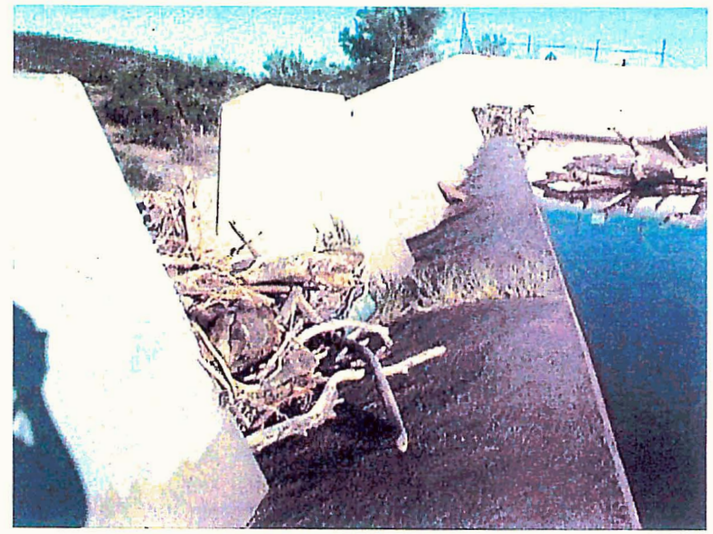
Skunk Creek Watercourse Master Plan
Photograph location and description for Unnamed Tributary

Picture[a]	GPS Coordinate ID[b]	Description
81		Looking upstream in tributary channel
82		Looking downstream in tributary channel
83		Right overbank bed material
84		Looking upstream in right overbank
85		Looking downstream in right overbank
86	88	Left overbank material
87		Looking upstream in left overbank
88		Looking downstream in left overbank
89		Left braid bed material
90		Looking upstream in left braid
91		Looking downstream in left braid
92		Island bed material
93		Right braid bed material
94		Looking upstream in right braid
95		Looking downstream in right braid
96		Right overbank bed material
97		Looking upstream in right overbank
98		Looking downstream in right overbank
99	89	Channel bed material
100		Looking upstream in main channel
101		Looking downstream in main channel
102		Left overbank bed material
103		Looking upstream in left overbank
104		Looking downstream in left overbank
105		Right overbank bed material
106		Looking upstream in right overbank
107		Looking downstream in right overbank
108	91	Channel bed material
109		Looking upstream in main channel
110		Looking downstream in main channel
111		Left overbank bed material
112		Looking upstream in left overbank
113		Looking downstream in left overbank
114		Right overbank bed material
115		Looking upstream in right overbank
116		Looking downstream in right overbank

Notes:
A: Selected photographs that are representative of reach characteristics are highlighted
B: Photographs were taken in the vicinity of GPS coordinate. See Plate 1 for the GPS coordinate location.

SELECTED FIELD PHOTOGRAPHS

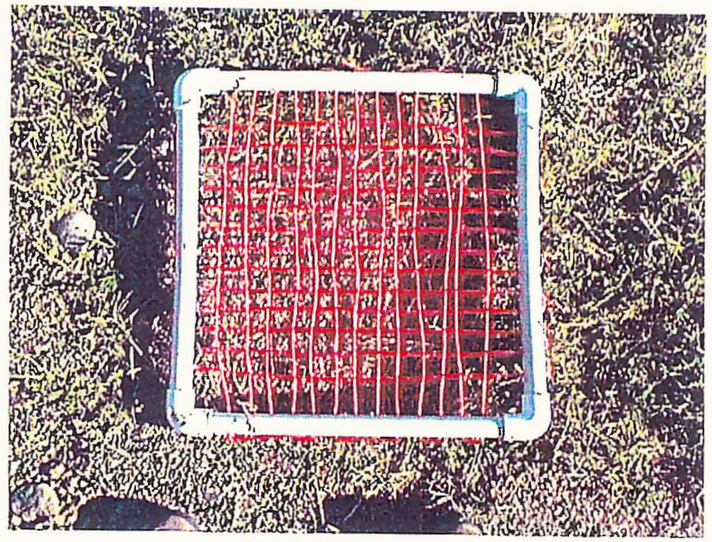
Reach 1, Photograph 1
Looking upstream at overchute



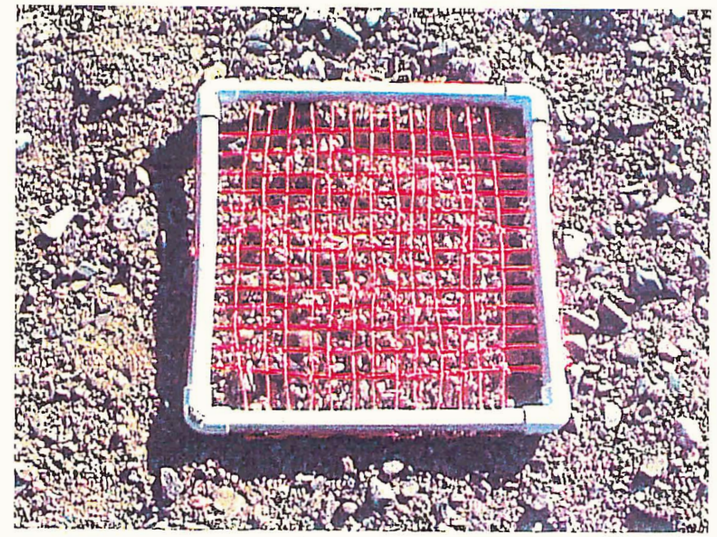
Reach 1, Photograph 2
Debris caught in baffle blocks

Reach 1, Photograph 3
Looking downstream at overchute

Reach 2, Photograph 4
Looking upstream from overchute



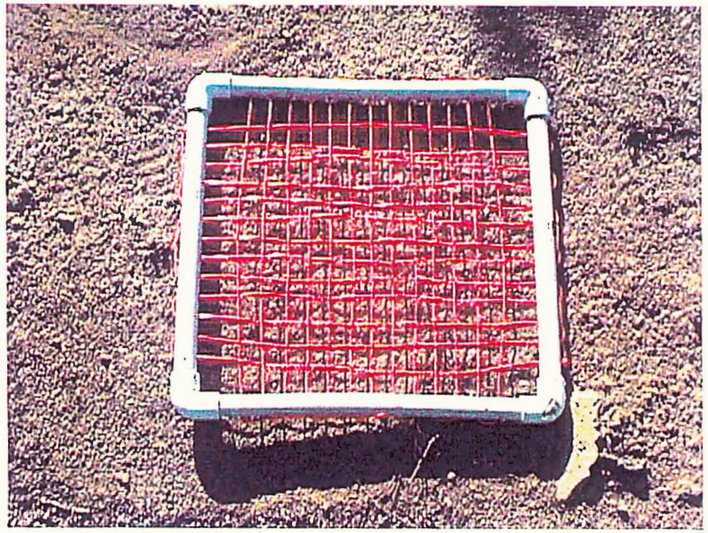
Reach 2, Photograph 5
Bed material just upstream of overchute



Reach 2, Photograph 6
Channel bed material

Reach 2, Photograph 7
Looking upstream in main channel

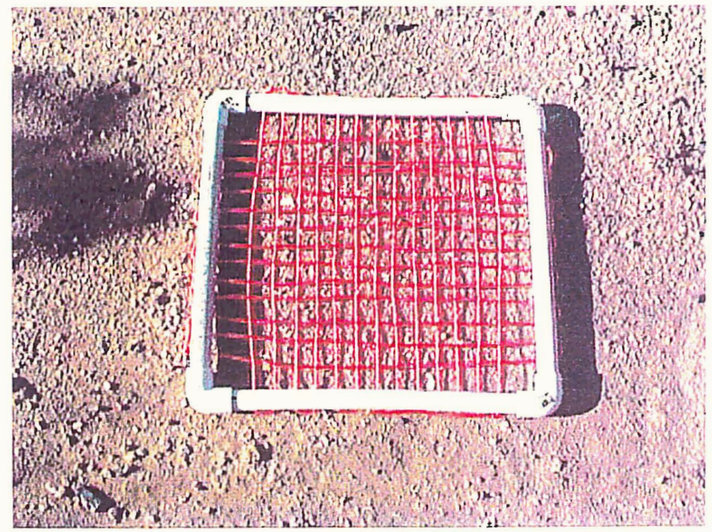
Reach 2, Photograph 8
Looking downstream in main channel



Reach 3, Photograph 9
Left overbank bed material

Reach 3, Photograph 10
Looking upstream in left overbank

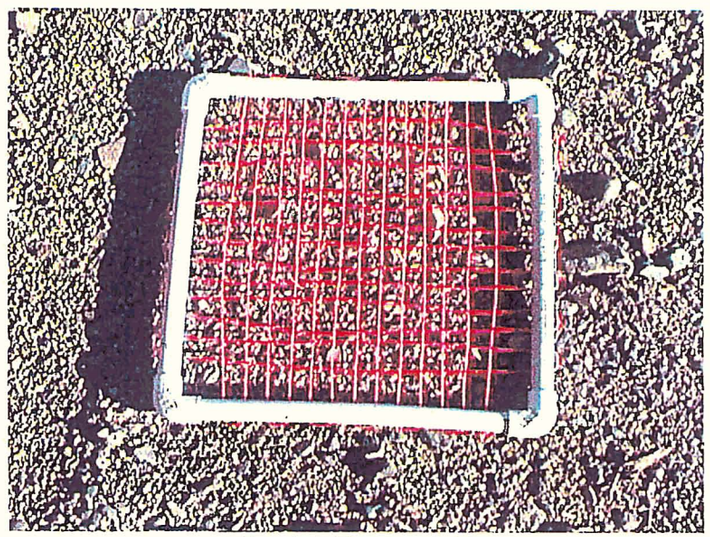
Reach 3, Photograph 11
Looking downstream in left overbank



Reach 4, Photograph 12
Right overbank bed material

Reach 3, Photograph 13
Looking upstream in right overbank

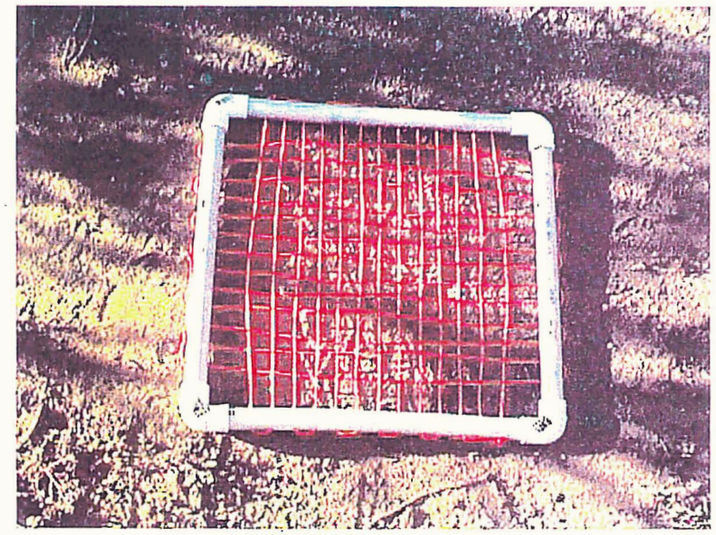
Reach 3, Photograph 14
Looking downstream in right overbank



Reach 4, Photograph 15
Channel bed material

Reach 4, Photograph 16
Looking upstream in main channel

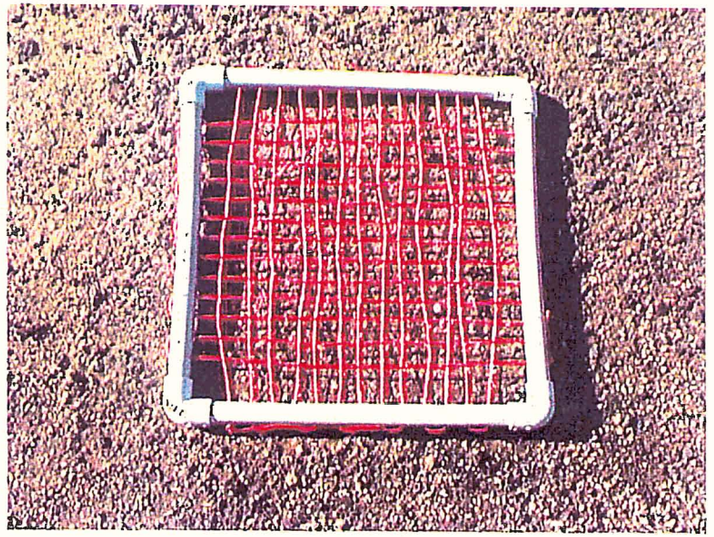
Reach 4, Photograph 17
Looking downstream in main channel



Reach 4, Photograph 18
Left overbank bed material

Reach 4, Photograph 19
Looking upstream in left overbank

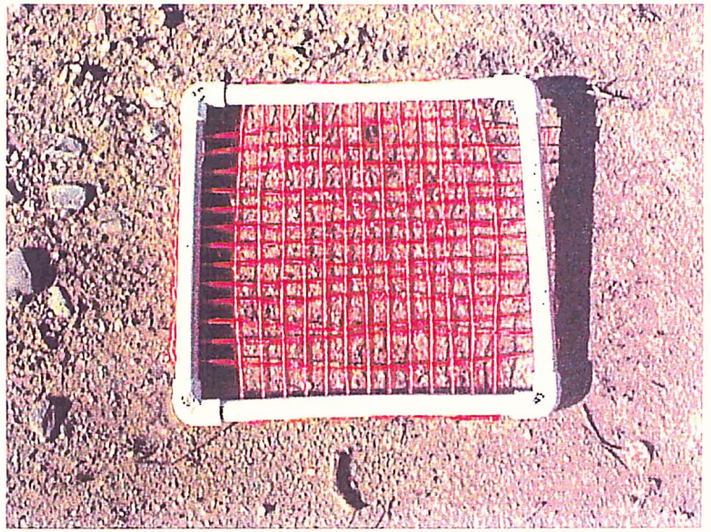
Reach 4, Photograph 20
Looking downstream in left overbank



Reach 4, Photograph 21
Right overbank bed material

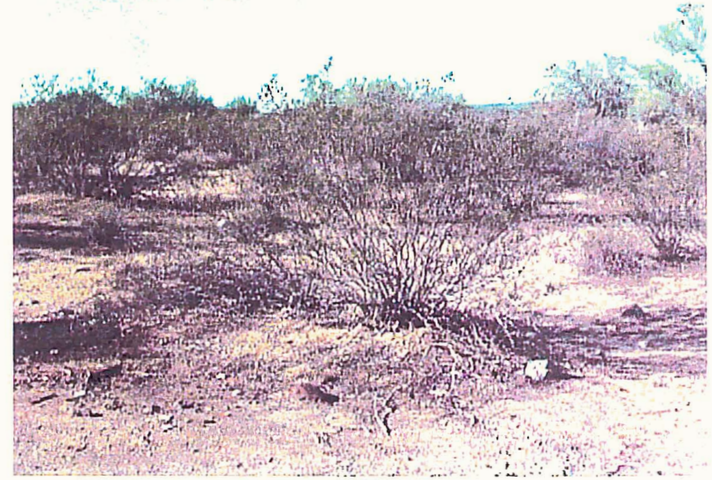
Reach 4, Photograph 22
Looking upstream in right overbank

Reach 4, Photograph 23
Looking downstream in right overbank

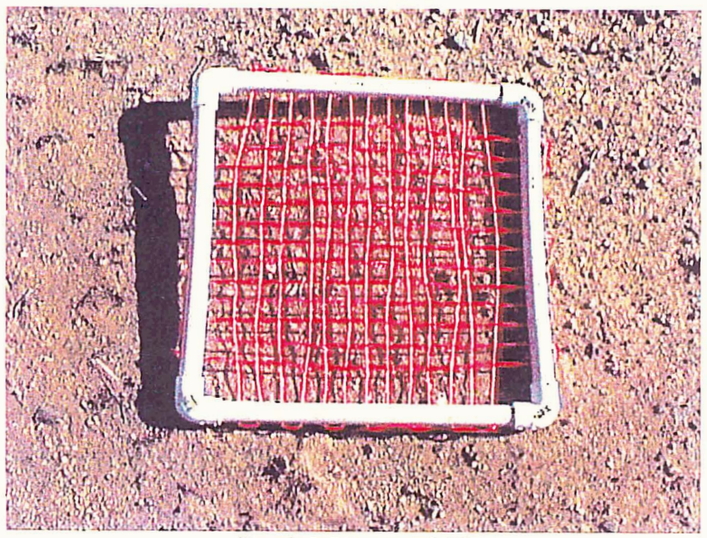


Reach 5, Photograph 27
Left overbank bed material

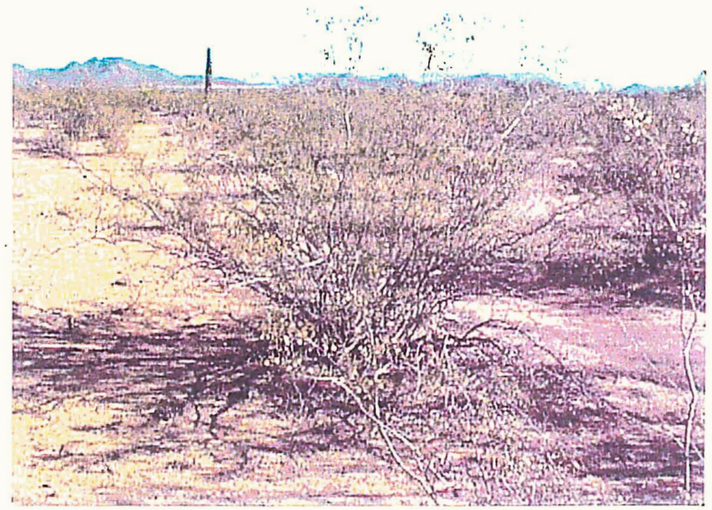
Reach 5, Photograph 28
Looking upstream in left overbank



Reach 5, Photograph 29
Looking downstream in left overbank

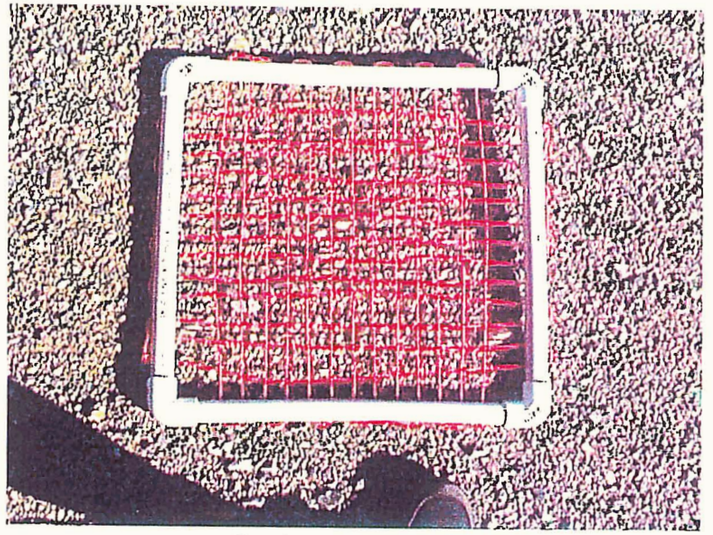


Reach 5, Photograph 30
Right overbank bed material



Reach 5, Photograph 31
Looking upstream in right overbank

Reach 5, Photograph 32
Looking downstream in right overbank

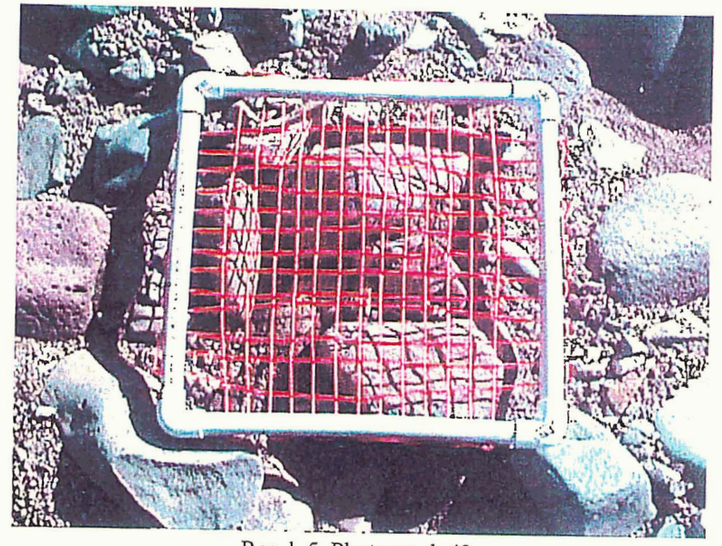


Reach 5, Photograph 33
Channel bed material

Reach 5, Photograph 34
Looking upstream in main channel

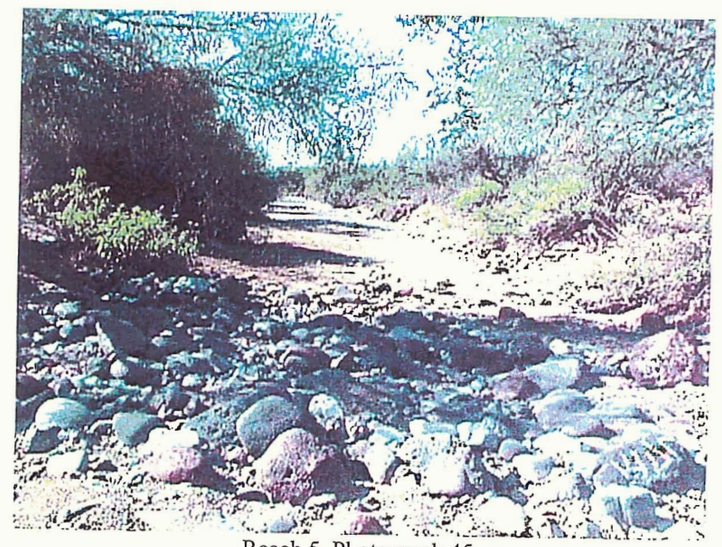
Reach 5, Photograph 35
Looking downstream in main channel

Reach 5, Photograph 42
Typical bed material in riffle

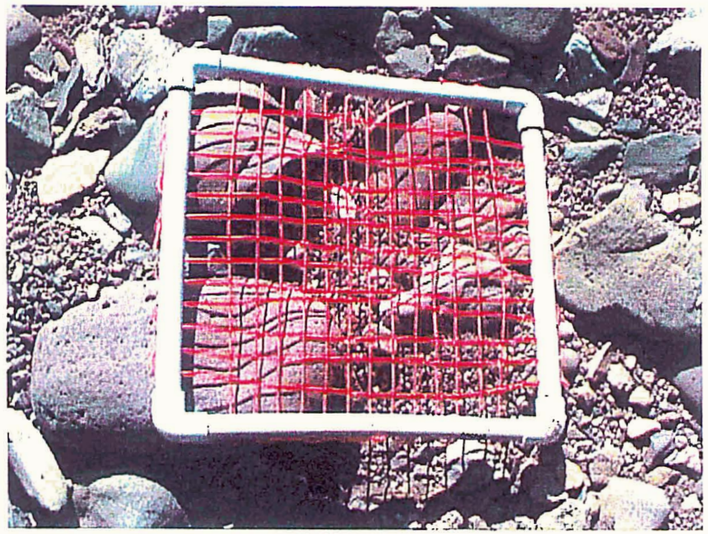


Reach 5, Photograph 43
Channel bed material

Reach 5, Photograph 44
Looking downstream in main channel



Reach 5, Photograph 45
Looking downstream in main channel



Reaches 6 - 9, 11 and 13, Photograph 52
Channel bed material

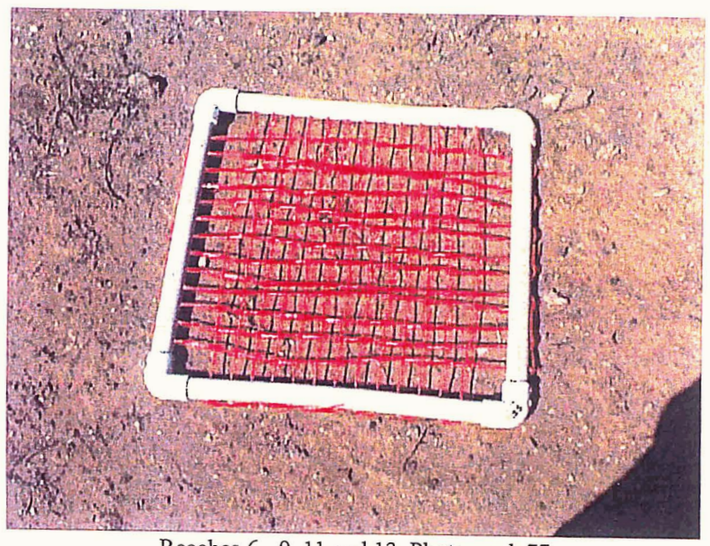
Reaches 6 - 9, 11 and 13, Photograph 53
Looking upstream in main channel

Reaches 6 - 9, 11 and 13, Photograph 54
Looking downstream in main channel

Reaches 6 - 9, 11 and 13, Photograph 62
Channel bed material

Reaches 6 - 9, 11 and 13, Photograph 63
Looking upstream in main channel

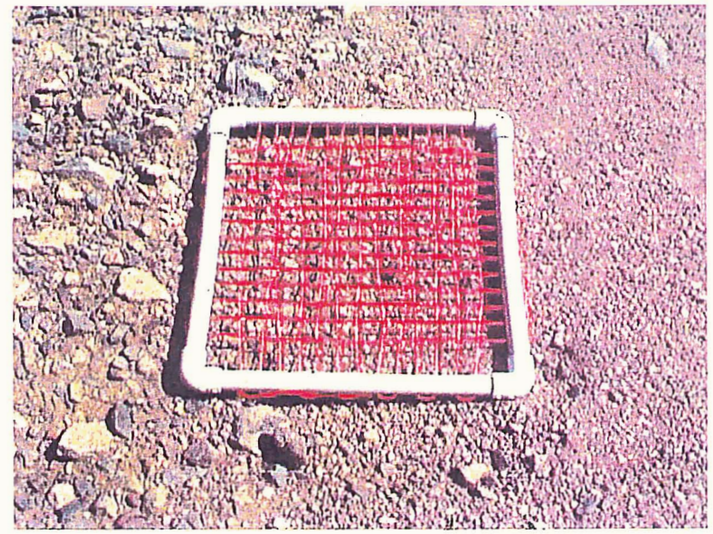
Reaches 6 - 9, 11 and 13, Photograph 64
Looking downstream in main channel



Reaches 6 - 9, 11 and 13, Photograph 77
Inundation area bed material

Reaches 6 - 9, 11 and 13, Photograph 78
Looking upstream in right overbank

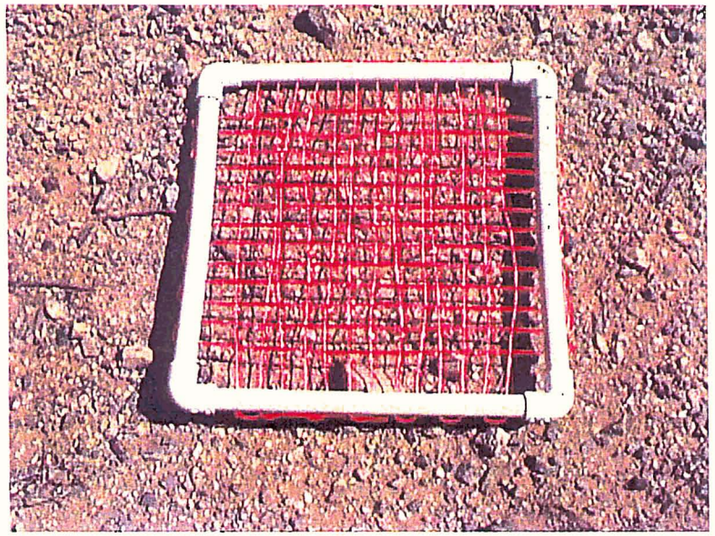
Reaches 6 - 9, 11 and 13, Photograph 79
Looking downstream in right overbank



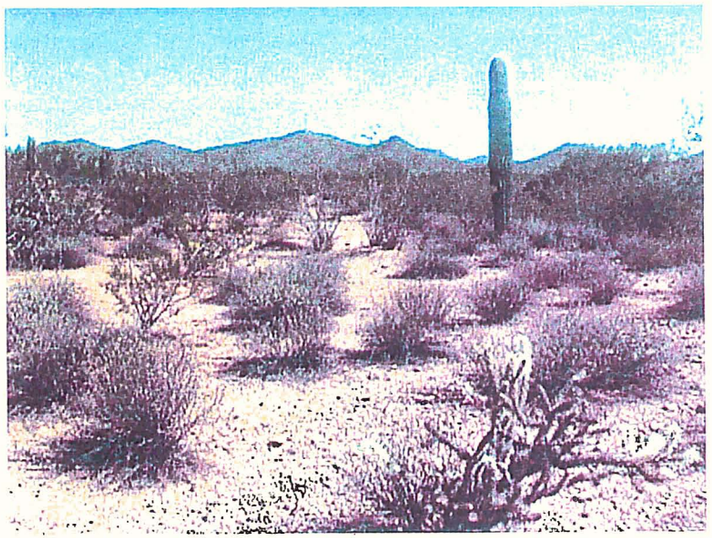
Reaches 6 and 8, Photograph 80
Tributary channel bed material

Reaches 6 and 8, Photograph 81
Looking upstream in tributary channel

Reaches 6 and 8, Photograph 82
Looking downstream in tributary channel

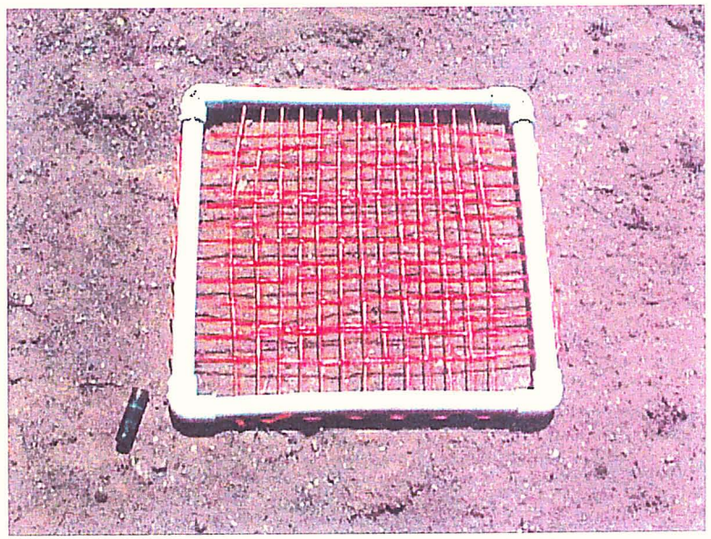


Reaches 6 and 8, Photograph 83
Right overbank bed material



Reaches 6 and 8, Photograph 84
Looking downstream in right overbank

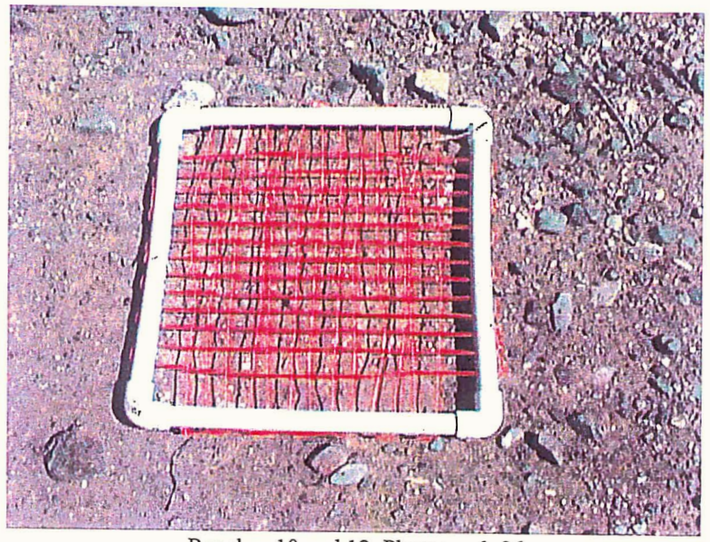
Reaches 6 and 8, Photograph 85
Looking downstream in right overbank



Reaches 6 - 9, 11 and 13, Photograph 102
Left overbank bed material

Reaches 6 - 9, 11 and 13, Photograph 103
Looking upstream in left overbank

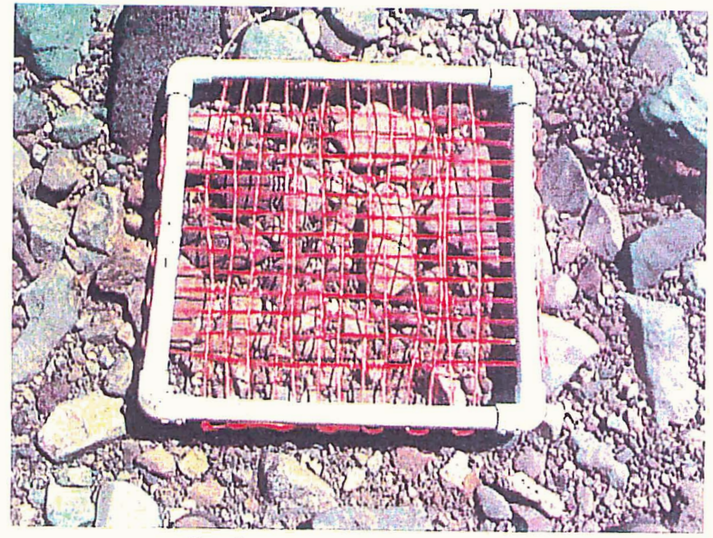
Reaches 6 - 9, 11 and 13, Photograph 104
Looking downstream in left overbank



Reaches 10 and 12, Photograph 86
Left overbank bed material

Reaches 10 and 12, Photograph 87
Looking upstream in left overbank

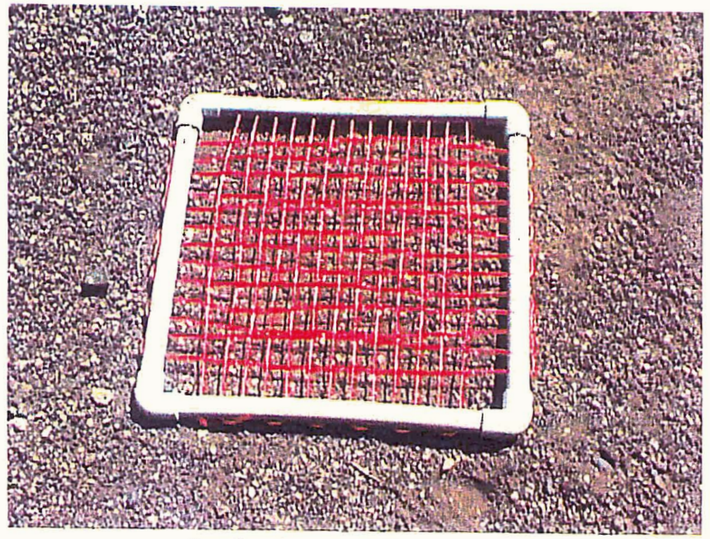
Reaches 10 and 12, Photograph 88
Looking downstream in left overbank



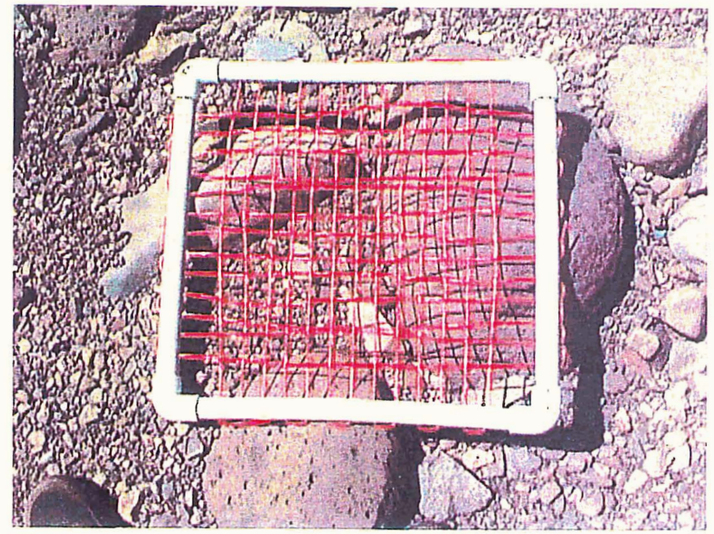
Reaches 10 and 12, Photograph 89
Left braid bed material

Reaches 10 and 12, Photograph 90
Looking upstream in left braid

Reaches 10 and 13, Photograph 91
Looking downstream in left braid



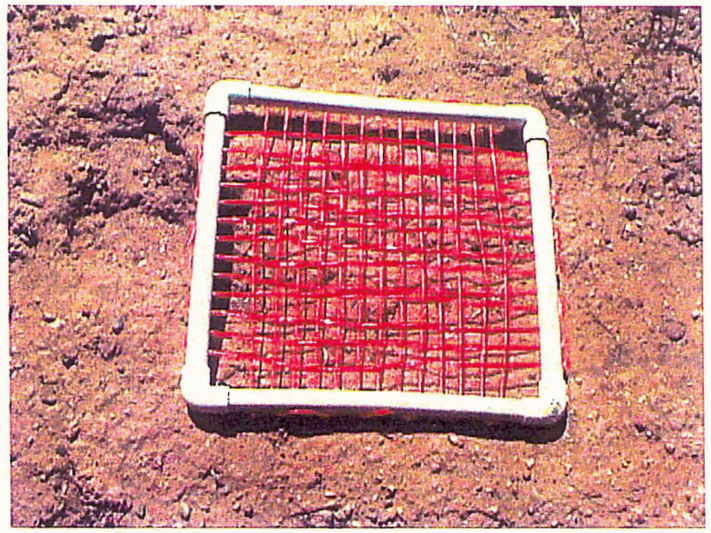
Reaches 10 and 12, Photograph 92
Island bed material



Reaches 10 and 12, Photograph 93
Right braid bed material

Reaches 10 and 12, Photograph 94
Looking upstream in right braid

Reaches 10 and 12, Photograph 95
Looking downstream in right braid



Reaches10 and 12, Photograph 96
Right overbank bed material

Reaches 10 and 12, Photograph 97
Looking upstream in right overbank

Reaches 10 and 12, Photograph 98
Looking downstream in right overbank

MANNING'S N VALUE REACH LIMITS AND PHOTOGRAPH LOCATIONS

APPENDIX B

HEC-2 AND HEC-RAS MODEL OUTPUT FILES SKUNK CREEK

HEC-2 BASE EXISTING CONDITION 100-YEAR MODEL

```
1*****************************************
 *  HEC-2 WATER SURFACE PROFILES          *
 *                                        *
 *  Version   4.6.2;  May 1991            *
 *                                        *
 *  RUN DATE    25APR00    TIME   12:00:08 *
 *****************************************
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```
*************************************
*  U.S. ARMY CORPS OF ENGINEERS     *
*  HYDROLOGIC ENGINEERING CENTER    *
*  609 SECOND STREET, SUITE D       *
*  DAVIS, CALIFORNIA 95616-4687     *
*          (916) 756-1104           *
*************************************
```

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
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1

25APR00 12:00:08 PAGE 1

THIS RUN EXECUTED 25APR00 12:00:08

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

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

```
        FILENAME:       REVDIST.DAT

        (REVISED DISTRICT MODEL)

        ELREA ON X3 CARD FOR 16.87 AND 16.86 RAISED TO 1680.0
        ENCROACHMENTS MODIFIED ON 16.87 AND 16.86 TO REFLECT SKEW
        LEFT ET CHANGED TO 9914 FOR SECTION 16.96

        COMPLETE HEC-2 MODEL FOR ENTIRE SKUNK CREEK FLOODPLAIN DELINEATION STUDY
        HEC ANALYSIS INCLUDES SECTIONS 13.00 TO 17.95 (FLOODPLAIN ANALYSIS ONLY)
        MONTGOMERY WATSON ANALYSIS INCLUDES SECTIONS 18.09 TO 20.62 AND 22.96 TO
        CASTRO FLEET ANALYSIS (DEL WEBB) INCLUDES SECTIONS 20.64 TO 22.95


SPLIT FLOW BEING PERFORMED


SF      SPLIT FLOW FROM SECTIONS 13.02 TO 13.28


TW      I-17 SPLIT FLOW
        WEIR FLOW OCCURS ALONG I-17 BETWEEN CROSS-SECTIONS 13.02 & 13.28
        FLOW WEIRS OVER THE NORTH BOUND LANES OF I-17 AND ALSO OVER THE
        EMBANKMENT INTO THE CENTRAL ARIZONA PROJECT CANAL
WS    11   13.02   13.28      -1     2.6
WC     0  1527.2     490  1526.1     725    1526     780  1524.5     830    1526
WC   855  1526.7     995    1528    1230    1530    1515    1532    1750    1534
WC  1840  1534.5
```

1

25APR00 12:00:08 PAGE 2

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T1      SKUNK CREEK FLOODPLAIN AND FLOODWAY DELINEATION (METHOD 1)
T2      100-YEAR FREQUENCY            DATE:  FEBRUARY 1998
T2      RUN INCORPORATING FCDMC'S AND FEMA'S REVISIONS AT NEW RIVER ROAD BRIDGE
T3      MONT. WAT. AND HEC

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

                2                                                                  1522.96

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      1                 -1


J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38        43         1         8        16        17        18         2        55        26
     56        39        38        38        53         4        54       115

J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

    -10       -10
        SPLIT FL      38SES AT CAP CANAL & CAREFREE HWY
        NO FLOODWAY ANALYSIS PERFORMED FOR CROSS SECTIONS 13.00 TO 13.28
        DUE TO WEIR FLOW AND PONDING OF WATER UPSTREAM OF THE CAP CANAL BERM.
        THE FLOODWAY CONCEPT IS NOT APPLICABLE FOR THIS REACH.
```

```
        Q100 INCREASED FROM 15700 CFS TO 18900 CFS DUE TO UPSTREAM DEVELOPMENT.

QT        2      18900      18900
NC     .025       .025       .025        .3         .5
ET                 9.1        9.1                                                          9820       10065
        DOWNSTREAM OF BRINK OF CAP OVERCHUTE NO.1 (BOR STA 470+80)
        OVERFLOW DISCHARGE HAS BEEN ADJUSTED TO ACCOUNT FOR SPLIT FLOW TO CAP
        OVERCHUTE NO.2 (BOR STA 492+04)
X1    13.00          8       9820      10065
GR   1527.0       7780     1518.5     7780.5     1518.5     7939.5     1527.0       7940     1527.0       9820
GR   1518.5     9820.5     1518.5    10064.5     1527.0      10065

ET                 9.1        9.1                                                          9820       10065
        UPSTREAM ENTRANCE TO CAP OVERCUTE NO.1
X1    13.02          8       9820      10065        120        120        120
GR   1527.0       7780       1519     7780.5       1519     7939.5     1527.0       7940     1527.0       9820
GR     1519     9820.5       1519    10064.5     1527.0      10065

NC      .04        .04        .04         .3         .5
ET                 9.1        9.1                                                          9537       10350
X1    13.04         77       9721      10130        100        100        100
GR   1531.2       7311     1526.9       7365     1526.6       7377     1527.8       7428       1527       7475
GR   1526.6       7516     1520.1       7540     1519.5       7577     1519.3       7631     1519.6       7648
GR   1518.7       7682       1519       7704     1518.1       7758     1518.4       7790     1520.6       7803
GR   1526.7       7829     1527.1       7840     1526.9       7898     1526.2       7917       1531       7961
GR   1532.2       7999       1532       8035     1532.1       8067     1532.4       8106     1537.1       8125
GR   1532.3       8139     1533.8       8206     1533.4       8257     1532.9       8297     1532.3       8355
1
   25APR00      12:00:08                                                                                    PAGE    3

GR   1532.9       8404     1533.1       8450     1533.5       8518     1533.5       8547     1533.9       8592
GR   1534.2       8649     1533.7       8711     1532.6       8807     1532.4       8944     1532.6       8993
GR     1533       9051     1532.4       9144     1533.9       9163     1536.3       9206     1537.1       9230
GR   1536.6       9261     1535.6       9288     1533.9       9315     1532.8       9358     1532.3       9408
GR   1532.3       9438     1532.1       9481     1529.4       9537     1527.9       9567     1527.1       9596
GR   1527.1       9632     1527.7       9669     1527.5       9710       1528       9721     1522.3       9749
GR   1520.2       9797     1519.6       9890     1520.1       9931     1521.2       9949     1520.1       9966
GR   1518.8       9976     1519.8      10027     1520.7      10082     1521.2      10108     1527.1      10130
GR   1526.8      10162     1526.5      10210       1527      10249     1527.4      10274     1527.5      10325
GR   1528.4      10355     1528.1      10398

NC     .069       .044       .050         .1         .3
ET                 9.1        9.1                                                          9550       10679
X1    13.08         57       9615      10182        230        230        230
GR     1532       7732       1530       7863       1528       7933       1526       8065       1525       8114
GR   1524.5       8264       1524       8409     1522.2       8469     1522.5       8605     1522.2       8621
GR   1522.8       8775     1522.9       8828       1523       8862     1522.5       8926     1521.9       8955
GR   1520.4       8966     1522.5       9024     1524.4       9127       1524       9197     1524.1       9265
GR   1524.4       9305       1524       9386     1524.3       9436     1523.7       9447     1523.6       9533
GR   1524.2       9615     1523.4       9651     1522.6       9720     1520.4       9740     1522.2       9755
GR   1522.9       9781     1524.6       9805     1520.9       9821       1521       9836     1522.2       9847
GR     1523       9886     1522.2       9978     1518.5       9992     1518.2      10002     1518.8      10008
GR   1522.4      10023       1522      10070     1521.1      10078       1522      10090       1522      10106
GR     1520      10131     1521.5      10160     1523.5      10182     1523.9      10210     1524.3      10274
GR   1524.7      10346       1526      10460     1525.8      10512     1524.4      10555     1524.5      10575
GR     1526      10616       1528      10679

NC     .038       .042       .052         .1         .3
ET                 9.1        9.1                                                          9421       10816
        NEW CROSS SECTION:  GR CARD DATA DEVELOPED FROM TOPOGRAPHIC MAPS
X1    13.16         53       9953      10288        420        425        421
GR     1534       7863       1532       8128       1530       8316       1528       8551     1526.5       8641
GR     1528       8791     1528.3       8868       1528       8888       1526       8946       1525       9139
GR     1526       9169     1526.2       9219       1526       9255     1525.3       9389       1526       9405
GR   1526.5       9421       1526       9442     1525.5       9459       1526       9481     1526.4       9632
GR     1526       9721       1525       9736       1526       9751       1528       9929     1528.3       9936
GR     1528       9943       1526       9953       1524       9963       1522       9981     1521.5       9991
GR     1522      10001       1524      10043     1524.5      10093       1524      10148       1523      10163
GR     1524      10215       1523      10220       1524      10225       1525      10235       1524      10245
GR   1523.2      10250       1524      10255       1526      10273     1526.2      10288       1526      10303
GR   1525.8      10323       1526      10349       1528      10689     1528.4      10744       1528      10774
GR   1527.5      10784       1528      10793     1529.8      10816
        CROSS-SECTION AT WHICH FLOWS TO CAP OVERCHUTES 1 AND 2 RECOMBINE.
        WSEL MATCHES AT THIS CROSS-SECTION

ET                 9.1        9.1                                                          9537       10802
X1    13.28         65       9671      10110        390        610        600
GR     1536       8217     1534.9       8297     1534.2       8552     1534.3       8677       1534       8812
GR     1532       8979       1530       9107     1529.3       9165       1530       9205       1532       9255
GR   1532.2       9337     1531.5       9390     1531.5       9439     1530.1       9484     1525.7       9507
GR   1526.0       9523     1529.8       9537     1530.1       9605     1530.9       9671     1530.2       9682
GR   1530.4       9709     1531.2       9726     1531.3       9776     1530.4       9840     1529.7       9851
GR   1530.9       9901     1531.6       9962     1530.6       9975     1522.9       9991     1522.6      10000
GR   1522.9      10034     1530.4      10052     1530.6      10083     1527.4      10097     1531.2      10110
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GR   1531.0      10143     1531.2      10169     1532.3      10193     1532.9      10222     1532.2      10250
GR   1532.2      10302     1532.2      10347     1531.6      10363     1532.0      10389     1531.1      10421
GR   1531.1      10475     1531.1      10529     1529.7      10581     1530.3      10594     1530.6      10634
GR   1530.0      10654     1530.5      10667     1529.9      10697     1531.7      10727     1532.2      10771
GR   1532.9      10840     1533.5      10884     1533.9      10956     1533.3      10961     1534.6      10969
GR   1534.9      10995     1534.0      11002     1533.5      11019     1534.9      11025     1535.4      11065
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Q100 INCREASED FROM 23300,23300 TO 26700,26700 CFS
DUE TO UPSTREAM DEVELOPMENT.

```
QT        2     26700     26700
ET                          7.1                                    9670     10602
X1    13.40        73      9670     10319       650       590     678.6
GR     1540      8520      1538      8940      1536      9105      1535      9155      1536      9197
GR   1536.2      9202      1536      9212    1535.9    9214.5      1536      9217    1536.5      9287
GR     1536      9359    1535.5      9414      1536      9474    1537.5      9641    1537.6      9670
GR   1536.4      9692    1534.6      9719    1527.4      9732    1530.8      9748    1532.1      9770
GR   1530.0      9782    1534.1      9800    1533.9      9820    1535.3      9840    1534.9      9849
GR   1535.8      9866    1536.5      9908    1537.1      9939    1536.9      9968    1535.2      9980
GR   1529.0      9994    1528.7     10000    1529.7     10010    1534.5     10033    1534.1     10063
GR   1534.3     10084    1534.3     10102    1536.0     10133    1536.4     10164    1535.0     10177
GR   1535.9     10194    1535.2     10209    1526.8     10246    1528.5     10252    1529.1     10269
GR   1537.1     10289    1537.5     10319    1536.6     10361    1535.1     10379    1535.3     10395
GR   1536.0     10422    1535.1     10447    1535.7     10465    1535.8     10514    1535.1     10539
GR   1535.0     10600    1535.4     10653    1535.5     10687    1535.0     10726    1534.3     10744
GR   1534.4     10772    1535.1     10797    1534.7     10833    1535.5     10874    1535.5     10910
GR   1535.1     10944    1534.7     11001    1535.1     11027    1539.0     11043    1538.8     11070
GR   1537.4     11080    1540.1     11101    1539.6     11142

ET                          7.1                                    9160     10494
X1    13.55        79      9688     10494       740       850     787.3
GR   1544.6      8416    1544.5      8496    1543.9      8598    1543.5      8689    1542.8      8797
GR   1542.2      8877    1541.9      8929    1541.3      8950    1540.3      8963    1539.6      8985
GR   1540.1      8993    1540.1      9040    1539.8      9081    1540.4      9104    1540.0      9157
GR   1540.8      9241    1541.2      9311    1540.5      9346    1541.0      9443    1540.2      9451
GR   1541.2      9464    1541.0      9477    1541.9      9510    1542.7      9558    1543.1      9592
GR   1543.3      9645    1543.1      9688    1541.9      9715    1539.8      9736    1540.1      9742
GR   1538.2      9757    1537.4      9776    1532.2      9787    1535.6      9804    1540.7      9828
GR   1539.7      9836    1541.7      9855    1541.6      9877    1542.0      9897    1541.4      9930
GR   1541.8      9965    1535.8      9988    1535.2     10000    1538.4     10010    1540.8     10031
GR   1540.9     10045    1540.5     10054    1541.3     10065    1541.2     10098    1541.8     10123
GR   1541.3     10132    1542.7     10150    1541.1     10176    1539.5     10191    1538.7     10208
GR   1537.7     10219    1539.2     10233    1541.4     10262    1541.1     10270    1542.0     10283
GR   1542.3     10307    1541.4     10349    1537.3     10370    1537.9     10380    1537.0     10394
GR   1538.6     10403    1541.0     10432    1542.6     10456    1543.0     10494    1544.4     10550
GR   1544.5     10623    1545.0     10680    1545.2     10743    1544.8     10802    1544.6     10856
GR   1544.2     10907    1544.1     10973    1545.1     10985    1545.3     10993

ET                 9.1      7.1                                    9055     10482      8335     10646
X1    13.66        92      9477     10486       500       540     549.1
GR   1548.4      8244    1548.9      8287    1549.0      8335    1548.3      8352    1548.2      8399
GR   1548.3      8462    1548.0      8514    1547.5      8594    1546.9      8663    1546.0      8720
GR   1545.8      8738    1544.9      8780    1544.1      8828    1543.6      8914    1543.1      8917
GR   1543.7      8921    1544.0      8985    1544.6      9048    1545.1      9086    1545.3      9138
GR   1546.1      9173    1546.5      9234    1546.3      9275    1546.0      9318    1545.7      9360
1
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GR   1545.3      9383    1545.1      9436    1544.5      9449    1545.0      9457    1544.1      9467
GR   1545.4      9477    1544.9      9492    1543.5      9512    1540.2      9528    1540.5      9540
GR   1542.2      9550    1546.6      9572    1546.4      9585    1542.7      9600    1542.8      9619
GR   1543.3      9627    1542.4      9643    1543.1      9655    1546.0      9667    1546.6      9689
GR   1546.7      9709    1546.1      9717    1546.0      9736    1544.6      9744    1546.0      9753
GR   1545.3      9775    1546.1      9791    1546.1      9829    1547.5      9852    1547.5      9878
GR   1546.7      9894    1546.7      9941    1545.9      9956    1544.6      9988    1542.1     10000
GR   1542.3     10006    1543.9     10015    1543.0     10055    1543.5     10063    1546.5     10083
GR   1546.6     10108    1546.0     10119    1547.2     10133    1546.3     10145    1547.2     10160
GR   1546.2     10177    1546.6     10193    1546.1     10207    1546.4     10246    1546.8     10280
GR   1547.3     10324    1547.3     10357    1546.7     10379    1545.6     10392    1543.2     10408
GR   1543.9     10430    1542.9     10442    1542.6     10465    1548.6     10486    1549.3     10509
GR   1549.5     10557    1549.8     10592    1549.9     10646    1549.4     10686    1549.5     10727
GR   1549.4     10784    1549.5     10846

ET                 9.1      7.1                                    8708     10232      8212     10433
        CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW
X1    13.86        90      9330     10042      1060      1050    1049.1
GR   1556.0      8212    1554.0      8550    1553.0      8600    1553.4      8617    1552.4      8685
GR   1551.6      8708    1551.5      8749    1550.6      8759    1551.7      8767    1552.1      8788
GR   1551.5      8817    1554.3      8863    1555.1      8895    1555.4      8908    1555.1      8935
GR   1555.0      8975    1555.5      9022    1556.1      9072    1556.9      9125    1557.1      9165
GR   1557.3      9223    1556.6      9242    1557.3      9263    1557.4      9298    1557.0      9319
GR   1556.1      9330    1553.5      9344    1552.5      9379    1551.4      9393    1552.9      9404
GR   1552.7      9416    1551.9      9420    1553.3      9429    1553.2      9446    1549.8      9464
GR   1549.3      9472    1549.8      9494    1553.0      9513    1553.6      9535    1553.4      9596
GR   1552.9      9605    1553.3      9613    1553.5      9634    1553.4      9666    1553.2      9716
GR   1552.5      9727    1553.4      9739    1552.6      9770    1553.6      9784    1553.4      9803
GR   1551.8      9819    1551.2      9831    1552.5      9842    1551.1      9855    1553.3      9864
GR   1553.3      9885    1551.8      9919    1549.0      9936    1549.0      9948    1551.6      9970
GR   1550.4      9983    1547.6      9991    1546.3     10000    1551.6     10009    1554.6     10023
GR   1555.7     10042    1555.6     10083    1554.3     10149    1550.9     10159    1552.6     10171
GR   1554.4     10197    1554.7     10232    1556.0     10271    1557.0     10327    1557.5     10379
GR   1557.7     10433    1557.5     10477    1557.5     10546    1557.7     10596    1557.6     10656
GR   1557.4     10695    1557.1     10752    1556.8     10820    1556.5     10873    1556.1     10945
GR   1555.9     10962    1555.7     11006    1558.1     11035    1561.0     11054    1561.7     11092

ET                 9.1      7.1                                    8805     10529      8530     10608
        CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW
X1    14.07        65      9879     10059      1050      1100    1134.1
GR   1565.4      8530      1564      8652      1562      8685    1560.7      8705    1560.7      8805
GR     1562      8920    1562.4      9043    1562.8      9116    1563.1      9185    1562.8      9201
GR   1562.8      9250    1563.3      9286    1563.7      9321    1563.4      9353    1562.5      9394
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GR   1561.5      9417    1561.4      9462    1562.3      9530    1562.4      9554    1562.0      9566
GR   1562.0      9614    1562.3      9680    1563.1      9746    1563.6      9814    1564.0      9855
GR   1564.3      9879    1560.9      9898    1561.4      9904    1558.5      9924    1558.9      9938
GR   1558.9      9959    1557.5      9972    1557.5      9978    1558.5     10000    1562.0     10020
GR   1562.6     10040    1564.5     10059    1564.0     10077    1563.5     10125    1563.1     10151
GR   1562.6     10166    1562.7     10176    1562.2     10201    1563.1     10217    1563.0     10249
GR   1563.1     10300    1563.0     10338    1563.2     10381    1563.1     10396    1562.3     10404
GR   1563.1     10408    1563.1     10454    1563.1     10499    1564.1     10516    1565.5     10571
GR   1566.0     10608    1565.9     10656    1565.8     10710    1565.6     10758    1564.7     10813
GR   1564.3     10848    1564.8     10873    1565.1     10923    1570.0     10950    1570.8     10989
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The following GR record has been modified as per discussion with the FEMA technical evaluator. From station 8450 to station 9500, the elevations are read from the topographic map. From station 9563 to station 11361, the elevations remain the same as provided by the Aerial Mapping Company, Inc (AMCI) (March 17, 1998).

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ET                          7.1                                     9210     10160
X1    14.30        73      9923     10027      1010      1210    1213.6
GR   1576.2      8450    1575.9      8550    1574.1      8650    1573.7      8750    1573.5      8850
GR   1573.4      8950    1573.3      9050    1572.5      9150    1572.5      9250    1571.9      9350
GR   1571.9      9450    1573.5      9500    1573.8      9563    1574.2      9626    1573.5      9652
GR   1573.1      9672    1573.8      9707    1573.7      9731    1573.8      9769    1573.2      9788
GR   1573.2      9836    1572.9      9878    1572.4      9906    1571.6      9923    1570.4      9941
GR   1565.1      9961    1565.2      9967    1560.0      9973    1560.3      9983    1559.6     10000
GR   1566.5     10011    1570.0     10027    1570.1     10045    1569.4     10052    1570.1     10062
GR   1571.0     10097    1571.2     10131    1571.1     10157    1572.5     10191    1572.9     10211
GR   1572.6     10251    1572.3     10297    1572.5     10351    1572.2     10386    1571.8     10410
GR   1572.1     10417    1571.7     10437    1571.7     10448    1571.5     10480    1571.6     10515
GR   1572.7     10552    1572.9     10571    1572.7     10608    1572.4     10642    1571.4     10681
GR   1571.6     10735    1571.9     10765    1572.0     10792    1571.2     10804    1571.8     10811
GR   1573.2     10852    1575.9     10899    1577.1     10931    1577.9     10967    1578.4     10992
GR   1578.7     11034    1578.6     11096    1578.4     11179    1578.2     11233    1577.7     11273
GR   1582.1     11295    1582.8     11336    1577.8     11361

ET                9.1        7.1                                     9950     10480      9283     10588
X1    14.54        65      9950     10480      1410      1150    1273.2
GR   1584.8      8984    1584.8      9072    1584.7      9160    1584.7      9220    1584.9      9283
GR   1584.7      9355    1584.5      9421    1584.2      9499    1583.8      9525    1583.4      9546
GR   1583.7      9563    1583.4      9621    1583.8      9683    1583.0      9715    1583.4      9741
GR   1582.9      9767    1583.5      9798    1583.9      9818    1584.2      9845    1584.0      9892
GR   1583.2      9926    1581.9      9950    1574.4      9970    1574.0      9986    1571.6     10000
GR   1576.7     10045    1574.9     10066    1577.8     10080    1579.5     10110    1577.7     10136
GR   1578.5     10153    1578.1     10177    1576.3     10199    1576.9     10222    1576.6     10259
GR   1577.7     10273    1577.7     10287    1578.9     10306    1578.4     10354    1578.1     10384
GR   1577.0     10410    1578.1     10416    1578.3     10428    1577.7     10437    1580.1     10458
GR   1583.0     10480    1583.8     10495    1584.2     10523    1584.8     10556    1585.0     10588
GR   1584.4     10623    1583.5     10669    1583.4     10695    1583.4     10738    1583.8     10762
GR   1584.1     10808    1583.9     10821    1583.9     10881    1584.2     10936    1584.2     10999
GR   1584.2     11072    1584.3     11131    1584.1     11205    1584.2     11269    1584.9     11381

NC     .059      .042      .039        .1        .3
        CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW
ET                          7.1                                     9700     10100
X1    14.74        37      9976     10076      1180       970    1070.9
GR   1594.6      9253    1594.6      9384    1593.5      9435    1592.2      9495    1591.7      9526
GR   1590.5      9540    1589.6      9564    1589.3      9615    1589.0      9650    1587.4      9663
GR   1587.4      9705    1587.0      9720    1588.5      9769    1588.3      9791    1587.1      9809
GR   1586.1      9837    1585.5      9853    1585.1      9871    1585.5      9891    1584.9      9917
GR   1585.0      9952    1587.3      9976    1581.8      9988    1581.8     10000    1582.1     10024
GR   1581.7     10057    1588.3     10076    1588.3     10095    1590.2     10125    1591.0     10145
GR   1591.6     10172    1591.5     10203    1591.5     10225    1591.6     10248    1591.7     10375
GR     1592     10635    1592.6     10690
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ET                          7.1                                     9600     10100
X1    14.89        49      9938     10059       700       760     756.4
GR   1601.5      9234    1601.3      9270    1599.7      9318    1598.4      9337    1597.4      9377
GR   1597.0      9406    1596.9      9434    1597.5      9460    1598.4      9477    1598.5      9494
GR   1597.0      9511    1595.3      9549    1593.2      9572    1593.5      9577    1590.8      9587
GR   1591.2      9606    1591.0      9626    1592.0      9633    1593.0      9659    1592.7      9671
GR   1593.5      9683    1593.6      9702    1592.4      9714    1592.5      9741    1592.4      9775
GR   1592.7      9804    1591.3      9817    1591.4      9847    1591.8      9869    1592.2      9890
GR   1593.0      9906    1592.5      9927    1591.9      9938    1589.9      9949    1589.9      9956
GR   1587.2      9979    1583.3      9995    1583.2     10000    1583.3     10013    1583.8     10032
GR   1588.0     10042    1596.4     10059    1597.2     10087    1598.2     10101    1599.3     10141
GR   1599.6     10186    1600.2     10236    1600.4     10284    1600.5     10319

ET                          7.1                                     9972     10390
X1    15.06        62      9972     10390       670       950     930.3
GR   1603.3      9119    1603.9      9192    1604.4      9267    1604.9      9349    1605.9      9431
GR   1606.0      9497    1606.1      9575    1606.3      9620    1606.6      9663    1606.5      9685
GR   1605.7      9707    1603.0      9733    1599.7      9751    1599.0      9759    1599.5      9764
GR   1600.1      9782    1600.6      9800    1600.6      9836    1601.4      9872    1602.1      9917
GR   1602.2      9972    1597.9      9988    1593.0     10000    1591.5     10010    1591.3     10020
GR   1594.5     10043    1593.9     10060    1595.3     10070    1597.5     10089    1598.0     10109
GR   1597.8     10126    1595.7     10138    1596.7     10152    1600.2     10174    1600.1     10205
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GR	1593.4	10229	1593.7	10246	1596.4	10268	1596.6	10283	1597.3	10298
GR	1597.8	10314	1597.1	10323	1598.4	10337	1597.4	10350	1600.0	10367
GR	1601.4	10390	1601.3	10411	1599.6	10441	1595.7	10453	1600.3	10470
GR	1600.7	10480	1602.7	10495	1603.6	10517	1605.1	10549	1606.0	10581
GR	1606.6	10621	1606.9	10667	1607.1	10713	1607.2	10776	1607.4	10855
GR	1607.4	10916	1607.6	10950						
ET		9.1	7.1				9975	10351	9503	10546
X1	15.12	61	9975	10351	255	330	283.6			
GR	1604.6	9081	1604.5	9136	1604.6	9184	1605.2	9236	1605.8	9313
GR	1606.1	9379	1606.4	9423	1606.8	9503	1606.7	9545	1606.5	9620
GR	1606.2	9665	1605.5	9703	1604.5	9754	1603.8	9762	1604.4	9792
GR	1603.5	9836	1603.5	9865	1602.9	9886	1603.3	9903	1603.9	9928
GR	1604.1	9975	1596.3	10000	1596.9	10009	1596.4	10015	1596.7	10032
GR	1595.8	10059	1600.2	10070	1601.3	10087	1601.7	10109	1602.2	10130
GR	1602.4	10144	1601.5	10156	1602.1	10176	1602.1	10205	1601.7	10213
GR	1602.2	10230	1602.8	10258	1595.4	10282	1596.7	10302	1597.2	10319
GR	1601.5	10351	1600.3	10370	1601.1	10378	1601.1	10387	1603.1	10417
GR	1603.4	10441	1603.1	10480	1602.9	10493	1603.8	10513	1604.1	10532
GR	1606.5	10546	1606.1	10564	1607.2	10587	1608.2	10621	1609.1	10657
GR	1609.8	10716	1610.4	10769	1610.7	10822	1611.1	10863	1611.2	10909
GR	1611	10955								
ET		9.1	7.1				9977	10500	9749	10672
X1	15.22	54	9977	10348	535	600	553.1			
GR	1609.2	9347	1609.6	9393	1610.2	9448	1610.9	9497	1611.3	9548
GR	1611.8	9619	1612.0	9694	1612.0	9749	1611.9	9816	1611.1	9893
GR	1610.5	9937	1609.1	9977	1599.9	9996	1599.4	10000	1599.2	10022
GR	1598.9	10041	1602.7	10057	1605.6	10077	1606.6	10091	1606.1	10113
GR	1606.8	10126	1607.7	10151	1607.9	10166	1606.7	10191	1606.0	10210
GR	1606.8	10234	1605.9	10242	1606.2	10249	1604.1	10260	1605.4	10269

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GR	1605.1	10282	1602.0	10301	1601.5	10310	1601.9	10327	1607.8	10348
GR	1608.2	10374	1608.0	10413	1607.9	10439	1604.5	10461	1607.3	10480
GR	1607.9	10507	1609.1	10527	1611.0	10570	1612.3	10605	1613.6	10657
GR	1613.8	10672	1613.4	10708	1613.6	10752	1614.3	10797	1615.1	10850
GR	1615.6	10891	1616.3	10934	1616.8	10987	1617.2	11062		
ET			7.1				9979	10353		
X1	15.41	57	9979	10353	980	950	968.9			
GR	1618.0	9542	1618.6	9643	1618.9	9676	1620.7	9683	1619.0	9694
GR	1619.4	9751	1619.7	9787	1620.0	9830	1619.2	9867	1619.4	9907
GR	1619.7	9940	1618.7	9968	1615.1	9979	1609.8	9993	1609.2	10000
GR	1608.3	10009	1607.6	10021	1609.7	10027	1610.4	10043	1610.4	10053
GR	1611.1	10058	1612.8	10070	1613.1	10077	1611.8	10085	1612.0	10096
GR	1610.1	10106	1611.9	10113	1613.0	10124	1613.0	10135	1612.5	10157
GR	1611.8	10178	1612.0	10194	1610.2	10212	1610.9	10221	1610.4	10245
GR	1609.6	10257	1609.4	10282	1608.7	10297	1610.1	10310	1611.0	10324
GR	1611.0	10333	1614.7	10353	1618.6	10383	1620.1	10403	1620.5	10426
GR	1621.2	10440	1619.6	10464	1617.9	10479	1618.1	10496	1619.3	10517
GR	1620.0	10534	1621.0	10569	1622.0	10607	1622.6	10642	1622.9	10678
GR	1623.0	10732	1623.1	10769						
ET			7.1				9890	10182		
X1	15.55	46	9935	10147	730	550	755.3			
GR	1625.7	9335	1625.5	9408	1625.7	9486	1625.9	9510	1625.7	9532
GR	1626.2	9567	1627.0	9622	1628.0	9645	1627.1	9680	1626.7	9703
GR	1626.5	9731	1626.1	9761	1625.3	9790	1623.7	9822	1622.3	9835
GR	1618.7	9858	1619.5	9869	1619.7	9906	1619.5	9935	1618.8	9954
GR	1615.4	9972	1615.3	9982	1613.8	9991	1613.9	10000	1614.7	10030
GR	1615.2	10057	1614.9	10078	1613.4	10093	1614.5	10104	1617.5	10126
GR	1619.4	10147	1620.5	10184	1620.7	10222	1620.5	10247	1620.2	10266
GR	1619.4	10278	1618.9	10314	1619.4	10326	1620.0	10343	1624.2	10368
GR	1625.0	10381	1625.1	10410	1625.3	10453	1625.2	10483	1625.1	10525
GR	1625.0	10531								
ET			7.1				9477	10116		
X1	15.75	50	9977	10102	880	1030	1048.4			
GR	1633.1	9040	1633.1	9098	1632.7	9146	1632.0	9185	1632.0	9268
GR	1631.5	9319	1630.5	9364	1630.7	9404	1629.9	9431	1626.7	9467
GR	1626.1	9481	1624.3	9500	1624.3	9515	1623.4	9534	1619.5	9549
GR	1619.5	9557	1622.4	9566	1624.1	9580	1624.8	9602	1625.6	9637
GR	1626.1	9689	1626.0	9712	1625.0	9736	1625.4	9751	1627.1	9769
GR	1628.7	9816	1628.8	9835	1627.8	9850	1628.0	9875	1628.6	9933
GR	1627.2	9944	1626.9	9963	1626.1	9967	1625.7	9977	1619.8	10000
GR	1620.1	10015	1621.2	10027	1621.5	10050	1616.7	10070	1616.3	10079
GR	1627.5	10102	1627.9	10116	1627.5	10121	1628.4	10138	1629.3	10174
GR	1630.3	10210	1631.2	10259	1631.4	10307	1631.7	10370	1631.7	10411
ET			7.1				9817	10210		
X1	15.89	58	9969	10210	700	730	738.4			
GR	1636.6	9095	1637.0	9172	1636.9	9243	1637.2	9312	1637.1	9359
GR	1637.6	9398	1638.1	9428	1637.5	9460	1634.0	9490	1630.6	9517
GR	1631.6	9522	1631.8	9539	1631.4	9550	1631.6	9571	1632.6	9626
GR	1633.3	9676	1633.4	9714	1632.5	9744	1631.7	9775	1630.9	9809
GR	1629.2	9818	1629.2	9822	1630.6	9831	1631.6	9850	1632.4	9866

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GR	1632.6	9887	1632.1	9901	1636.5	9919	1635.9	9934	1633.3	9949
GR	1633.2	9969	1632.2	9981	1626.9	10000	1627.0	10011	1628.2	10018

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GR   1627.9      10035     1626.8      10056      1626.8      10068      1630.8      10096      1630.7      10121
GR   1631.1      10172     1630.2      10182      1630.1      10194      1633.5      10210      1635.6      10224
GR   1636.1      10243     1636.9      10296      1637.0      10337      1637.2      10370      1637.1      10414
GR   1636.4      10440     1636.4      10469      1635.7      10477      1636.7      10492      1636.9      10535
GR   1637.6      10578     1637.2      10598      1637.2      10621

ET                          7.1                                          9760       10130
X1    16.07         42      9948      10130        980        840       950.3
GR   1648.3       9258     1648.3       9327      1648.3       9384      1648.1       9446      1648.0       9494
GR   1647.3       9536     1646.8       9578      1645.7       9614      1644.4       9631      1641.8       9648
GR   1641.5       9701     1641.1       9720      1638.4       9734      1637.8       9750      1639.7       9760
GR   1637.5       9781     1639.3       9791      1639.5       9822      1638.8       9854      1638.8       9877
GR   1639.4       9884     1640.1       9902      1640.1       9948      1638.8       9974      1634.8       9986
GR   1634.3      10000     1634.7      10037      1635.4      10044      1636.2      10071      1636.3      10089
GR   1635.5      10105     1635.5      10113      1643.3      10130      1644.3      10166      1645.7      10196
GR   1646.5      10222     1646.6      10267      1646.7      10315      1646.2      10350      1645.8      10392
GR   1645.6      10433     1645.5      10494

ET                          7.1                                          9600       10068
X1    16.19         54      9934      10077        540        660       645.6
GR   1652.0       9011     1652.5       9072      1652.6       9131      1652.8       9193      1652.7       9235
GR   1651.8       9260     1649.9       9281      1647.9       9326      1645.6       9377      1644.7       9385
GR   1645.2       9392     1646.1       9431      1646.6       9457      1646.3       9500      1645.4       9506
GR   1646.3       9515     1646.3       9539      1645.2       9548      1645.8       9556      1645.2       9574
GR   1643.7       9600     1641.7       9613      1640.9       9624      1641.8       9639      1641.7       9652
GR   1642.7       9664     1642.9       9687      1642.4       9695      1642.5       9709      1644.9       9730
GR   1646.3       9760     1646.9       9781      1647.2       9807      1646.2       9817      1645.8       9833
GR   1646.5       9855     1646.9       9881      1644.9       9907      1644.4       9934      1643.9       9950
GR   1638.9       9966     1639.7       9981      1637.5      10000      1637.8      10018      1637.9      10034
GR   1639.1      10048     1652.0      10077      1652.8      10101      1653.2      10139      1653.3      10192
GR   1653.0      10245     1652.7      10291      1652.4      10341      1652.2      10389

ET                          7.1                                          9760       10042
X1    16.27         50      9760      10045        400        425       422.1
GR   1655.1       9044     1655.3       9106      1655.6       9139      1655.9       9198      1656.1       9247
GR   1656.3       9283     1655.9       9326      1654.9       9357      1652.7       9394      1650.9       9404
GR   1650.4       9443     1650.5       9466      1650.7       9508      1648.7       9529      1648.6       9539
GR   1646.7       9553     1648.2       9572      1647.6       9588      1648.6       9600      1647.5       9623
GR   1649.0       9643     1650.5       9667      1650.2       9682      1650.3       9700      1649.6       9724
GR   1650.2       9760     1648.3       9771      1647.7       9798      1646.1       9816      1647.3       9835
GR   1647.9       9853     1649.6       9872      1649.9       9892      1648.8       9905      1648.9       9915
GR   1648.4       9923     1648.9       9947      1643.5       9967      1642.4       9990      1639.4      10000
GR   1639.8      10009     1640.0      10032      1654.9      10045      1655.9      10052      1656.0      10111
GR   1656.2      10158     1656.4      10207      1656.4      10255      1656.5      10316      1656.1      10391

ET                          7.1                                          9906       10430
X1    16.49         46      9906      10130       1190       1150      1153.6
GR   1667.1       9520     1667.6       9583      1667.4       9619      1665.7       9661      1665.1       9708
GR   1664.9       9776     1664.1       9808      1661.9       9841      1661.5       9871      1659.1       9888
GR   1659.2       9906     1653.7       9925      1653.9       9933      1653.8       9961      1653.3      10000
GR   1654.5      10018     1658.6      10040      1658.9      10066      1658.1      10073      1657.8      10095
GR   1659.1      10104     1659.5      10130      1653.7      10147      1654.0      10168      1653.7      10211
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GR   1655.7      10224     1655.2      10234      1655.3      10246      1656.7      10253      1657.7      10285
GR   1658.8      10316     1659.1      10335      1658.9      10371      1657.8      10413      1656.7      10420
GR   1657.4      10428     1657.6      10438      1656.8      10446      1657.6      10465      1659.8      10485
GR   1662.4      10512     1663.3      10532      1664.0      10582      1664.5      10619      1664.7      10669
GR   1664.8      10742

NC     .043        .057      .043         .1         .3
ET                          7.1                                          9940       10590
X1    16.68         51      9928      10590        940       1160       997.5
GR   1682.1       9880     1676.2       9916      1673.5       9928      1662.9       9950      1662.6       9956
GR   1666.6       9964     1666.2       9989      1662.3      10000      1662.8      10009      1662.7      10020
GR   1664.5      10025     1665.2      10043      1665.3      10076      1664.9      10100      1662.9      10107
GR   1662.9      10120     1661.5      10135      1665.1      10142      1665.4      10161      1664.6      10168
GR   1664.2      10183     1664.5      10192      1663.7      10218      1662.3      10230      1661.7      10247
GR   1662.9      10262     1664.5      10302      1664.0      10308      1663.9      10353      1664.0      10390
GR   1663.6      10437     1663.5      10463      1662.9      10470      1663.5      10479      1662.7      10511
GR   1661.8      10530     1661.3      10540      1661.3      10553      1662.3      10569      1666.8      10590
GR   1675.2      10612     1674.8      10641      1675.2      10677      1675.4      10718      1675.4      10765
GR   1675.3      10821     1675.4      10870      1675.6      10900      1675.6      10938      1676.0      10964
GR   1676.0      11005

        4-8-99: QT CHANGED TO 27300 FOR BOTH FP AND FW DUE TO THE FULL
                ENCROACHMENT THROUGH THE TRAMONTO DEVELOPMENT


QT        2      27300      27300
NC     .059        .042      .033         .3         .5
        DOWNSTREAM SIDE OF CAREFREE HIGHWAY
        BRIDGE OPENING ADJUSTED BY FACTOR OF 0.83 TO ACCOUNT FOR 34 DEG. SKEW
        ET CHANGED FROM 9788,10101
ET                          7.11                                         9774       10131
        DOWNSTREAM REACH LENGTHS FOR CROSS-SECTION 16.86 REDUCED BY 101.8 FT
        TO ACCOUNT FOR NEW CAREFREE HIGHWAY BRIDGE CONSTRUCTION.
X1    16.86         44      9895      10315      888.2       778.2      879.1        .83
        ELREA ON X3 CARD CHANGED FROM 1679.75 TO 1680.00
X3       10                                                           1683.3      1680.0
GR   1686.9       9161     1685.4       9257      1684.6       9343      1684.1       9411      1683.3       9501
GR   1683.3       9588     1683.5       9655      1684.2       9706      1684.9       9777      1685.7       9837
GR   1686.0       9895     1673.2       9932      1673.1      10000      1674.4      10014      1673.8      10071
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GR   1673.9      10138     1673.5      10177      1671.2      10272      1685.9      10315      1685.3      10391
GR   1684.3      10464     1683.2      10545      1681.8      10628      1681.4      10650      1679.7      10725
GR   1679.5      10798     1679.4      10872      1679.4      10935      1679.5      11012      1679.7      11087
GR   1679.9      11151     1680.3      11222      1679.8      11287      1680.0      11349      1679.7      11442
GR   1679.4      11522     1679.3      11595      1679.0      11664      1678.7      11742      1678.4      11818
GR   1678.3      11891     1678.1      11973      1678.4      12038      1678.2      12141

SB     1.05       1.56        2.7          0         285       10.5       4102          2      1671.2      1671.2
       UPSTREAM FACE OF CAREFREE HIGHWAY
       APPROXIMATELY 3,600 CFS DIVERTS OUT OF THE SKUNK CREEK WASH APPROX.
       1,500 FEET WEST OF THE MAIN HIGHWAY BRIDGE
       REFER TO SPLIT FLOW MODEL FROM CROSS-SECTION 16.87 TO CROSS-SECTION 17.4
       CROSS-SECTION 17.48 IS THE POINT OF FLOW MATCHING
       BT BASED UPON "AS-BUILT" PLANS ADJUSTED TO ACCOUNT FOR MAPPED CONDITIONS
1
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       ET CHANGED FROM 9806,10117
ET                 9.1        7.11                                          9681       10124       9681       10124
       DOWNSTREAM REACH LENGTHS FOR CROSS-SECTION 16.87 INCREASED TO 146 FT TO
       REFLECT THE ADDITION OF THE SOUTHERN HALF OF THE CAREFREE HIGHWAY
       BRIDGE.  THE 146-FT BRIDGE IS MEASURED ALONG THE SKEW, PARALLEL
       TO THE FLOW.
X1    16.87         43       9918       10337        146        146        146        .83
X2        0          0          1      1684.1    1688.08          0          0       1.33        .83

       ELREA ON X3 CARD CHANGED FROM 1679.75 TO 1680.00

X3       10                                                                      1683.3     1680.00
BT       13       9175       1687                  9373      1684.7                 9701      1683.3
BT     9885     1685.6                   9918     1685.7                  10102     1686.0                 10337
BT   1685.8                 10365     1685.6                 10561     1682.3                 10745     1679.9
BT               10831     1679.7                 10902     1679.5                 10966     1679.9
GR     1687       9175     1685.7       9256     1685.5       9279     1684.7       9373     1683.5       9468
GR   1683.4       9554     1683.2       9635     1683.3       9701     1684.5       9777     1685.6       9885
GR   1685.7       9918     1673.2       9948     1673.5      10000     1673.5      10014     1674.4      10028
GR   1674.3      10102     1674.2      10171     1672.6      10243     1671.2      10280     1685.8      10337
GR   1685.6      10365     1685.2      10454     1683.1      10561     1681.7      10662     1679.9      10745
GR   1679.7      10831     1679.7      10902     1679.5      10966     1679.9      11058     1679.6      11136
GR   1679.9      11267     1680.1      11338     1679.7      11402     1679.2      11503     1678.8      11575
GR   1678.6      11644     1678.1      11715     1678.0      11798     1677.7      11859     1677.8      11957
GR   1678.2      12043     1678.4      12099     1678.3      12177

QT        2      27300      27300
NC     .059       .042       .033         .1         .3

       GR DATA FOR SECTIONS 16.96 TO 17.95 IS BASED UPON ONE-FOOT MAPPING
       FROM CARTER-BURGESS DIGITAL TERRAIN MODEL. DATE: 2-24-99

       GR ELEVATIONS FOR SECTIONS 16.96 TO 17.95 ARE BASED UPON
       CITY OF PHOENIX DATUM.  MONTGOMERY-WATSON GR DATA ARE BASED UPON
       NGVD 1927 DATUM.  THE GR DATA FOR SECTIONS 16.96 TO 17.95 ARE
       RAISED BY 0.21 FEET ON THE X1 CARD FOR CONVERSION TO THE
       NGVD 1927 DATUM.

       LEFT ET CHANGED FROM 9889,9506 TO 9914 FOR BOTH FP AND FW

       4-8-99: RIGHT FW ET CHANGED FROM 10450 TO 10389
       4-8-99: RIGHT FP ET CHANGED FROM 11080 TO 10408

ET                 9.1        7.1                                          9914       10389       9914       10409
X1    16.96         61       9932       10342        410        600      456.2        1.0       0.21
GR   1684.1    9539.39    1680.00     9594.54     1682.00    9637.67    1680.00    9655.49    1680.00    9757.68
GR   1678.5    9807.96    1678.00     9870.41     1678.00    9902.01    1684.00    9929.31       1684       9932
GR   1684.0    9947.83     1678.0        9966     1677.71    9988.98    1676.00   10007.22    1676.00   10075.82
GR   1679.4   10134.07    1679.9    10257.04     1682.44    10270.3    1682.91   10282.57    1684.29   10307.33
GR   1684.7      10342    1685.2    10383.59      1685.6   10435.94    1684.59   10503.13    1681.61   10542.21
GR   1681.7   10567.46    1684.5    10601.12      1685.0   10660.64    1685.14    10704.2    1685.85   10830.52
GR   1686.6    10864.9    1688.5    10909.44     1688.7    10920.87    1688.46   10970.87    1688.21    11018.3
GR   1688.4   11061.63    1687.9    11137.84     1687.9    11246.93    1687.23   11567.48    1686.77   11645.69
GR   1686.1   11668.64    1685.0    11730.35     1682.7    11795.39    1683.11    11904.8    1683.60   11972.35
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GR   1680.6   11995.13    1681.3    12009.48     1680.0    12021.63    1680.01   12033.37    1683.12    12052.5
GR   1684.1   12068.44    1683.2    12108.19     1683.9    12127.91    1683.29   12159.06    1683.75   12199.78
GR   1684.7   12221.54    1685.3    12302.92     1686.2    12482.15    1686.01   12553.87    1686.23   12583.61
GR   1685.8   12619.86

       4-8-99: RIGHT FW ET CHANGED FROM 10513 TO 10490
       4-8-99: RIGHT FP ET CHANGED FROM 10899 TO 10513
       4-8-99: LEFT FP ET CHANGED FROM 9451 TO 9533

ET                 9.1        7.1                                          9650       10490       9533       10513
X1    17.06         68       9947       10090        630        440      566.0                   0.21
GR   1694.0    9385.95    1693.95     9443.14     1690.00    9475.62    1690.00    9497.53    1688.00    9557.26
GR   1684.0    9581.93    1682.31     9621.41     1686.00    9643.26    1686.00    9763.42    1684.00    9806.79
GR   1684.0    9929.44    1682.68        9947     1681.50    9963.19    1680.00    9982.51    1682.00    9988.59
GR   1682.0   10002.50     1678.0    10029.28     1678.00    10052.12    1684.48   10064.34    1686.00   10069.46
GR   1687.9      10090    1689.0    10122.23     1689.3    10215.28    1688.00   10336.61    1688.10   10396.62
GR   1687.8   10487.99    1688.0    10511.72     1687.4    10522.16    1688.38   10572.12    1688.62   10626.53
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GR	1689.6	10646.45	1690.6	10749.60	1690.3	10800.60	1690.98	10928.08	1690.54	11030.08
GR	1690.9	11081.08	1690.9	11116.85	1690.4	11217.90	1690.40	11307.94	1690.05	11414.59
GR	1688.9	11515.03	1688.4	11541.26	1687.2	11553.62	1688.71	11570.43	1688.71	11611.26
GR	1686.9	11659.40	1686.6	11686.45	1689.0	11715.46	1689.84	11790.80	1690.01	11846.52
GR	1691.6	11921.73	1691.6	11976.53	1690.2	12032.71	1690.45	12064.67	1689.28	12092.70
GR	1687.0	12101.40	1689.2	12110.11	1686.7	12121.50	1687.03	12132.17	1690.17	12142.33
GR	1688.6	12152.05	1690.3	12176.39	1690.4	12191.90	1689.44	12200.38	1691.39	12313.66
GR	1691.5	12385.08	1691.0	12479.24	1692.1	12605.82				

NC	.048	.048	.046	.1	.3

CHANGED LEFT FW ET FROM 9697 TO 9788

4-8-99: RIGHT FW ET CHANGED FROM 10672 TO 10668
4-8-99: RIGHT FP ET CHANGED FROM 10839 TO 10710
4-8-99: LEFT FP ET CHANGED FROM 9590 TO 9746

ET		9.1	7.1				9788	10668	9746	10710
X1	17.18	56	9978	10254	610	510	600.8		0.21	
GR	1699.8	9493.99	1697.06	9664.32	1695.56	9715.97	1694.00	9779.51	1692.05	9808.56
GR	1693.2	9845.85	1692.49	9935.01	1692.00	9963.19	1688.74	9978	1686.00	9990.45
GR	1686.0	10011.48	1690.0	10053.30	1690.00	10123.73	1687.29	10145.22	1686.00	10162.51
GR	1688.0	10206.89	1688.0	10244.97	1689.35	10254	1694.00	10284.66	1696.00	10342.46
GR	1695.4	10386.32	1695.1	10446.24	1694.00	10516.41	1693.77	10575.40	1693.06	10655.64
GR	1694.5	10749.27	1695.8	10806.19	1695.72	10933.46	1696.0	10997.29	1695.9	11083.48
GR	1696.1	11089.79	1696.5	11108.75	1695.63	11237.26	1694.8	11322.92	1693.7	11408.60
GR	1692.9	11445.19	1692.4	11459.18	1693.31	11474.48	1692.3	11499.27	1692.8	11568.83
GR	1693.0	11665.60	1693.9	11794.13	1694.57	11930.31	1695.5	12034.58	1695.9	12115.02
GR	1695.7	12238.17	1695.9	12285.64	1692.73	12313.61	1692.5	12332.10	1696.4	12352.81
GR	1695.9	12381.62	1696.6	12395.49	1696.08	12435.45	1696.7	12500.30	1698.0	12576.83
GR	1698.2	12621.60								

CHANGED LEFT ET FROM 9670 TO 9628

4-8-99: RIGHT FP ET CHANGED FROM 11686 TO 10590

1

4-8-99: LEFT FP ET CHANGED FROM 9451 TO 9568

ET		9.1	7.1				9628	10535	9568	10590
X1	17.30	53	9970	10156	630	580	644.4		0.21	
GR	1710.5	9112.36	1710.00	9177.76	1709.63	9217.43	1704.60	9322.93	1704.00	9419.22
GR	1703.9	9448.82	1701.30	9534.19	1700.00	9566.96	1700.00	9598.26	1698.00	9656.94
GR	1698.0	9720.94	1697.35	9761.09	1698.00	9881.54	1697.02	9933.98	1696.00	9946.95
GR	1692.0	9962.55	1692	9970	1692.00	10031.21	1694.00	10063.76	1696.00	10074.95
GR	1696.0	10119.18	1697.2	10156	1697.7	10169.28	1698.00	10277.48	1696.00	10295.67
GR	1696.1	10308.57	1698.0	10327.84	1698.0	10437.49	1700.00	10523.21	1700.30	10569.87
GR	1700.6	10584.84	1699.9	10675.27	1700.1	10755.39	1699.09	10873.25	1698.71	10927.80
GR	1699.6	11081.73	1699.2	11129.84	1699.4	11231.27	1700.25	11358.81	1700.39	11481.95
GR	1700.5	11585.67	1702.2	11666.67	1700.7	11730.00	1700.10	11772.84	1699.51	11807.15
GR	1696.2	11820.90	1696.9	11838.62	1700.5	11855.95	1700.12	11882.17	1700.24	11925.03
GR	1701.8	11987.03	1701.9	12128.46	1702.0	12183.66				

4-8-99: RIGHT FP ET CHANGED FROM 11369 TO 10508

ET		9.1	7.1				9758	10471	9731	10508
X1	17.39	55	9893	10179	465	530	500.0		0.21	
GR	1711.1	9116.73	1710.00	9167.22	1710.00	9190.00	1707.78	9326.23	1706.00	9403.55
GR	1706.0	9430.65	1705.12	9471.20	1704.74	9555.58	1704.99	9664.90	1705.40	9710.74
GR	1703.9	9779.45	1702.00	9887.09	1697.84	9893	1698.00	9898.69	1698.00	9920.72
GR	1700.0	9928.58	1696.0	9951.05	1696.00	9973.40	1698.00	9991.02	1700.00	10057.52
GR	1700.0	10099.04	1698.0	10111.87	1698.00	10131.69	1702.00	10144.53	1702.00	10170.78
GR	1701.3	10179	1700.0	10195.61	1702.0	10231.60	1702.16	10316.97	1702.77	10463.14
GR	1703.1	10621.24	1703.1	10798.44	1702.8	10893.36	1702.71	10911.99	1702.16	10938.60
GR	1703.1	10984.81	1703.6	11071.94	1704.0	11149.81	1704.00	11216.87	1704.77	11322.45
GR	1704.5	11451.58	1704.3	11532.28	1705.1	11566.52	1702.62	11580.13	1704.07	11595.54
GR	1702.3	11601.47	1702.4	11622.56	1705.9	11645.05	1704.94	11673.91	1704.89	11732.23
GR	1705.4	11786.90	1704.9	11887.47	1705.2	11960.19	1704.78	12035.23	1704.18	12058.85

NC	.06	.060	.042	.1	.3
QT	2	27300	27300		

4-8-99: RIGHT FP ET CHANGED FROM 11597 TO 10383
4-8-99: LEFT FP ET CHANGED FROM 9404 TO 9478

ET		9.1	7.1				9488.92	10340	9478	10383

APPROX. 3,600 CFS DIVERTS INTO RIGHT OVERBANK FROM THIS CROSS-SECTION
DOWNSTREAM. REFER TO SPLIT FLOW MODEL FOR RIGHT OVERBANK ANALYSIS.
FLOODWAY ANALYSIS USES ENTIRE FLOW AND IS STRICTLY FOR MAIN CHANNEL.

X1	17.48	40	9893	10073	429	429	429.4		0.21	
GR	1716.0	9372.88	1710.84	9458.51	1708.00	9485.84	1708.00	9544.18	1707.25	9597.50
GR	1706.6	9679.17	1706.00	9739.84	1706.00	9877.04	1702.68	9893	1702.00	9936.69
GR	1702.0	10037.70	1704.40	10047.62	1706.00	10063.16	1706.00	10073	1706.00	10247.95
GR	1706.5	10301.08	1706.8	10455.69	1706.73	10561.82	1706.57	10600.14	1706.88	10693.59
GR	1707.2	10757.24	1708.0	10805.71	1708.14	10845.01	1709.12	10975.02	1708.96	11014.26
GR	1707.7	11046.61	1707.6	11059.28	1708.52	11074.56	1706.96	11086.14	1708.52	11099.03

1

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GR   1707.8   11126.83     1708.7   11136.13     1704.10   11173.88     1706.87   11188.45     1707.99   11249.19
GR   1708.8   11382.36     1709.3   11482.61     1709.58   11541.69     1710.44   11616.42     1711.83   11696.98
```

4-8-99: ADDED RIGHT FP ET AT 10302
4-8-99: ADDED LEFT FP ET AT 9440

```
ET                 9.1       7.1                                        9516.45     10263       9440     10302
X1   17.57          33      9923     10040       365       500          474.4                   0.21
GR   1720.8    9203.88   1716.95    9303.56   1715.14   9335.15       1714.09    9428.56    1714.36    9471.01
GR   1710.0    9508.10   1711.13    9548.25   1712.00   9576.05       1712.00    9686.77    1708.00    9871.91
GR   1706.0    9897.50   1706.00      9923    1702.00   9930.23       1703.39    9971.46    1706.17   10007.46
GR   1708.7   10020.08   1710.00     10040    1708.32  10114.97       1711.29   10161.60    1712.00   10169.27
GR   1712.0   10401.97   1711.82  10474.54    1711.46  10628.12       1710.00   10672.93    1708.32   10688.83
GR   1710.0   10716.66   1710.06  10827.37    1711.41  10887.64       1713.38   11026.76    1713.78   11097.48
GR   1714.3   11153.34   1714.48  11225.31    1715.18  11289.40
```

4-8-99: ADDED RIGHT FP ET 10314

```
ET                 9.1       7.1                                        9423.70     10270       9350     10305
X1   17.65          31      9924     10021       370       500          460.8                   0.21
GR   1734.7    9336.28   1726.00    9382.74   1716.00   9413.87       1714.00    9475.55    1712.00    9482.60
GR   1712.5    9493.88   1713.77    9550.02   1713.27   9594.24       1714.00    9630.30    1713.10    9665.77
GR   1714.0    9812.95   1711.89    9899.02   1708.00   9912.78       1707.04       9924    1704.00    9959.39
GR   1704.0    9984.01    1708.1    9992.68   1710.00  10000.49       1711.07      10021    1714.00   10077.36
GR   1715.2   10133.98    1715.9   10205.53    1714.2   10358.37       1713.30   10370.66    1712.00   10376.05
GR   1712.0   10399.95    1714.0   10455.92    1715.9   10593.80       1716.54   10726.83    1718.00   10854.12
GR   1718.1   10903.11
```

REMOVED LEFT ET 9615

4-8-99: RIGHT FP ET CHANGED FROM 10607 TO 10610

```
ET                 9.1       7.1                                        9642.06     10578       9600     10610
X1   17.78          28      9931     10026       490       720          661.3                   0.21
GR   1751.5    9514.89   1741.31    9570.53   1732.00   9599.65       1721.18    9627.65    1716.00    9684.50
GR   1718.0    9717.21   1718.27    9765.64   1720.00   9841.50       1720.00       9931    1720.00    9955.49
GR   1714.0    9973.26    1714.0    9988.08   1713.17      10026      1716.00   10070.76    1716.23   10151.26
GR   1715.8   10235.37    1718.0   10282.17   1720.00  10309.14       1720.00   10385.19    1716.00   10409.40
GR   1716.0   10447.79    1720.0   10488.02   1720.00  10527.03       1722.00   10585.51    1722.00   10781.23
GR   1723.6   10884.80    1724.0   10986.97   1724.69  11024.28
```

REMOVED LEFT ET 9770

4-8-99: ADDED RIGHT FP ET AT 10706

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```
ET                 9.1       7.1                                        9745.39     10665       9700     10706
X1   17.84          29      9925     10219       310       310          341.7                   0.21
GR   1730.7    9670.69   1728.76    9713.32   1724.00   9753.84       1720.00    9772.54    1720.44    9790.38
GR   1722.1    9800.90   1724.00    9834.61   1724.00   9909.89       1723.00       9925    1722.00    9940.13
GR   1719.4    9955.16    1718.0   10029.40   1718.00  10048.88       1718.00   10133.86    1720.00   10164.50
GR   1720.1      10219    1722.0   10230.85   1722.00  10374.53       1723.13   10440.30    1722.38   10487.83
GR   1720.0   10533.75    1720.0   10579.92   1722.00  10616.26       1722.00   10663.58    1724.00   10716.91
GR   1724.5   10765.44    1725.3   10867.86   1725.36  10903.95       1726.37   11049.41
```

CLOUD ROAD CROSSES THROUGH THIS CROSS-SECTION.
3-60" CMPS:CAPACITY IGNORED
REMOVED LEFT ET 9845

```
ET                           7.1                                        9818.68     10595
X1   17.95          42      9867     10047       500       520          563.8                   0.21
GR   1740.3    9755.02   1730.00    9818.34   1726.64   9852.10       1726.15       9867    1725.94    9873.24
GR   1724.0    9879.76    1724.0    9941.90   1722.00  10021.83       1722.00   10042.15    1723.30      10047
GR   1726.5   10058.87    1726.0   10131.78    1726.8   10166.46       1726.86   10219.74    1728.00   10281.54
GR   1728.0   10340.58    1726.0   10351.82    1724.0   10391.92       1724.22   10410.16    1728.00   10440.86
GR   1728.0   10470.78    1726.5   10517.06    1726.0   10529.03       1722.85   10545.77    1728.15   10569.84
GR   1730.0   10647.71    1730.1   10713.11    1730.0   10858.38       1729.75   10888.71    1730.00   11036.40
GR   1731.1   11046.39    1734.0   11060.67    1731.9   11064.15       1734.74   11068.55    1752.62   11081.31
GR   1754.9   11117.17    1762.6   11121.41    1773.7   11131.30       1795.88   11138.65    1761.77   11146.48
GR   1754.6   11150.26    1844.6   11242.14
```

END OF CARTER-BURGESS ONE-FOOT CONTOUR MAPPING.

MONTGOMERY-WATSON TWO-FOOT INTERVAL CONTOUR MAPPING RESUMES.
ENCROACHMENT INSERTED AT SECTION 18.09 TO CONTAIN FLOODPLAIN

```
QT        2     27700     27700
ET                           7.1                                           9895     10610
X1   18.09          60      9936     10310     712.5       375          705.8
GR   1788.5       9672    1784.1      9713    1776.9      9762         1771.6      9792    1748.2      9828
GR   1733.9       9855    1732.7      9862    1729.9      9872         1729.7      9880    1731.3      9885
GR   1730.9       9900    1727.3      9919    1730.5      9936         1727.5      9951    1728.2      9971
GR   1728.2       9991    1727.4     10000    1727.8     10006         1728.8     10065    1729.6     10076
```

```
GR   1731.3     10090     1731.8     10119     1731.7     10178     1730.9     10226     1729.9     10264
GR   1726.2     10280     1725.9     10290     1733.0     10310     1732.9     10333     1731.3     10380
GR   1730.4     10407     1729.1     10447     1728.6     10497     1729.1     10522     1723.5     10540
GR   1723.7     10556     1728.6     10573     1731.4     10597     1733.6     10633     1734.3     10663
GR   1734.2     10717     1733.5     10772     1732.5     10799     1732.3     10847     1732.4     10899
GR   1732.3     10935     1733.1     10974     1733.0     11013     1732.8     11076     1733.3     11132
GR   1733.7     11210     1734.0     11263     1734.7     11349     1735.8     11423     1736.6     11479
GR   1737.7     11538     1738.0     11570     1738.6     11595     1739.1     11632     1739.7     11661
1
   25APR00      12:00:08                                                                          PAGE   16


NC     .055       .055       .030
ET                           7.1                                     9752      10425
X1    18.16         34       9836     10075       345       360     377.6
X2                                                                                                  15
GR   1755.1       9687     1739.9      9711     1736.1      9724     1734.0      9754     1730.7      9768
GR   1730.5       9775     1733.9      9788     1735.2      9810     1735.2      9836     1734.7      9860
GR   1733.3       9877     1732.7      9892     1732.9      9911     1732.5      9951     1732.5      9981
GR   1729.6       9996     1729.6     10000     1729.6     10020     1728.8     10050     1739.0     10075
GR   1737.8      10078     1737.2     10095     1735.8     10124     1734.7     10139     1734.0     10155
GR   1733.5      10199      1730      10330      1730      10380      1734      10430      1736      10650
GR   1736.9      10750      1738      10930      1738      11040      1740      11130
        NEW CROSS SECTION: GR CARD DATA FOR 18.20 DEVELOPED FROM TOPOGRAPHIC MAP
        CROSS SECTION ADDED TO MODEL FLOW OVER CLOUD ROAD
        CAPACITY OF 3-60" CMPS IGNORED

ET                           7.1                                     9630      10330
X1    18.23         19       9800     10010       370       400       370
GR     1750       9510      1740      9550      1736      9640      1734      9650      1736      9660
GR     1736       9690      1735      9700      1736      9710      1738      9780      1738      9800
GR     1736       9930      1734      9950      1732      9965      1730     10000    1738.8     10010
GR     1740      10240      1740     10480      1740     10730      1742     10870

ET                           7.1                                     9630      10330
X1    18.29         57       9914     10049       200       310       300
GR   1750.9       9535     1741.6      9583     1737.2      9597     1739.5      9608     1739.1      9634
GR   1737.5       9647     1732.6      9660     1737.5      9678     1739.3      9712     1740.2      9758
GR   1740.1       9788     1739.1      9800     1739.7      9812     1738.7      9832     1735.8      9852
GR   1737.4       9872     1738.3      9914     1737.0      9932     1735.5      9949     1735.0      9968
GR   1734.0       9976     1734.6      9984     1734.3     10000     1735.5     10009     1735.3     10020
GR   1733.5      10029     1739.9     10049     1740.5     10076     1740.0     10115     1736.1     10130
GR   1734.7      10144     1736.9     10160     1738.4     10185     1742.0     10213     1742.5     10244
GR   1742.8      10266     1742.2     10270     1742.8     10286     1742.8     10318     1742.7     10349
GR   1742.8      10388     1742.5     10395     1742.5     10429     1742.2     10468     1742.6     10472
GR   1742.5      10553     1741.1     10565     1742.8     10574     1743.2     10607     1743.0     10634
GR   1743.3      10693     1744.6     10746     1744.9     10795     1745.6     10858     1746.0     10899
GR   1747.1      10970     1747.8     11035

NC     .055       .055       .042
ET                           7.1                                     9832      10475
X1    18.49         63       9832     10037      1162.5       850     1099.7
GR   1762.2       9699     1754.7      9727     1746.3      9755     1747.1      9766     1747.4      9792
GR   1747.4       9832     1745.9      9853     1742.7      9867     1743.3      9895     1744.9      9909
GR   1744.8       9930     1744.6      9965     1741.7      9985     1741.9     10000     1745.2     10015
GR   1746.9      10037     1746.9     10052     1746.2     10060     1745.8     10072     1747.3     10082
GR   1747.8      10111     1748.7     10142     1748.9     10167     1749.0     10202     1748.9     10243
GR   1748.7      10282     1748.2     10327     1748.0     10379     1747.8     10394     1746.5     10406
GR   1747.4      10417     1743.7     10434     1744.0     10445     1746.9     10464     1742.3     10481
GR   1746.3      10497     1748.9     10522     1750.3     10562     1751.2     10602     1751.4     10637
GR   1751.9      10676     1752.2     10727     1752.5     10780     1752.7     10817     1753.1     10834
GR   1753.7      10873     1754.2     10897     1754.5     10951     1754.9     10998     1755.3     11036
GR   1755.7      11087     1757.1     11131     1757.6     11137     1757.6     11163     1759.2     11194
GR   1759.0      11230     1759.4     11254     1760.4     11285     1761.5     11316     1763.0     11352
GR   1766.6      11387     1769.6     11411     1778.1     11458
1
   25APR00      12:00:08                                                                          PAGE   17


NC     .040       .040       .030
ET                           7.1                                     9700      10480
X1    18.57         62       9947     10041       275       675     389.0
GR   1785.6       9578     1759.3      9624     1751.3      9644     1748.8      9663     1748.5      9671
GR   1746.0       9703     1743.7      9714     1743.5      9735     1746.6      9747     1749.2      9772
GR   1750.4       9819     1750.1      9829     1750.3      9832     1751.1      9879     1752.5      9926
GR   1752.5       9947     1745.1      9969     1744.4     10000     1744.4     10001     1745.5     10006
GR   1745.9      10014     1751.5     10041     1749.2     10062     1751.5     10076     1751.5     10102
GR   1750.9      10116     1751.2     10146     1752.4     10170     1752.3     10224     1751.4     10247
GR   1752.2      10263     1753.1     10302     1753.6     10332     1753.3     10360     1753.7     10386
GR   1751.0      10400     1753.4     10416     1752.6     10452     1752.5     10474     1751.8     10490
GR   1752.7      10507     1752.8     10528     1754.2     10560     1755.2     10585     1756.5     10600
GR   1757.0      10645     1757.7     10678     1757.9     10717     1758.1     10766     1758.8     10820
GR   1759.2      10862     1760.1     10915     1760.2     10941     1760.5     10950     1760.8     10964
GR   1760.4      10993     1760.2     11007     1761.1     11021     1761.8     11048     1765.7     11082
GR   1770.4      11111     1776.8     11148

QT        2      27300      27300
ET                 9.1        7.1                                     9380      10125      9321      10244
X1    18.74         69       9975     10142       750       650     917.8
GR   1770.0       9245     1770.1      9249     1763.2      9269     1763.1      9291     1762.2      9321
GR   1760.3       9332     1758.0      9362     1757.6      9377     1752.0      9388     1754.6      9404
GR   1753.8       9417     1750.4      9437     1750.7      9454     1754.9      9479     1756.6      9493
GR   1756.7       9528     1756.7      9552     1757.1      9583     1757.8      9616     1758.2      9656
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GR   1758.9      9692    1760.0      9729    1759.4      9750    1759.8      9767    1758.1      9791
GR   1758.5      9814    1759.2      9851    1759.0      9883    1758.5      9908    1757.0      9924
GR   1757.7      9938    1757.7      9975    1755.1      9986    1755.0     10000    1755.2     10018
GR   1755.3     10042    1757.7     10056    1758.5     10111    1758.7     10142    1759.6     10163
GR   1760.5     10198    1760.9     10244    1760.1     10281    1759.2     10318    1759.3     10336
GR   1759.6     10361    1759.5     10381    1759.2     10434    1761.4     10471    1763.1     10502
GR   1763.6     10533    1763.5     10581    1763.1     10628    1763.7     10660    1763.7     10706
GR   1763.6     10752    1763.6     10796    1763.9     10855    1763.8     10889    1761.9     10896
GR   1763.9     10910    1764.0     10932    1766.7     10947    1766.0     10962    1764.0     10991
GR   1762.8     11003    1766.7     11018    1768.5     11036    1779.0     11093

ET                 9.1       7.1                                   9576     10140       9470     10165
X1    18.84        46      9915     10036      500       325     497.1
GR   1772.3      9380    1771.7      9419    1770.8      9450    1764.5      9475    1756.9      9503
GR   1757.6      9512    1758.4      9522    1758.5      9531    1757.4      9538    1759.8      9557
GR   1759.9      9576    1758.7      9586    1759.6      9597    1759.6      9604    1758.6      9612
GR   1760.0      9620    1760.6      9649    1760.6      9679    1761.0      9702    1759.8      9721
GR   1760.5      9732    1760.6      9768    1759.8      9784    1759.8      9797    1761.3      9818
GR   1763.1      9848    1763.4      9888    1763.2      9915    1759.9      9942    1758.0      9987
GR   1755.9     10000    1755.7     10008    1762.6     10036    1763.3     10051    1762.5     10101
GR   1760.8     10107    1762.3     10115    1764.2     10145    1765.5     10182    1766.0     10209
GR   1765.0     10231    1765.0     10258    1765.5     10308    1764.9     10357    1765.4     10413
GR   1765.4     10417
1
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ET                          7.1                                   9639     10480
X1    18.96        70      9924     10021      525       600     631.7
GR   1779.1      9326    1778.7      9377    1776.0      9418    1774.9      9427    1773.9      9442
GR   1769.0      9458    1767.7      9482    1766.0      9489    1767.1      9496    1767.3      9514
GR   1767.0      9536    1768.0      9545    1768.8      9570    1768.6      9607    1768.1      9640
GR   1767.9      9649    1767.8      9687    1767.3      9714    1767.7      9726    1767.9      9764
GR   1767.6      9796    1768.2      9809    1768.3      9837    1768.6      9862    1768.2      9894
GR   1768.0      9924    1762.2      9931    1762.6      9938    1762.6      9959    1762.9     10000
GR   1763.3     10007    1766.3     10021    1767.2     10035    1767.2     10043    1766.0     10055
GR   1766.9     10069    1765.7     10100    1766.7     10107    1766.3     10125    1764.5     10137
GR   1769.4     10159    1771.0     10193    1770.9     10235    1770.5     10281    1769.0     10317
GR   1768.7     10347    1767.5     10358    1768.8     10370    1768.8     10401    1767.4     10408
GR   1768.5     10414    1769.0     10436    1769.7     10455    1770.2     10515    1770.5     10574
GR   1770.6     10644    1770.7     10686    1770.9     10731    1771.0     10781    1771.3     10818
GR   1771.2     10877    1772.4     10930    1773.1     10975    1773.1     11027    1773.4     11087
GR   1773.8     11135    1773.9     11195    1774.3     11217    1774.5     11277    1774.6     11298

NC     .031      .031      .045
ET                          7.1                                   9485     10315
X1    19.07        67      9928     10068      680       500     601.0
GR   1782.6      9213    1779.1      9244    1776.5      9266    1775.1      9296    1775.1      9326
GR   1775.0      9352    1775.0      9406    1774.8      9426    1773.3      9467    1772.0      9515
GR   1770.3      9537    1769.6      9556    1768.1      9569    1770.4      9586    1771.6      9614
GR   1772.0      9641    1773.6      9656    1773.2      9691    1772.0      9711    1769.5      9724
GR   1771.8      9748    1772.9      9783    1772.1      9806    1772.2      9842    1772.3      9876
GR   1772.6      9909    1771.9      9928    1770.5      9952    1771.6      9969    1768.0      9985
GR   1764.8     10000    1764.8     10007    1766.5     10022    1767.0     10047    1773.1     10068
GR   1773.7     10092    1773.3     10141    1772.6     10157    1773.2     10164    1773.6     10198
GR   1773.9     10246    1775.1     10274    1775.3     10315    1775.0     10361    1774.5     10402
GR   1774.0     10441    1773.4     10485    1773.6     10509    1773.5     10558    1773.8     10573
GR   1774.1     10632    1774.4     10679    1775.2     10711    1775.1     10731    1775.4     10750
GR   1775.7     10774    1775.7     10827    1776.0     10882    1777.1     10923    1777.8     10971
GR   1778.3     11014    1779.1     11069    1779.6     11099    1779.4     11110    1780.0     11128
GR   1780.4     11163    1781.1     11196
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From Cross section 19.18 to Cross section 20.62, the floodplain and the floodway boundaries are made coincident on the right overbank only. As per discussion with the FEMA technical evaluator, this is done to include, the low flow channel on the right overbank of the Skunk Creek Wash, within the floodway boundary. (March 17, 1998)

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ET                          7.1                                   9330     10076
X1    19.18        68      9874     10080      460       720     598.7
GR   1795.7      8834    1795.3      8905    1794.5      8989    1793.6      9042    1792.7      9078
GR   1791.3      9114    1788.0      9152    1782.9      9213    1780.0      9246    1778.8      9281
GR   1778.2      9312    1777.6      9367    1776.3      9382    1775.6      9399    1773.5      9415
GR   1778.7      9430    1776.1      9442    1776.5      9452    1778.7      9465    1778.8      9479
GR   1774.7      9493    1775.1      9514    1777.0      9534    1777.6      9568    1778.0      9625
GR   1776.9      9638    1777.0      9649    1779.0      9672    1779.1      9722    1779.0      9764
GR   1778.2      9774    1778.8      9813    1778.5      9834    1779.4      9854    1779.4      9874
GR   1777.1      9906    1777.0      9918    1774.7      9926    1775.9      9943    1773.9      9980
GR   1771.2     10000    1770.0     10006    1770.1     10025    1775.5     10040    1775.8     10055
1
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GR   1781.1     10080    1781.4     10135    1782.1     10202    1782.2     10254    1781.8     10305
GR   1781.8     10344    1781.6     10403    1781.1     10410    1781.3     10438    1781.4     10534
GR   1781.9     10600    1783.0     10659    1783.1     10688    1783.2     10727    1783.6     10758
GR   1784.1     10796    1784.4     10857    1785.3     10925    1786.0     10969    1787.5     11042
GR   1788.4     11098    1788.4     11158    1788.6     11224

ET                 9.1       7.1                                   9430     10065       9391     10110
X1    19.26        63      9981     10061      500       300     416.4
GR   1802.4      8946    1802.1      9041    1801.9      9101    1801.3      9177    1800.7      9213
GR   1798.0      9258    1793.5      9307    1787.2      9361    1785.3      9382    1783.0      9425
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GR	1781.7	9434	1783.4	9446	1783.2	9458	1780.8	9466	1781.0	9478
GR	1783.2	9490	1784.1	9541	1782.4	9573	1782.3	9594	1783.1	9602
GR	1782.2	9634	1782.9	9645	1782.2	9675	1781.9	9708	1779.9	9715
GR	1780.1	9723	1779.1	9740	1780.5	9759	1780.0	9812	1780.5	9819
GR	1780.3	9849	1779.9	9900	1777.9	9923	1779.6	9934	1779.5	9955
GR	1778.2	9981	1775.4	10000	1773.0	10018	1780.7	10024	1782.0	10035
GR	1782.7	10061	1781.9	10070	1783.4	10085	1784.6	10129	1785.5	10176
GR	1785.6	10243	1785.1	10331	1785.2	10394	1784.9	10452	1784.7	10511
GR	1784.7	10595	1784.5	10657	1784.8	10707	1785.4	10777	1786.0	10836
GR	1785.9	10871	1785.3	10904	1785.7	10948	1786.9	10995	1788.1	11037
GR	1789.0	11072	1789.7	11162	1790.1	11215				
NC	.050	.055	.032							
ET			7.1				9660	10610		
X1	19.41	75	9928	10072	600	790	769.4			
GR	1806.6	9245	1806.7	9277	1807.3	9288	1807.7	9349	1807.6	9395
GR	1807.2	9410	1804.4	9447	1802.7	9475	1794.3	9548	1789.7	9613
GR	1787.9	9658	1786.2	9675	1787.1	9681	1788.2	9715	1788.1	9764
GR	1787.7	9796	1788.3	9830	1790.3	9859	1791.0	9880	1790.6	9908
GR	1789.4	9928	1786.8	9948	1787.6	9965	1783.9	9979	1784.0	10000
GR	1784.6	10039	1785.0	10052	1788.6	10072	1788.5	10110	1788.6	10139
GR	1787.5	10171	1786.6	10183	1783.2	10193	1783.3	10209	1786.1	10225
GR	1786.6	10246	1785.9	10263	1786.5	10284	1787.3	10328	1785.2	10353
GR	1783.2	10365	1782.6	10374	1783.1	10383	1785.8	10403	1785.7	10415
GR	1784.0	10425	1787.3	10446	1786.7	10480	1787.3	10495	1787.0	10521
GR	1783.5	10545	1783.8	10561	1783.0	10587	1790.3	10616	1791.8	10654
GR	1792.3	10698	1792.8	10763	1793.2	10803	1792.6	10811	1793.2	10823
GR	1793.3	10878	1793.4	10925	1793.3	10979	1793.4	11038	1793.5	11100
GR	1793.0	11160	1793.2	11213	1793.8	11254	1794.0	11307	1794.5	11380
GR	1795.1	11443	1795.9	11509	1796.6	11572	1798.4	11647	1800.1	11735
ET		9.1	7.1				9901	10581	9795	10814
X1	19.52	67	9972	10055	700	485	606.3			
GR	1812.8	8989	1810.6	9047	1806.8	9099	1802.6	9147	1800.0	9196
GR	1799.2	9242	1798.6	9307	1797.5	9367	1797.0	9417	1796.1	9474
GR	1794.8	9482	1795.5	9489	1795.5	9517	1796.3	9524	1795.4	9528
GR	1795.8	9590	1796.2	9657	1796.5	9718	1796.5	9795	1795.5	9871
GR	1794.5	9916	1788.8	9936	1791.3	9952	1790.6	9972	1788.7	9983
GR	1787.0	10000	1786.4	10005	1786.2	10022	1793.0	10038	1793.4	10055
GR	1793.6	10095	1792.6	10134	1788.1	10156	1788.2	10164	1789.7	10177
GR	1788.7	10189	1791.3	10215	1790.4	10222	1791.5	10238	1790.6	10251
GR	1791.5	10265	1791.3	10294	1790.4	10300	1791.2	10325	1791.4	10345

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GR	1790.3	10354	1791.8	10387	1791.6	10411	1791.2	10436	1790.4	10472
GR	1787.7	10488	1791.0	10502	1790.8	10518	1787.9	10539	1786.8	10559
GR	1795.2	10582	1796.4	10617	1797.0	10679	1797.5	10746	1797.8	10814
GR	1797.8	10893	1796.5	10903	1797.5	10910	1797.7	11010	1797.3	11097
GR	1797.8	11187	1798.4	11237						
ET		9.1	7.1				9984	10730.51	9966	10788
X1	19.62	67	9966	10120	515	530	528.0			
GR	1819.8	8806	1819.0	8856	1816.9	8894	1813.9	8937	1808.0	9000
GR	1806.3	9035	1805.0	9083	1804.4	9143	1804.3	9224	1803.1	9276
GR	1802.8	9354	1802.3	9437	1802.2	9491	1802.1	9563	1801.6	9653
GR	1801.3	9716	1800.7	9737	1800.7	9753	1801.4	9783	1801.1	9834
GR	1801.3	9879	1802.7	9924	1803.9	9966	1802.5	9981	1791.1	10000
GR	1790.3	10025	1792.4	10036	1796.0	10046	1797.5	10077	1798.2	10120
GR	1797.8	10180	1796.4	10221	1795.6	10241	1795.0	10293	1793.1	10309
GR	1793.9	10317	1792.4	10323	1793.3	10343	1795.7	10361	1796.4	10375
GR	1794.9	10398	1797.1	10417	1797.6	10448	1797.1	10494	1796.2	10535
GR	1795.1	10581	1795.3	10609	1794.6	10632	1795.2	10650	1798.6	10677
GR	1799.9	10708	1801.3	10742	1802.6	10788	1803.7	10840	1804.6	10901
GR	1805.9	10961	1806.4	11026	1807.4	11080	1808.6	11145	1810.0	11200
GR	1811.0	11254	1811.5	11295	1812.3	11357	1812.9	11404	1813.0	11456
GR	1813.4	11503	1813.6	11537						
ET			7.1				9825	10550		
X1	19.72	67	9948	10043	500	500	509.9			
GR	1820.7	8821	1819.2	8851	1815.6	8885	1812.3	8917	1810.8	8958
GR	1809.5	9008	1809.2	9064	1808.4	9129	1808.3	9196	1807.8	9243
GR	1807.2	9298	1806.8	9350	1806.7	9423	1806.8	9474	1807.4	9534
GR	1807.5	9576	1807.2	9623	1808.0	9677	1808.6	9715	1808.4	9793
GR	1801.9	9812	1800.9	9822	1801.3	9847	1802.0	9871	1797.2	9884
GR	1796.5	9893	1799.8	9905	1801.6	9926	1800.7	9948	1798.3	9961
GR	1798.4	9973	1797.8	9989	1796.5	10000	1795.1	10018	1796.9	10030
GR	1801.8	10043	1803.5	10064	1802.9	10089	1802.3	10108	1802.7	10129
GR	1801.7	10160	1801.7	10187	1800.4	10225	1797.4	10241	1797.5	10261
GR	1799.5	10275	1802.1	10300	1803.1	10326	1802.7	10359	1801.2	10408
GR	1799.9	10465	1798.3	10483	1798.4	10498	1799.1	10513	1803.1	10533
GR	1805.0	10563	1806.4	10592	1808.2	10641	1809.5	10680	1810.8	10739
GR	1811.8	10811	1812.5	10850	1813.4	10907	1813.9	10953	1814.5	11005
GR	1815.1	11071	1816.1	11150						
ET			7.1				9770	10420		
X1	19.83	56	9960	10074	500	600	567.8			
GR	1830.0	8668	1827.6	8712	1824.6	8723	1824.8	8739	1824.3	8769
GR	1823.8	8781	1824.4	8788	1821.0	8799	1818.3	8829	1815.8	8883
GR	1814.6	8943	1814.0	8997	1813.4	9054	1812.8	9125	1811.8	9179
GR	1811.7	9223	1811.4	9270	1811.3	9332	1811.2	9390	1811.4	9457
GR	1811.3	9547	1811.4	9602	1811.6	9651	1812.0	9681	1811.8	9711

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GR   1810.3      9736     1807.2      9751     1806.9      9761     1807.3      9770     1807.1      9804
GR   1806.0      9826     1807.0      9836     1806.3      9862     1807.6      9881     1807.7      9908
GR   1805.3      9929     1805.5      9943     1805.8      9960     1802.8      9974     1801.2     10000
GR   1800.7     10018     1799.3     10035     1801.9     10045     1806.6     10074     1806.2     10121
GR   1808.3     10150     1807.5     10184     1803.9     10206     1804.5     10222     1805.7     10263
GR   1806.9     10301     1807.9     10333     1808.1     10372     1808.7     10398     1810.5     10429
GR   1812.0     10487
1
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NC     .060       .060       .042
       CROSS SECTION 19.92 LENGTHENED 865 FEET
       AT LEFT OVERBANK USING TOPOGRAPHIC MAP
ET                9.1        7.1                                   9710   10393.31      9220   10393.31
X1    19.92        59       9974     10097       250       660     492.0
GR     1820      8928       1818      8966      1816      8991      1816      9091      1814      9241
GR   1813.1      9365       1814      9529      1814      9617      1814      9667      1812      9705
GR     1810      9718     1810.2      9793    1811.6      9827    1813.4      9863    1813.8      9879
GR   1813.7      9909     1812.6      9948    1814.2      9959    1809.7      9974    1810.5      9985
GR   1803.6     10000     1802.0     10014    1802.0     10024    1805.4     10044    1808.1     10057
GR   1806.0     10066     1809.4     10082    1810.4     10097    1811.0     10133    1811.4     10180
GR   1809.0     10199     1808.9     10220    1809.0     10230    1809.9     10241    1809.5     10268
GR   1809.7     10283     1812.0     10305    1811.8     10320    1811.7     10343    1811.0     10358
GR   1808.8     10373     1816.5     10399    1817.6     10413    1818.3     10433    1819.8     10462
GR   1820.5     10505     1820.8     10531    1821.4     10576    1822.7     10630    1823.4     10666
GR   1823.8     10698     1823.9     10751    1824.1     10814    1825.4     10888    1825.8     10922
GR   1826.0     10953     1826.3     10986    1827.2     11006    1825.9     11024

ET                          7.1                                   9420   10473.12
X1    20.05        82       9954     10032       815       770     700.0
GR   1837.4      8864     1837.6      8907    1836.8      8931    1834.6      8968    1831.8      9005
GR   1828.0      9039     1825.1      9079    1823.7      9125    1823.8      9157    1823.6      9204
GR   1822.6      9253     1821.4      9335    1820.6      9358    1821.5      9370    1820.6      9394
GR   1819.6      9416     1820.6      9455    1815.6      9477    1815.4      9503    1813.8      9517
GR   1818.4      9541     1817.8      9582    1817.2      9602    1819.1      9625    1814.9      9637
GR   1815.6      9646     1815.7      9655    1815.9      9688    1815.5      9702    1820.9      9716
GR   1819.4      9721     1818.7      9750    1814.4      9760    1813.5      9772    1813.8      9786
GR   1816.1      9802     1814.9      9837    1815.8      9849    1815.7      9857    1814.1      9864
GR   1816.0      9878     1816.9      9903    1816.5      9916    1812.5      9935    1812.6      9942
GR   1814.4      9954     1813.0      9967    1813.9      9974    1813.9      9980    1810.7      9996
GR   1811.1     10000     1814.9     10011    1816.0     10032    1816.4     10064    1815.2     10113
GR   1813.6     10133     1813.6     10143    1816.9     10156    1816.8     10212    1815.5     10230
GR   1816.3     10241     1817.1     10307    1817.5     10334    1815.2     10363    1815.1     10382
GR   1811.9     10416     1811.2     10447    1821.5     10476    1823.1     10491    1824.4     10529
GR   1825.4     10579     1825.5     10625    1826.7     10672    1827.6     10715    1828.4     10774
GR   1828.2     10838     1828.7     10872    1829.8     10922    1830.9     10960    1832.5     11023
GR   1833.6     11102     1834.7     11161
       THE PRESENCE OF INNER-CHANNEL ISLANDS AT THIS CROSS-SECTION CAUSE
       FLOODWAY TOPWID TO EXCEED FLOODPLAIN TOPWID
       HOWEVER, FLOODWAY IS WITHIN BOUNDARIES OF FLOODPLAIN

ET                          7.1                                   9202    10489.7
X1    20.16        84       9953     10071       450       635     555.7
GR   1839.8      8766     1839.7      8868    1839.0      8906    1837.5      8936    1835.4      8966
GR   1830.2      9031     1826.4      9108    1826.0      9139    1823.8      9167    1822.0      9194
GR   1820.4      9200     1822.2      9212    1824.2      9232    1825.0      9258    1825.2      9304
GR   1825.0      9319     1825.2      9350    1824.4      9361    1825.6      9371    1825.3      9392
GR   1821.1      9406     1821.4      9412    1822.9      9419    1823.0      9425    1825.8      9445
GR   1825.2      9480     1824.7      9525    1823.3      9578    1820.9      9589    1821.7      9606
GR   1821.1      9622     1819.3      9642    1822.4      9654    1823.6      9666    1823.3      9722
GR   1823.1      9744     1822.0      9757    1822.7      9772    1821.3      9783    1821.3      9792
GR   1822.8      9801     1822.3      9815    1823.3      9843    1823.6      9868    1821.8      9878
GR   1821.9      9915     1821.2      9922    1821.6      9937    1821.5      9953    1818.5      9966
1
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GR   1818.4      9969     1817.7     10000    1823.9     10015    1823.6     10071    1822.5     10096
GR   1818.7     10118     1819.0     10139    1818.8     10178    1818.4     10195    1822.0     10208
GR   1822.0     10255     1823.5     10284    1823.1     10336    1818.5     10362    1816.2     10374
GR   1815.5     10399     1821.2     10419    1823.5     10433    1821.4     10460    1821.3     10473
GR   1827.1     10501     1828.7     10517    1831.0     10565    1832.9     10629    1834.3     10701
GR   1835.5     10772     1836.6     10833    1838.1     10896    1839.4     10960    1840.2     11027
GR   1841.8     11070     1843.2     11118    1843.3     11140    1844.3     11213

NC     .060       .060       .032
ET                          7.1                                   9190     10395
X1    20.26        75       9920     10054       460       585     531.6
GR   1841.1      9079     1837.6      9115    1832.2      9151    1823.3      9182    1825.3      9191
GR   1825.4      9208     1824.1      9218    1825.7      9224    1825.2      9253    1826.0      9307
GR   1826.8      9342     1828.1      9363    1828.4      9404    1829.1      9465    1829.6      9507
GR   1829.5      9540     1830.4      9622    1824.8      9632    1825.0      9639    1826.2      9650
GR   1826.5      9664     1828.9      9675    1829.6      9699    1828.5      9705    1830.4      9715
GR   1831.4      9758     1830.1      9814    1829.7      9837    1828.3      9846    1829.5      9865
GR   1830.1      9879     1828.2      9920    1828.4      9945    1827.2      9956    1827.2      9972
GR   1826.1      9988     1825.2     10000    1827.3     10010    1827.9     10026    1828.2     10054
GR   1825.5     10064     1825.1     10080    1825.8     10088    1828.7     10096    1828.6     10154
GR   1828.6     10194     1828.5     10234    1828.5     10252    1827.7     10286    1825.4     10319
GR   1822.4     10332     1821.9     10351    1822.0     10362    1823.4     10376    1831.1     10399
GR   1831.8     10430     1832.0     10506    1833.5     10517    1830.7     10529    1831.7     10537
GR   1832.9     10569     1833.5     10610    1834.2     10643    1834.9     10700    1835.9     10737
GR   1837.7     10781     1838.8     10819    1839.9     10856    1840.6     10898    1841.0     10931
GR   1842.2     10974     1842.9     11026    1843.6     11058    1844.6     11090    1847.1     11174
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ET                          7.1                                   9209      10415
X1    20.38        73      9951     10043       475       650    622.3
GR   1849.9      8509    1849.2      8596    1848.3      8668   1847.3       8765    1848.6      8773
GR   1848.1      8863    1846.3      8872    1846.0      8903   1845.5       8963    1845.4      9003
GR   1844.6      9025    1843.4      9077    1842.6      9104   1840.6       9126    1836.4      9160
GR   1834.0      9184    1832.5      9192    1830.6      9230   1829.9       9246    1830.6      9254
GR   1830.9      9288    1831.8      9338    1832.3      9368   1832.4       9434    1831.3      9490
GR   1826.9      9519    1827.2      9537    1829.2      9545   1830.0       9576    1831.6      9589
GR   1831.4      9612    1830.9      9643    1832.2      9666   1833.5       9709    1834.1      9741
GR   1834.7      9771    1835.2      9813    1835.5      9881   1834.7       9895    1835.0      9900
GR   1834.2      9927    1837.5      9951    1832.6      9968   1830.2       9990    1829.6     10000
GR   1829.6     10026    1835.9     10043    1835.6     10087   1835.6      10133    1834.5     10164
GR   1833.5     10195    1832.2     10216    1830.5     10229   1828.9      10256    1833.1     10293
GR   1833.2     10312    1832.1     10335    1828.9     10376   1826.6      10386    1825.9     10405
GR   1835.3     10419    1836.4     10447    1838.3     10512   1840.2      10570    1841.9     10634
GR   1842.9     10686    1843.6     10739    1844.7     10806   1845.4      10855    1846.3     10909
GR   1847.7     10988    1848.6     11055    1850.5     11170

ET                          7.1                                   9424      10330
X1    20.48        56      9972     10065       600       520    526.7
GR   1851.3      9087    1849.1      9145    1846.5      9183   1842.4       9221    1839.1      9262
GR   1838.0      9283    1837.3      9345    1836.5      9355   1837.5       9361    1837.6      9412
GR   1837.7      9460    1838.6      9516    1839.0      9572   1839.4       9640    1839.7      9704
GR   1838.6      9740    1834.9      9768    1836.7      9779   1838.1       9799    1838.7      9823
GR   1837.9      9831    1839.3      9847    1838.7      9864   1838.4       9896    1839.8      9916
GR   1840.7      9931    1840.6      9972    1833.9      9986   1834.0      10000    1833.9     10014
GR   1832.8     10023    1833.0     10050    1838.6     10065   1838.2      10087    1839.0     10112
1
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GR   1839.5     10139    1838.8     10187    1838.7     10195   1839.2      10224    1838.6     10238
GR   1835.2     10261    1832.4     10282    1833.4     10309   1838.4      10327    1839.0     10350
GR   1838.5     10390    1838.9     10422    1840.0     10485   1841.4      10529    1842.6     10561
GR   1843.7     10597    1844.6     10655    1845.6     10697   1847.1      10752    1848.1     10812
GR   1849.4     10880

ET                          7.1                                   9485      10370
X1    20.62        70      9969     10074       915       580    788.9
GR   1862.9      8837    1863.2      8931    1863.6      9003   1863.2       9090    1863.4      9138
GR   1862.6      9153    1859.6      9182    1854.0      9218   1848.4       9257    1846.4      9269
GR   1845.8      9297    1844.7      9324    1845.8      9340   1846.0       9381    1846.6      9417
GR   1845.7      9438    1845.2      9464    1844.5      9486   1843.9       9511    1842.5      9518
GR   1844.1      9526    1844.7      9552    1845.3      9592   1845.8       9629    1846.0      9687
GR   1846.1      9735    1846.1      9789    1846.5      9840   1847.1       9863    1846.5      9868
GR   1846.9      9913    1846.8      9953    1845.6      9969   1839.7       9996    1839.8     10000
GR   1840.0     10019    1839.3     10042    1843.3     10053   1844.3      10074    1844.0     10092
GR   1845.1     10110    1846.7     10134    1847.1     10182   1846.7      10229    1846.6     10275
GR   1845.6     10310    1844.5     10333    1842.9     10344   1844.2      10354    1844.0     10366
GR   1840.3     10373    1843.4     10384    1844.1     10407   1844.2      10429    1848.4     10479
GR   1849.6     10531    1850.8     10591    1851.3     10631   1851.9      10692    1853.1     10742
GR   1853.8     10786    1854.5     10840    1855.5     10898   1856.4      10969    1857.3     11016
GR   1858.1     11070    1858.6     11103    1858.2     11111   1858.6      11127    1858.9     11144

        Beginning of Castro Fleet's Analysis (Del Webb Area)
        Cross Section Identification Numbers Were Increased
        By A Factor ranging from 0.25 to 0.14 miles For Consistency
        With Montgomery Watson Modeling
        For Example, Castro Fleet Cross Section 20.39 becomes
        Montgomery Watson Cross Section 20.64

NC    0.045        0.045    0.043       0.3       0.5
ET                          9.1                                                       9500      10350
X1    20.64        23      9500     10340     112.5     137.5    135
GR     1864      8950      1860      9140      1848      9220   1846.5       9300     1847      9430
GR     1845      9500      1847      9660      1847      9940    1844       9950     1842      9970
GR     1842     10000      1842     10020      1844     10030    1848      10110     1848     10210
GR     1844     10310      1844     10340      1843     10360    1844      10370     1848     10420
GR     1852     10600      1856     10830      1860     11100

NC     0.06         0.06     0.038       0.3       0.5
ET                          7.1                                   4500       5310
X1    20.71        36      4910      5170       475       320    369.6
GR     1855      4055      1854      4060      1853      4095   1852.9       4122     1852      4212
GR     1851      4265    1850.8      4290      1851      4350    1851       4430     1850      4455
GR     1849      4460      1848      4480      1848      4490    1849       4550     1850      4625
GR     1850      4720      1850      4750      1851      4810    1852       4910     1851      4960
GR     1844      4990      1843      4995      1844      5020    1846       5040     1847      5075
GR     1850      5085      1850      5140      1851      5160    1852       5170     1852      5230
GR     1851      5270      1850      5370      1849      5390    1850       5470     1854      5534
GR     1856      5610
1
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ET                 9.1       7.1                                   4500       5160     4240      5500
X1    20.79        32      4907      5160       460       575    422.4
GR     1859      3860      1858      3895    1857.4      3925   1857.2       3980     1857      4030
GR     1856      4070      1855      4240      1854      4300    1854       4350     1853      4385
GR     1852      4415      1851      4440      1852      4450    1853       4585     1855      4907
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GR	1854	4937	1852	4950	1850	4980	1848	4990	1847.5	5000
GR	1848	5027	1850	5070	1852	5083	1854	5118	1855.3	5160
GR	1854.3	5205	1855	5300	1854	5350	1853	5385	1854	5465
GR	1856	5530	1860	5645						
ET		9.1	7.1				4550	5220	4090	5475
X1	20.90	33	4810	5090	570	480	580.8			
GR	1864	3740	1862.7	3790	1863.2	3845	1862	3915	1861.5	3950
GR	1862	3965	1863.2	4090	1862	4200	1862	4360	1862	4425
GR	1858	4560	1858	4625	1860.7	4810	1860	4830	1858	4850
GR	1857.5	4865	1858	4875	1858.2	4885	1858	4900	1856	4950
GR	1854	4965	1852.6	5000	1854	5030	1858	5042	1860	5050
GR	1860.9	5090	1860.5	5210	1860	5275	1858.5	5330	1860	5385
GR	1861	5475	1864	5520	1866	5545				
ET		9.1	7.1				4390	5060	3955	5605
X1	20.98	41	4695	5060	400	430.5	422.4			
GR	1870	3490	1868	3540	1866.2	3580	1866.7	3660	1866.2	3800
GR	1868	3955	1866	4145	1864	4330	1862.8	4380	1863.2	4390
GR	1862	4425	1861	4440	1862	4465	1861.3	4500	1862	4520
GR	1863.6	4580	1863.3	4615	1864	4645	1864.2	4695	1864	4730
GR	1862	4870	1861	4880	1860	4920	1858	4945	1856	4965
GR	1854	4995	1853.2	5000	1854	5005	1860	5020	1864.7	5060
GR	1866	5125	1866.2	5165	1866	5220	1864	5280	1864	5315
GR	1866	5390	1870	5470	1872	5480	1874	5505	1876	5565
GR	1878	5605								
ET		9.1	7.1				4380	5075	3875	5475
X1	21.05	36	4892	5045	340	380	369.6			
GR	1870	3540	1869.5	3560	1870	3605	1870	3670	1869.5	3730
GR	1870	3750	1872	3825	1872.3	3875	1872	3975	1870	4080
GR	1868	4220	1866	4345	1864.8	4400	1866	4430	1866.4	4475
GR	1866	4520	1865.5	4545	1866	4560	1867	4610	1866.3	4670
GR	1867.4	4775	1866	4830	1866	4892	1864	4920	1862	4930
GR	1860	4960	1858	4990	1857.6	5000	1858	5012	1860	5022
GR	1866	5045	1868	5075	1869.2	5095	1868.3	5145	1870	5375
GR	1872	5475								
ET		9.1	7.1				4350	5125	3950	5580
X1	21.11	31	4850	5125	260	370	316.8			
GR	1880	3410	1876	3480	1874	3535	1872.3	3595	1872	3735
GR	1874	3910	1874	4025	1872	4160	1870	4280	1868	4325
GR	1866.5	4365	1868	4410	1869.7	4450	1868	4555	1869.3	4675
GR	1869.1	4715	1870	4770	1870	4850	1868	4910	1866	4930

GR	1864	4945	1862	4960	1860.5	4990	1862	5020	1864	5035
GR	1866	5055	1868	5080	1870	5125	1872	5185	1874	5420
GR	1876	5580								
ET		9.1	7.1				4200	5100	4050	5700
X1	21.18	31	4950	5100	360	355.5	369.6			
GR	1876	3690	1875.2	3800	1875	3940	1876	4050	1874	4155
GR	1872	4225	1870	4240	1869.7	4250	1870	4260	1872	4300
GR	1874	4330	1874.4	4420	1874	4490	1872.5	4650	1872.9	4845
GR	1872	4950	1870	4970	1868	4980	1866	4988	1865	5000
GR	1866	5010	1868	5080	1870	5090	1872	5100	1874	5120
GR	1876	5200	1878	5270	1878	5365	1877.3	5480	1878	5535
GR	1880	5700								
ET		9.1	7.1				4310	5055	4025	5600
X1	21.25	38	4910	5055	420	370	369.6			
GR	1887	3610	1886	3650	1885.2	3723	1884	3857	1883.2	3890
GR	1884	4025	1882	4125	1880	4220	1878	4225	1875.3	4260
GR	1876	4275	1878	4310	1879	4365	1878.4	4410	1879.8	4500
GR	1879.8	4515	1878	4655	1877	4685	1877.6	4730	1876.5	4820
GR	1876.6	4860	1876	4880	1875	4910	1874	4935	1870	4965
GR	1868.7	5000	1870	5045	1878	5055	1880	5090	1880	5120
GR	1880	5365	1878.3	5400	1878.4	5430	1879.5	5490	1880	5540
GR	1880.7	5600	1882	5715	1884	5850				
ET		9.1	7.1				4450	5100	4035	5485
X1	21.31	33	4825	5050	230	310	316.8			
GR	1887.3	3660	1886	3740	1884.3	3930	1885	4040	1884	4125
GR	1882	4200	1880	4275	1878	4280	1876.4	4290	1878	4310
GR	1880	4410	1880.7	4500	1880	4570	1878.8	4640	1879.8	4700
GR	1878	4825	1872	4855	1871.2	4870	1872	4880	1874	4890
GR	1876	4900	1876.5	4920	1876	4940	1874	4950	1872	4965
GR	1870.7	5000	1872	5015	1878	5050	1880	5065	1882	5105
GR	1883.5	5190	1883.9	5230	1884	5585				
ET		9.1	7.1				4400	5105	4070	5425
X1	21.35	28	4895	5025	205	220	211.2			
GR	1888	3755	1886	4110	1884	4225	1882	4320	1880	4330
GR	1879.2	4350	1880	4400	1881.5	4490	1881	4620	1880	4750

GR	1878	4755	1876	4760	1874.2	4770	1876	4800	1878	4810
GR	1878	4895	1876	4915	1874	4970	1872	4980	1871.5	5000
GR	1872	5015	1878	5025	1880	5030	1882	5040	1884	5105
GR	1886	5310	1886.8	5430	1887	5500				

ET		9.1	7.1				4500	5100	4110	5290
X1	21.41	28	4910	5010	422	422	422			
GR	1890	4110	1888	4250	1886	4330	1885	4510	1884	4575
GR	1880	4590	1879	4600	1880	4620	1882	4630	1882.5	4670
GR	1882	4720	1880	4765	1877.5	4795	1880	4805	1881	4830
GR	1880	4845	1879	4855	1880	4865	1882	4910	1880	4930
GR	1878	4980	1874.2	5000	1880	5010	1882	5020	1884	5030
GR	1886	5060	1888	5165	1889	5290				

ET		9.1	7.1				4617	5317	4585	5515
X1	21.49	37	4900	5080	475	475	475			
GR	1892.5	4565	1892	4585	1890	4640	1888	4690	1884	4695
GR	1882	4710	1884	4715	1884.5	4730	1884	4755	1883.3	4770
GR	1886	4780	1887	4840	1887.7	4900	1886	4925	1885.3	4940
GR	1886	4950	1886	4990	1884	4995	1883	5000	1884	5010
GR	1885	5035	1884	5040	1882	5060	1884	5070	1888	5080
GR	1889.4	5130	1888	5155	1884	5175	1882.5	5195	1884	5210
GR	1884	5220	1886	5240	1888	5270	1890	5295	1892	5345
GR	1891.5	5390	1894.1	5515						

ET		9.1	7.1				4415	5255	4220	5630
X1	21.58	39	4815	5255	525	250	475.2			
GR	1906	4220	1904	4250	1900	4320	1886.8	4365	1886.8	4395
GR	1888	4400	1890	4415	1892	4430	1892	4465	1894	4510
GR	1894	4565	1892	4590	1888	4615	1892	4640	1894	4670
GR	1894.7	4725	1894	4750	1893.3	4780	1894	4815	1892	4890
GR	1890.1	4910	1892	4940	1890	4965	1888	5000	1890	5025
GR	1892	5050	1893.8	5090	1890	5155	1888	5170	1890	5185
GR	1892	5235	1894	5255	1894.3	5310	1894	5355	1892.2	5425
GR	1894	5482	1894.8	5525	1895.5	5630	1897	5800		

ET			7.1				4265	5320		
X1	21.63	55	4980	5300	280	370	264			
GR	1910	4060	1908	4130	1906	4140	1900	4180	1900	4212
GR	1888	4220	1888	4230	1890	4250	1892	4260	1894	4290
GR	1896	4320	1894.9	4375	1897.6	4435	1898	4480	1898	4560
GR	1896	4585	1894	4605	1892	4625	1898.6	4633	1892	4645
GR	1894	4660	1896	4695	1896	4725	1894	4785	1892.6	4800
GR	1894	4805	1896	4830	1898	4930	1896	4980	1890	4990
GR	1888.5	5000	1890	5007	1892	5025	1894	5085	1895.3	5140
GR	1894	5185	1892	5190	1892	5205	1894	5220	1894.8	5240
GR	1894	5255	1893.8	5270	1894	5275	1896	5300	1897.7	5400
GR	1898	5530	1898.3	5565	1898	5585	1898	5600	1900	5705
GR	1902	5840	1904	5950	1906	6015	1908	6085	1910	6175

ET			7.1				3970	5300		
X1	21.69	41	4780	5085	408	320	422.4			
GR	1910	3860	1900	3900	1898	3970	1900	4020	1900.9	4060
GR	1900	4070	1899.3	4080	1900	4110	1900	4145	1900.8	4180
GR	1900.8	4230	1900	4290	1898	4310	1896	4365	1894	4380
GR	1896	4390	1898	4415	1899.9	4480	1898	4505	1897.3	4510
GR	1898	4515	1900	4575	1901.6	4660	1901.8	4685	1900.8	4755
GR	1900	4780	1898	4815	1896.1	4907	1898	4940	1896	4982
GR	1895.1	5000	1896	5015	1898	5025	1900	5085	1898	5157
GR	1897.1	5160	1898	5175	1900	5265	1902	5280	1902.2	5300
GR	1904	5615								

ET			7.1				3694	5165		
X1	21.77	50	4795	5045	442.2	422.4	422.4			
GR	1915	3630	1910	3652	1909	3680	1905	3697	1900	3705
GR	1895	3720	1899	3745	1900	3815	1904	3837	1905	3850
GR	1905	3876	1905	3952	1906	4005	1906	4075	1906	4115
GR	1904	4180	1902	4205	1902	4240	1900	4255	1902	4270
GR	1904	4290	1904	4320	1902	4325	1902	4340	1906	4355
GR	1906	4395	1906	4445	1906	4535	1905.3	4565	1906	4620
GR	1906.5	4740	1906	4785	1904	4795	1902	4830	1900	4850
GR	1900	4885	1900	4910	1902	4955	1900	4965	1898	4970
GR	1898	4975	1897.3	5000	1898	5005	1900	5015	1902	5030
GR	1904	5045	1904	5115	1903.1	5130	1904	5150	1906	5205

ET			7.1				3750	5200		
X1	21.82	49	4950	5070	240.7	297.2	264			
GR	1920	3655	1906	3700	1906	3720	1904	3740	1903	3750
GR	1902	3760	1901	3790	1900	3805	1901	3830	1905	3850
GR	1907	3860	1908	3935	1908	3970	1908.7	4025	1908.2	4080

GR	1908.9	4110	1908	4135	1906	4185	1905	4195	1906	4210
GR	1905.2	4240	1906	4250	1906.5	4260	1906	4285	1904	4300
GR	1902.3	4310	1904	4340	1906	4355	1908	4375	1909.4	4475
GR	1909.3	4605	1909.6	4805	1908	4830	1906	4855	1904.3	4865
GR	1905.8	4885	1906	4915	1906	4950	1904	4965	1902	4970
GR	1900.5	4980	1900.5	5000	1902	5015	1904.5	5040	1906	5070
GR	1906.7	5150	1908	5180	1910	5250	1911	5350		

ET			7.1				3900	5040		
X1	21.91	44	4878	5040	450.3	450.3	475.2			
GR	1925	3740	1920	3780	1915	3805	1910	3826	1907	3835
GR	1906	3850	1906	3863	1906	3883	1905	3895	1902	3915
GR	1905	3935	1909	3945	1910	3990	1912	4030	1912.5	4070
GR	1912	4125	1910	4190	1911.1	4250	1910	4320	1908	4370
GR	1910	4380	1908	4410	1910	4425	1912	4460	1910	4490
GR	1912	4500	1914	4525	1914.6	4730	1914	4830	1912	4878
GR	1910	4940	1908	4975	1906	4990	1906	5000	1910	5020
GR	1912	5040	1912.5	5060	1912	5080	1912.5	5120	1912	5150
GR	1910.6	5180	1912	5210	1914	5250	1916	5370		

ET			7.1				3765	5090		
X1	21.99	46	4960	5090	400	470	422.4			
GR	1925	3660	1910	3675	1915	3740	1916	3765	1918	3835
GR	1914	3895	1918	4025	1917	4095	1912	4105	1910	4130
GR	1911	4147	1912	4175	1913	4218	1916	4272	1916	4320
GR	1914	4390	1914	4445	1916	4485	1916	4500	1914	4518
GR	1916	4550	1916	4603	1917.8	4700	1916.6	4740	1918	4800
GR	1919	4850	1918	4960	1912	4975	1910	4985	1909.9	5000
GR	1910	5008	1912	5022	1916	5090	1918	5160	1918	5185
GR	1916	5195	1916	5210	1917.2	5235	1916	5255	1914	5260
GR	1913.4	5270	1914	5275	1916	5285	1918	5320	1920	5362
GR	1922	5435								

ET			7.1				4050	5175		
X1	22.08	64	4930	5055	450.7	300	475.2			
GR	1930	3620	1925	3660	1930	3700	1919	3720	1920	3765
GR	1920	3785	1915	3835	1919	3850	1919	3875	1916	3895
GR	1919	3910	1921	3950	1921	4090	1920	4120	1918	4150
GR	1918	4170	1916	4180	1915	4200	1913	4210	1915	4235
GR	1918	4250	1918	4260	1917	4270	1916	4280	1915.8	4290
GR	1918	4315	1920	4345	1918	4360	1916.2	4390	1918	4450
GR	1920	4465	1921.2	4480	1920	4515	1918.5	4525	1920	4555
GR	1920.3	4565	1920	4575	1918.6	4585	1920	4605	1922	4635
GR	1922.7	4655	1922	4770	1921	4870	1922	4905	1922.2	4915
GR	1922	4930	1920	4950	1917	4970	1916	4975	1915	4990
GR	1915	5010	1916	5020	1918	5040	1922	5055	1922	5080
GR	1920	5110	1920	5130	1918.3	5155	1920	5175	1922	5220
GR	1920	5270	1922	5305	1924	5420	1926	5545		

ET			7.1				3700	5070		
X1	22.15	65	4960	5050	330.7	378.9	369.6			
GR	1926	3312	1925	3385	1923	3520	1918	3540	1916	3550
GR	1918	3560	1920	3565	1923	3579	1923.3	3585	1923	3615
GR	1922	3680	1921	3705	1922	3722	1922.8	3756	1922	3822
GR	1921	3840	1920	3853	1918	3867	1916	3885	1915	3895
GR	1916	3905	1920	3915	1922	4030	1924	4045	1925	4075
GR	1926	4105	1927	4170	1926	4308	1924	4325	1922	4350
GR	1920	4360	1918.4	4385	1920	4410	1922	4430	1924	4445
GR	1926	4456	1926	4515	1923	4535	1926	4550	1927.2	4575
GR	1926	4662	1924	4786	1924	4800	1925.3	4815	1924	4825
GR	1924	4853	1923.3	4870	1926	4917	1924	4960	1922	4972
GR	1920	4985	1919	4990	1919	5010	1920	5015	1922	5022
GR	1924	5050	1926	5075	1927.4	5135	1926	5160	1925.8	5185
GR	1926	5210	1926.4	5265	1926	5295	1926	5325	1928	5376

ET			7.1				3918	5067		
X1	22.22	49	4955	5067	312.4	473.3	369.6			
GR	1930	3685	1928	3800	1925	3895	1924	3907	1923	3920
GR	1920	3935	1918	3970	1923	3990	1924	4058	1924	4105
GR	1925	4125	1927	4138	1929	4210	1929.8	4410	1928	4510
GR	1922	4530	1920	4533	1919.6	4552	1920	4565	1922	4577
GR	1924	4585	1926	4590	1928	4600	1928	4648	1926	4657
GR	1925.6	4662	1926	4670	1928	4680	1930	4712	1929.5	4795
GR	1930	4915	1930.2	4935	1930	4955	1928	4975	1922	4985
GR	1921.5	5000	1921.5	5020	1928	5055	1930	5067	1930.2	5080
GR	1930	5097	1930	5117	1930.2	5145	1930	5170	1928	5205
GR	1930	5240	1932	5305	1932.5	5455	1933	5555		

ET			7.1				4000	5100		
X1	22.29	57	4972	5040	358.9	280	369.6			
GR	1935	3908	1930	3955	1925	3960	1924.5	3965	1924	3985

GR	1923.5	4005	1924	4015	1923	4050	1923.5	4055	1924	4065
GR	1924.5	4085	1926.5	4100	1927	4110	1927.2	4120	1927.8	4140
GR	1928.5	4175	1929.5	4250	1931	4300	1932.5	4350	1933.2	4400
GR	1934	4465	1934	4491	1932	4630	1930	4640	1925	4652
GR	1926	4672	1928	4710	1930	4740	1932	4770	1932	4860
GR	1931	4880	1932	4890	1934	4908	1934	4930	1932	4972
GR	1930	4980	1928	4982	1926	4984	1925.5	4990	1925.5	5010
GR	1926	5020	1930	5030	1932	5040	1934	5060	1934	5072
GR	1932	5100	1931.9	5110	1932	5115	1932.4	5155	1932	5205
GR	1931.6	5240	1932	5273	1932.4	5320	1931.7	5380	1932	5410
GR	1934	5534	1936	5678						

ET			7.1				4100	5080		
X1	22.36	59	4940	5070	435.7	370	369.6			
GR	1940	4050	1930	4110	1928	4150	1927	4172	1926	4185
GR	1929	4200	1925	4210	1926	4220	1930	4236	1932	4250
GR	1933	4305	1934	4333	1935	4365	1936	4402	1937	4460
GR	1937.8	4525	1937	4605	1936	4630	1934	4632	1934	4635
GR	1933.3	4650	1934	4660	1934.7	4675	1936	4735	1937	4750
GR	1936	4765	1934	4787	1932.5	4800	1936	4822	1935	4850
GR	1936	4860	1938	4890	1938	4940	1930	4975	1929	4985
GR	1929	5000	1930	5010	1934	5025	1936	5040	1938	5070
GR	1938	5110	1936	5140	1934	5155	1932.2	5180	1934	5195
GR	1936	5202	1938	5232	1938.8	5285	1938	5345	1937.3	5420
GR	1936	5485	1935	5490	1936	5525	1936	5650	1935	5655
GR	1936	5670	1938	5710	1940	5805	1940.7	5845		

ET		9.1	7.1				4192	5110	4098	5825
X1	22.43	54	4880	5110	410	340	369.6			
GR	1944	3745	1942	3955	1936	4000	1934	4020	1935	4060
GR	1933.4	4070	1935	4080	1936.8	4098	1936	4140	1935	4163
GR	1934	4173	1935	4180	1936	4185	1938	4287	1939	4295
GR	1939	4340	1938	4367	1937	4375	1936	4400	1935	4415
GR	1935	4425	1937	4440	1935	4452	1940	4535	1937.5	4570

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GR	1939.3	4630	1939	4665	1939	4690	1940	4745	1940	4827
GR	1941.5	4880	1940	4915	1940	4950	1938	4960	1934	4970
GR	1936.2	4980	1936.2	5000	1934	5010	1938	5025	1940	5050
GR	1939.8	5065	1940	5080	1941.5	5110	1940	5135	1940	5165
GR	1936	5175	1936	5190	1934	5210	1936	5223	1938	5225
GR	1940	5240	1942	5310	1942	5825	1944	5965		

ET		9.1	7.1				4372	5095	4230	5330
X1	22.48	59	4932	5095	210.7	220	264			
GR	1946	3700	1944	3780	1942	3990	1938	4025	1937	4040
GR	1936	4070	1935	4080	1937	4095	1938	4115	1940	4133
GR	1945	4178	1945	4230	1943	4268	1940	4310	1938	4338
GR	1937.5	4350	1938	4395	1939	4415	1940	4440	1940	4460
GR	1940	4485	1940	4503	1940.7	4515	1940	4565	1939.6	4578
GR	1940	4583	1941	4645	1942	4670	1942.6	4690	1942	4705
GR	1941	4720	1940.4	4730	1942	4745	1942	4765	1943	4805
GR	1944	4900	1944	4932	1942	4952	1940	4967	1936	4980
GR	1936	5013	1940	5045	1942	5055	1942	5072	1942	5085
GR	1944	5095	1944	5113	1942	5140	1942	5155	1942.5	5172
GR	1942	5185	1940	5212	1938	5225	1938	5237	1940	5245
GR	1942	5255	1944	5330	1944.8	5420	1946	5650		

ET			7.1				4470	5105		
X1	22.56	32	4970	5095	335.4	390	422.4			
GR	1952	4125	1950	4340	1945	4420	1940	4455	1940	4525
GR	1938.5	4530	1940	4550	1942	4565	1944	4610	1945	4660
GR	1946.0	4750	1946	4770	1946.0	4790	1946.5	4905	1946.0	4970
GR	1940	4980	1938.6	4990	1938.6	5010	1940	5020	1942	5055
GR	1944	5060	1946	5095	1946	5180	1944	5190	1944	5200
GR	1946	5240	1948	5255	1947.5	5300	1948	5400	1948.4	5475
GR	1950	5600	1952	5740						

ET			7.1				4475	5050		
X1	22.67	32	4950	5050	620	450	528			
GR	1960	4165	1957	4230	1956	4290	1954	4400	1952	4430
GR	1950	4440	1948	4450	1945	4460	1948	4480	1949	4540
GR	1950	4560	1950.7	4610	1950	4665	1949	4680	1949	4690
GR	1950	4700	1951.0	4730	1951	4785	1950.3	4800	1952	4850
GR	1952	4930	1950	4950	1946	4980	1944.5	5000	1944.5	5020
GR	1946	5040	1950	5050	1950	5070	1952	5087	1954	5120
GR	1954.6	5195	1956	5275						

ET			7.1				4499	5025		
X1	22.73	41	4880	5025	330	310	316.8			
GR	1960	4200	1955.5	4300	1955	4310	1954	4357	1953	4390
GR	1953	4410	1954	4435	1954.2	4450	1954.0	4460	1953	4480
GR	1952	4510	1952.5	4520	1952	4530	1954	4540	1953	4570
GR	1952	4580	1953	4580.5	1953	4590	1954	4600	1954	4620
GR	1954	4670	1956	4690	1957	4720	1956	4750	1954.8	4780
GR	1956	4810	1956.2	4840	1956	4870	1954	4880	1952	4900

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GR     1950      4965      1948      4980      1947      4985      1947      5010      1948      5010
GR     1950      5020      1954      5025      1956      5030    1957.5      5085      1958      5125
GR     1960      5450

ET                         7.1                                     4490      5150
X1    22.79        33      4930      5060       295       310     316.8
GR     1962      4140      1961      4195      1960      4240      1959      4270      1958      4310
GR     1957      4380      1956      4390    1955.5      4410      1956      4420      1957      4440
GR     1958      4510      1957      4550    1956.7      4590      1956      4660      1956      4690
GR     1958      4700    1958.2      4720    1959.8      4785      1958      4830      1959      4880
GR     1958      4900      1956      4930      1954      4940      1952      4965      1950      4985
GR     1950      5000      1952      5010      1954      5040      1956      5060      1958      5100
GR     1960      5125      1961      5165      1962      5295

QT        2     24400     24400
ET                         7.1                                     4450      5192
X1    22.86        39      4912      5192       370       370       370
GR     1970      3772      1969      3806      1968      3932      1966      4108      1964      4274
GR     1962      4360      1960      4434    1959.5      4442      1960      4452      1961      4480
GR     1962      4530    1962.5      4585      1962      4636      1960      4646      1961      4651
GR     1960      4660    1960.5      4672      1960      4686      1958      4690      1958      4702
GR     1960      4718      1962      4834    1962.5      4888      1962      4912      1960      4968
GR     1958      4976    1953.5      5000      1954      5024      1956      5030      1958      5034
GR     1960      5078    1960.5      5108      1960      5124      1962      5192      1964      5202
GR     1966      5232      1968      5262      1970      5300      1972      5440

NC    0.050     0.050     0.048     0.300     0.500
ET                         9.1                                                           9450     10050
X1    22.95        25      9450     10050      1000      1000      1003
GR     1996      8260      1980      8430      1978      8470      1978      8680      1976      8820
GR     1972      9090    1969.5      9320    1969.5      9380      1970      9450      1969      9500
GR     1969      9600      1969      9900      1968      9950      1964      9980      1962      9985
GR     1962     10000      1962     10030      1964     10040      1972     10050      1976     10130
GR     1980     10200      1984     10210      1988     10250      1992     10300      1996     10380

        Beginning of Montgomery Watson's Analysis
        Cross Section 22.96 Lengthened 339 feet
        At Left Overbank Using Topographic Maps

NC     .060      .060      .032
ET                         7.1                                     9500     10014
X1    22.96        30      9951     10016        25      31.3        30
GR     1976      8982      1974      9119      1972      9307    1972.6      9320    1972.3      9386
GR   1971.4      9440    1970.3      9470    1970.0      9513    1970.3      9589    1970.5      9618
GR   1969.4      9642    1968.0      9660    1968.3      9669    1969.4      9686    1970.0      9718
GR   1970.9      9775    1970.6      9827    1969.3      9844    1969.6      9876    1968.6      9900
GR   1966.0      9951    1962.9      9963    1960.8      9977    1959.6     10000    1975.7     10016
GR   1976.9     10023    1976.7     10050    1978.0     10090    1979.7     10124    1979.9     10128
        Cross Section 23.12 Lengthened 138 feet
        At Left Overbank Using Topographic Maps
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ET                         7.1                                     9595     10156
X1    23.13        33      9895     10011       730       900     880.2
GR     1982      9370    1980.4      9508    1979.3      9530    1978.8      9541    1976.9      9554
GR   1975.8      9580    1976.1      9638    1978.0      9690    1979.4      9720    1979.7      9787
GR   1980.0      9868    1978.3      9895    1976.9      9917    1970.6      9932    1970.6      9945
GR   1972.0      9951    1972.1      9965    1971.0      9979    1969.8     10000    1977.2     10011
GR   1976.9     10035    1978.0     10067    1977.4     10101    1976.4     10129    1976.3     10151
GR   1974.6     10162    1975.4     10170    1974.1     10183    1979.6     10212    1984.6     10262
GR   1987.7     10301    1989.9     10311    1990.6     10332

ET                         7.1                                     9874     10208
X1    23.25        43      9874     10025       675       550     619.4
GR   1995.4      9293    1994.8      9364    1994.0      9421    1993.5      9518    1992.6      9602
GR   1991.5      9609    1991.8      9613    1991.8      9632    1991.3      9639    1989.2      9660
GR   1985.0      9694    1984.5      9713    1983.9      9766    1985.6      9801    1985.9      9827
GR   1983.8      9861    1983.5      9874    1984.0      9900    1983.4      9928    1980.3      9945
GR   1977.5      9954    1977.8      9973    1977.3     10000    1981.3     10025    1981.3     10054
GR   1981.9     10078    1982.1     10105    1982.9     10118    1983.4     10150    1982.6     10165
GR   1984.1     10181    1983.0     10208    1984.4     10226    1984.9     10257    1984.8     10299
GR   1983.0     10332    1983.0     10353    1981.5     10361    1982.6     10374    1980.9     10385
GR   1983.0     10400    1983.2     10408    1988.6     10424

ET                         7.1                                     9963     10294
X1    23.33        42      9963     10017       490       375     432.6
GR   1997.8      9541    1998.0      9565    1997.1      9582    1995.9      9646    1994.4      9703
GR   1992.7      9741    1990.4      9769    1989.2      9809    1988.3      9819    1989.6      9835
GR   1990.8      9858    1990.9      9896    1989.9      9924    1990.4      9942    1989.0      9963
GR   1981.3      9981    1981.1     10000    1981.1     10004    1985.3     10017    1985.4     10026
GR   1981.8     10038    1979.5     10048    1979.9     10057    1982.0     10065    1983.8     10082
GR   1983.9     10100    1985.4     10111    1985.6     10129    1987.8     10146    1988.1     10164
GR   1986.2     10182    1986.4     10202    1988.2     10222    1988.1     10253    1987.4     10269
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GR   1985.8     10289     1986.7     10314     1985.1     10333     1984.6     10339     1988.4     10352
GR   1997.3     10368     2000.4     10386

ET                         7.1                                     9867     10332
X1    23.45        39      9979     10058       530       630    623.5
GR     2004      9460    2001.8      9576    2001.7      9590    2000.8      9623    1999.9      9662
GR   1999.2      9712    1998.8      9731    1998.0      9753    1997.6      9787    1998.1      9817
GR   1997.8      9850    1993.1      9874    1991.8      9888    1991.4      9909    1993.8      9927
GR   1994.2      9951    1995.1      9959    1994.8      9979    1991.5      9985    1991.5      9991
GR   1991.8     10000    1992.0     10005    1993.9     10020    1993.4     10039    1994.5     10058
GR   1995.7     10103    1994.5     10137    1994.5     10151    1993.7     10157    1994.8     10172
GR   1994.3     10236    1989.9     10252    1991.7     10260    1991.5     10270    1988.5     10279
GR   1988.4     10305    1989.5     10314    1989.5     10328    2000.1     10352
        Cross Section 23.5S Lengthened 44 feet
        At Right Overbank Using Topographic Maps
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   25APR00      12:00:08                                                                          PAGE   33

ET                 9.1       7.1                                     9766     10233      9559     10289
X1    23.55         60      9916     10102       325       595    545.1
GR   2010.3      9015    2009.9      9102    2010.1      9149    2009.4      9207    2009.9      9212
GR   2009.4      9263    2008.5      9315    2008.3      9335    2007.2      9375    2006.5      9405
GR   2005.9      9440    2005.3      9466    2004.5      9486    2003.7      9531    2003.9      9555
GR   2004.9      9559    2003.2      9569    2003.1      9588    2003.9      9594    2003.2      9603
GR   2002.1      9647    2001.6      9661    2002.5      9696    2001.9      9730    1996.9      9743
GR   1996.7      9766    1999.4      9781    1999.0      9791    1999.7      9801    1999.5      9809
GR   2000.3      9835    1999.1      9840    1999.5      9849    1999.2      9869    2000.3      9882
GR   2000.6      9905    2001.2      9916    2000.5      9945    1997.4      9959    1997.0      9976
GR   1997.7     10000    1997.9     10014    1999.2     10028    1999.6     10062    1999.4     10069
GR   1997.9     10076    1997.7     10081    1998.5     10091    2001.1     10102    2001.7     10131
GR   2001.3     10157    2000.2     10184    1998.8     10202    1999.1     10213    1998.6     10233
GR   1997.8     10242    1997.9     10248    2003.1     10264      2006     10289      2010     10308

QT        2     11800     11800
ET                 9.1       7.1                                     9435     10097      9421     10114
X1    23.64         56      9941     10019       525       460    500.2
GR   2012.0      9081    2009.1      9109    2010.9      9138    2010.6      9200    2010.6      9231
GR   2010.0      9271    2008.5      9295    2009.8      9317    2009.9      9349    2008.2      9387
GR   2009.2      9404    2009.5      9421    2008.6      9435    2008.8      9458    2007.8      9510
GR   2007.1      9517    2007.0      9528    2007.6      9537    2007.1      9556    2008.1      9572
GR   2007.9      9599    2007.7      9630    2006.6      9658    2006.6      9671    2005.6      9677
GR   2005.5      9691    2007.7      9701    2007.4      9715    2008.3      9720    2008.1      9732
GR   2006.4      9747    2007.3      9767    2006.7      9799    2004.9      9846    2003.6      9855
GR   2002.8      9863    2004.4      9877    2003.0      9889    2002.9      9912    2004.6      9925
GR   2003.7      9941    2003.6      9970    2000.1      9978    2000.0     10000    2000.5     10005
GR   2005.1     10019    2004.9     10032    2003.1     10039    2006.0     10054    2006.1     10071
GR   2005.8     10078    2007.0     10097    2009.5     10114    2012.2     10136    2015.7     10155
GR   2023.6     10203

ET                         7.1                                     9668     10021
X1    23.87         37      9934     10021      1125      1200   1179.6
GR   2023.3      9487    2022.3      9499    2020.6      9550    2020.9      9575    2019.9      9594
GR   2018.0      9628    2013.9      9648    2013.6      9662    2013.8      9669    2013.5      9681
GR   2015.5      9700    2016.7      9728    2017.0      9769    2016.9      9804    2016.1      9825
GR   2017.0      9842    2017.1      9875    2017.7      9907    2016.7      9934    2010.1      9951
GR   2009.9      9969    2009.2      9975    2008.8     10000    2009.0     10006    2016.7     10021
GR   2017.0     10039    2016.6     10054    2016.7     10083    2017.3     10098    2018.0     10134
GR   2018.8     10166    2020.4     10207    2020.9     10234    2023.6     10273    2025.8     10306
GR   2032.1     10345    2040.5     10396
        THE PRESENCE OF INNER-CHANNEL ISLANDS AT THIS CROSS-SECTION CAUSE
        FLOODWAY TOPWID TO EXCEED FLOODPLAIN TOPWID
        HOWEVER, FLOODWAY IS WITHIN BOUNDARIES OF FLOODPLAIN

ET                         7.1                                     9542     10042
X1    23.94         40      9880     10020       340       435    403.2
GR   2031.2      9457    2030.7      9474    2029.6      9483    2027.1      9516    2017.8      9533
GR   2016.0      9551    2015.9      9572    2019.4      9596    2019.8      9626    2020.8      9671
GR   2021.0      9700    2021.4      9725    2021.0      9769    2020.7      9789    2021.5      9809
GR   2020.9      9827    2021.0      9848    2020.6      9880    2017.4      9894    2016.4      9919
GR   2015.4      9946    2013.2      9968    2011.7      9979    2010.6     10000    2010.4     10002
1
   25APR00      12:00:08                                                                          PAGE   34

GR   2020.1     10020    2020.1     10036    2015.1     10042    2020.1     10055    2020.4     10073
GR   2020.9     10100    2020.8     10118    2021.6     10131    2021.9     10153    2023.1     10190
GR   2025.2     10226    2026.9     10261    2029.9     10293    2034.7     10332    2041.6     10375

ET                         7.1                                     9900     10123
X1    24.03         54      9932     10023       585       300    457.8
GR   2044.9      9452    2044.9      9469    2045.3      9474    2044.9      9481    2044.1      9515
GR   2043.3      9557    2043.0      9579    2042.2      9620    2041.6      9655    2040.6      9682
GR   2038.9      9711    2036.2      9729    2028.0      9750    2019.6      9768    2023.4      9783
GR   2023.5      9793    2021.3      9806    2018.8      9819    2018.8      9824    2022.7      9838
GR   2024.3      9872    2024.4      9889    2023.6      9903    2022.7      9917    2025.1      9932
GR   2021.5      9958    2017.5      9976    2017.6     10000    2017.8     10003    2022.1     10023
GR   2021.0     10063    2021.8     10077    2021.2     10095    2017.8     10109    2017.9     10123
GR   2019.5     10134    2019.9     10146    2018.6     10165    2023.3     10194    2024.0     10218
GR   2022.9     10256    2023.4     10289    2024.1     10362    2023.3     10370    2024.5     10375
GR   2024.9     10405    2026.5     10435    2026.3     10485    2027.5     10501    2029.8     10536
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GR	2031.9	10570	2035.0	10601	2038.6	10635	2040.2	10662		
ET			7.1				9860	10067		
X1	24.12	36	9911	10067	450	440	451.7			
GR	2040.0	9627	2033.7	9648	2033.1	9664	2033.6	9693	2033.9	9726
GR	2028.6	9737	2028.2	9750	2028.8	9778	2028.5	9813	2028.0	9838
GR	2027.8	9859	2026.6	9911	2024.1	9920	2023.5	9941	2020.6	9944
GR	2020.7	9956	2021.2	9961	2021.6	9986	2021.8	10000	2022.2	10027
GR	2023.4	10043	2027.2	10067	2028.1	10094	2027.9	10126	2028.3	10153
GR	2029.3	10187	2029.8	10228	2030.5	10272	2032.1	10330	2033.3	10374
GR	2034.3	10393	2035.9	10430	2036.7	10455	2038.0	10506	2039.2	10545
GR	2040.1	10570								
QT	2	9700	9700							
ET		9.1	7.1				9953	10199	9798	10247
X1	24.25	36	9951	10018	765	665	708.6			
GR	2057.6	9699	2047.9	9735	2040.4	9770	2037.4	9798	2035.3	9809
GR	2034.2	9832	2033.9	9842	2034.4	9867	2033.8	9901	2034.6	9951
GR	2025.5	9968	2024.8	9981	2024.2	10000	2024.0	10004	2034.5	10018
GR	2032.8	10045	2033.1	10052	2031.6	10070	2032.0	10114	2031.0	10129
GR	2031.0	10144	2027.1	10162	2027.4	10175	2027.2	10199	2035.8	10247
GR	2034.3	10261	2033.5	10281	2034.3	10295	2033.9	10311	2035.0	10361
GR	2035.5	10407	2036.0	10444	2037.1	10491	2038.2	10532	2038.8	10565
GR	2040.1	10589								
NC	.060	.060	.030							
ET		9.1	7.1				9811	10077	9743	10160
X1	24.38	35	9811	10077	640	450	708.8			
GR	2051.6	9708	2042.0	9743	2037.7	9780	2036.0	9794	2035.7	9811
GR	2035.6	9834	2035.8	9863	2033.7	9875	2033.6	9888	2031.6	9897
GR	2032.7	9911	2032.8	9930	2031.5	9944	2033.6	9954	2034.0	9974
GR	2032.9	9981	2032.7	10000	2034.0	10004	2035.1	10038	2036.3	10077
GR	2035.5	10089	2036.1	10095	2037.2	10138	2043.0	10160	2037.4	10176
GR	2038.0	10193	2037.8	10210	2039.4	10223	2039.9	10290	2039.4	10329
GR	2039.7	10377	2041.0	10388	2041.6	10437	2044.0	10478	2045.1	10503

1

ET			7.1				9834	10048		
X1	24.48	36	9951	10048	385	550	501.7			
GR	2061.1	9511	2053.5	9553	2047.0	9589	2043.8	9620	2042.3	9644
GR	2042.4	9664	2039.1	9675	2039.4	9685	2039.2	9706	2038.5	9717
GR	2040.8	9726	2042.6	9753	2043.3	9785	2040.4	9802	2040.4	9842
GR	2041.8	9882	2041.7	9921	2041.5	9951	2037.2	9962	2036.8	10000
GR	2038.7	10008	2037.8	10037	2042.9	10048	2042.5	10072	2044.3	10105
GR	2046.9	10138	2048.9	10176	2051.1	10202	2053.2	10263	2054.6	10306
GR	2056.1	10364	2057.1	10410	2057.5	10438	2057.9	10448	2058.4	10465
GR	2060.5	10492								
ET			7.1				9944	10023		
X1	24.61	50	9944	10023	730	725	668.9			
GR	2050.1	9369	2051.1	9378	2052.3	9403	2052.0	9416	2052.5	9419
GR	2050.4	9428	2049.9	9460	2049.7	9502	2049.3	9538	2049.2	9575
GR	2048.9	9619	2048.8	9675	2048.7	9704	2048.4	9738	2044.8	9755
GR	2044.9	9775	2046.7	9782	2047.7	9798	2048.5	9821	2048.6	9858
GR	2048.0	9893	2046.0	9915	2046.2	9921	2045.9	9934	2046.1	9944
GR	2042.9	9959	2040.7	9984	2040.2	10000	2045.3	10012	2046.5	10023
GR	2045.5	10037	2047.0	10050	2048.1	10074	2049.2	10086	2049.8	10096
GR	2050.2	10130	2050.7	10157	2051.0	10182	2051.4	10196	2051.6	10219
GR	2051.8	10244	2052.4	10250	2052.8	10264	2054.9	10291	2056.3	10312
GR	2057.2	10332	2057.8	10361	2058.5	10384	2060.0	10407	2060.8	10420
ET			7.1				9961	10086		
X1	24.74	56	9961	10086	615	615	668.8			
GR	2081.5	9294	2080.2	9308	2078.8	9338	2076.9	9349	2076.0	9369
GR	2075.7	9380	2068.8	9410	2065.3	9431	2062.9	9450	2060.4	9482
GR	2058.1	9498	2057.8	9511	2057.0	9536	2056.2	9547	2055.2	9561
GR	2054.7	9579	2055.9	9591	2055.8	9620	2055.4	9659	2055.4	9701
GR	2055.2	9721	2055.4	9748	2055.3	9770	2055.6	9802	2054.7	9824
GR	2055.2	9841	2055.4	9891	2055.2	9906	2055.1	9937	2055.0	9961
GR	2045.8	9981	2046.1	10000	2048.3	10011	2049.5	10036	2051.2	10065
GR	2053.8	10086	2053.9	10124	2054.1	10146	2053.1	10180	2052.0	10189
GR	2052.0	10200	2055.6	10217	2055.5	10239	2057.7	10273	2062.1	10328
GR	2063.9	10369	2065.4	10394	2065.9	10436	2067.2	10468	2067.8	10500
GR	2068.8	10535	2070.1	10564	2073.7	10606	2074.7	10622	2076.2	10637
GR	2079.0	10674								
QT	2	7800	7800							
ET			7.1				9929	10080		
X1	24.87	27	9962	10071	775	685	732.8			
GR	2071.9	9592	2067.9	9602	2064.5	9634	2061.1	9659	2071	9690
GR	2071	9750	2061.7	9754	2061.3	9770	2061.2	9816	2061.7	9870
GR	2061.6	9911	2059.7	9917	2061.1	9929	2060.7	9962	2055.0	9978
GR	2054.6	10000	2056.3	10012	2056.4	10042	2057.8	10057	2059.1	10071
GR	2058.6	10100	2057.2	10124	2060.1	10135	2060.8	10157	2061.5	10172
GR	2062.8	10198	2071.0	10237						

ET			7.1				9920	10100		
X1	24.95	42	9920	10097	485	285	405.6			
GR	2090.8	9562	2088.9	9594	2087.3	9620	2084.3	9641	2085.1	9653
GR	2084.2	9681	2083.1	9695	2083.8	9703	2083.6	9718	2081.7	9745
GR	2079.0	9774	2076.8	9810	2075.2	9846	2073.3	9874	2070.0	9901
GR	2064.7	9920	2064.6	9939	2064.3	9953	2063.7	9975	2057.4	9989
GR	2057.7	10000	2059.4	10007	2059.9	10018	2059.3	10024	2060.4	10033
GR	2060.5	10069	2059.2	10086	2060.5	10097	2060.3	10121	2061.5	10135
GR	2062.9	10159	2062.7	10173	2062.2	10185	2060.8	10201	2061.1	10204
GR	2060.5	10226	2061.2	10236	2061.2	10248	2060.2	10258	2060.0	10266
GR	2063.2	10275	2070.9	10296						

ET		9.1	7.1				9952	10105	9928	10113
X1	25.12	46	9949	10053	900	800	867.7			
GR	2078.3	9560	2077.5	9570	2077.5	9586	2076.9	9612	2076.2	9632
GR	2077.3	9637	2074.7	9654	2074.1	9667	2075.1	9676	2074.3	9703
GR	2072.5	9721	2071.6	9740	2069.4	9774	2066.9	9798	2069.4	9819
GR	2068.6	9826	2069.9	9836	2071.0	9855	2071.7	9872	2074.9	9903
GR	2074.9	9928	2073.5	9949	2066.7	9976	2066.2	9985	2064.7	10000
GR	2065.2	10008	2065.0	10033	2070.6	10053	2072.1	10079	2071.5	10092
GR	2072.4	10104	2075.3	10113	2075.0	10125	2071.2	10138	2073.0	10173
GR	2072.5	10184	2072.0	10211	2072.3	10240	2077.9	10242	2072.5	10253
GR	2072.4	10267	2075.6	10289	2082.4	10312	2087.7	10348	2090.5	10372
GR	2094.9	10396								

ET		9.1	7.1				9849	10037	9552	10052
X1	25.28	57	9965	10024	950	715	867.5			
GR	2089.8	8848	2088.3	8893	2087.1	8943	2086.2	8997	2085.0	9033
GR	2083.4	9077	2081.8	9099	2081.2	9134	2080.2	9154	2078.5	9166
GR	2078.0	9174	2080.2	9181	2080.4	9199	2081.1	9222	2082.1	9234
GR	2082.8	9269	2084.1	9292	2085.0	9320	2084.5	9323	2084.8	9330
GR	2085.5	9337	2085.8	9360	2085.7	9378	2084.3	9386	2084.0	9409
GR	2083.4	9433	2082.5	9450	2082.0	9487	2082.2	9498	2082.7	9523
GR	2082.6	9552	2082.3	9577	2081.3	9606	2079.8	9632	2079.1	9648
GR	2079.9	9657	2080.1	9675	2078.5	9687	2079.9	9707	2079.3	9725
GR	2079.4	9767	2079.5	9791	2079.0	9807	2079.3	9838	2078.9	9849
GR	2078.6	9887	2077.3	9899	2078.7	9919	2078.7	9954	2077.8	9965
GR	2075.1	9978	2072.6	9995	2072.3	10000	2071.5	10014	2074.0	10024
GR	2089.4	10052	2090.5	10060						

ET		9.1	7.1				9650	10296	9287	10336
X1	25.38	77	9865	10140	255	760	538.7			
GR	2090.3	8816	2088.6	8849	2087.3	8903	2085.3	8954	2083.9	9005
GR	2082.6	9032	2082.1	9045	2082.7	9053	2082.1	9066	2080.1	9076
GR	2080.0	9083	2081.8	9098	2081.8	9126	2083.8	9174	2084.9	9211
GR	2085.4	9235	2085.7	9244	2084.8	9247	2085.9	9262	2086.0	9276
GR	2085.7	9287	2085.0	9308	2084.6	9333	2084.1	9379	2083.9	9415
GR	2083.6	9447	2082.2	9487	2081.2	9510	2081.6	9523	2082.0	9549
GR	2081.8	9565	2082.4	9571	2082.5	9601	2082.8	9624	2083.3	9672
GR	2083.3	9697	2082.4	9725	2083.4	9760	2084.1	9775	2084.0	9795

GR	2083.4	9810	2084.8	9830	2084.7	9865	2081.6	9873	2081.7	9883
GR	2082.7	9892	2083.3	9910	2082.8	9940	2080.6	9952	2082.1	9967
GR	2080.3	9984	2079.8	10000	2083.8	10012	2083.2	10026	2083.3	10037
GR	2081.7	10071	2081.5	10085	2084.0	10094	2084.6	10109	2084.3	10140
GR	2082.2	10152	2084.6	10162	2084.0	10174	2080.9	10194	2084.5	10203
GR	2084.5	10236	2078.2	10262	2078.9	10281	2084.1	10296	2085.8	10336
GR	2087.0	10404	2089.1	10466	2089.3	10498	2090.7	10528	2091.2	10546
GR	2095.2	10571	2101.2	10610						

ET		9.1	7.1				9968	10598	9861	10705
X1	25.45	70	9966	10072	375	375	362.2			
GR	2093.6	9071	2092.6	9124	2091.0	9188	2089.7	9236	2088.1	9290
GR	2086.9	9314	2085.1	9329	2084.6	9367	2081.0	9383	2081.0	9394
GR	2083.6	9412	2085.2	9434	2086.6	9464	2087.6	9517	2088.1	9557
GR	2088.0	9570	2088.4	9600	2089.3	9633	2088.7	9650	2088.5	9679
GR	2088.2	9715	2088.9	9731	2089.3	9761	2089.8	9775	2090.2	9813
GR	2090.2	9861	2089.6	9909	2088.8	9941	2088.8	9966	2085.1	9975
GR	2084.8	10000	2086.9	10010	2086.9	10026	2088.5	10038	2086.9	10053
GR	2087.9	10072	2088.3	10093	2088.1	10113	2084.7	10127	2084.6	10132
GR	2087.4	10148	2088.0	10182	2088.5	10230	2088.2	10266	2087.8	10301
GR	2085.6	10312	2087.2	10322	2087.7	10347	2087.3	10374	2086.2	10388
GR	2086.2	10394	2087.9	10414	2088.5	10440	2089.0	10488	2088.4	10513
GR	2086.7	10533	2086.8	10551	2085.6	10575	2082.0	10598	2081.7	10615
GR	2082.7	10641	2087.7	10653	2089.2	10679	2089.8	10705	2090.3	10742
GR	2091.5	10771	2090.5	10780	2092.7	10793	2097.1	10823	2101.2	10867

ET		9.1	7.1				9686	10511	9608	10564
X1	25.56	91	9927	10048	535	600	583.5			
GR	2110.3	8666	2108.6	8716	2107.3	8774	2105.7	8825	2104.5	8861
GR	2102.2	8927	2100.4	8984	2098.8	9019	2098.0	9059	2096.0	9098
GR	2094.0	9131	2093.0	9168	2092.3	9193	2089.6	9224	2086.1	9237

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GR   2085.5      9256     2087.2      9268     2092.9      9288     2094.5      9307     2095.3      9336
GR   2095.4      9368     2095.2      9413     2095.0      9460     2095.0      9487     2094.8      9519
GR   2094.4      9538     2098.2      9554     2098.6      9566     2098.5      9595     2097.9      9608
GR   2095.0      9624     2094.1      9642     2095.3      9652     2096.3      9680     2095.9      9687
GR   2096.2      9706     2095.4      9716     2095.2      9745     2094.6      9777     2094.9      9800
GR   2094.6      9817     2093.7      9823     2094.9      9842     2094.8      9883     2095.2      9898
GR   2095.2      9927     2094.7      9952     2092.3      9968     2091.6      9977     2091.8      9996
GR   2091.9     10000     2095.6     10010     2095.6     10048     2095.1     10094     2093.8     10121
GR   2094.6     10134     2094.8     10169     2094.0     10215     2093.5     10221     2094.1     10231
GR   2094.3     10277     2094.6     10298     2094.0     10305     2094.7     10315     2094.9     10348
GR   2094.8     10375     2092.6     10390     2086.0     10406     2085.6     10413     2086.2     10422
GR   2091.0     10446     2093.0     10478     2094.8     10511     2096.6     10542     2097.9     10564
GR   2097.6     10603     2096.4     10638     2095.1     10656     2094.9     10681     2094.8     10697
GR   2095.3     10731     2095.5     10757     2095.3     10794     2094.8     10827     2093.8     10854
GR   2089.5     10871     2089.9     10883     2092.1     10908     2098.3     10928     2099.8     10954
GR   2101.0     10993
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```
ET                9.1       7.1                                9931    10477     9707    10627
X1    25.63        87      9934     10088       375       350    365.7
GR   2114.6      8821     2111.4      8900     2109.3      8953     2107.0      9003     2104.7      9056
GR   2102.4      9103     2100.5      9143     2098.6      9174     2095.5      9198     2092.8      9214
GR   2089.7      9227     2090.3      9244     2093.5      9261     2094.7      9275     2095.8      9289
GR   2097.9      9335     2099.1      9384     2099.6      9438     2099.9      9493     2100.2      9543
GR   2100.5      9596     2100.9      9624     2106.9      9647     2107.2      9662     2106.8      9693
GR   2106.2      9707     2102.4      9728     2101.7      9762     2101.2      9788     2101.2      9832
GR   2101.1      9886     2100.3      9904     2098.8      9919     2098.6      9934     2101.0      9939
GR   2096.0      9948     2095.4      9954     2095.2      9965     2096.0      9979     2095.7     10000
GR   2099.2     10007     2099.2     10040     2098.1     10042     2098.2     10065     2099.2     10088
GR   2099.8     10155     2099.6     10209     2099.2     10251     2098.0     10299     2096.3     10317
GR   2097.8     10334     2097.6     10367     2097.0     10381     2096.4     10417     2093.0     10431
GR   2093.0     10444     2094.6     10458     2094.7     10468     2095.1     10477     2096.5     10487
GR   2096.8     10508     2093.2     10530     2093.3     10540     2096.9     10570     2101.2     10603
GR   2104.4     10627     2107.2     10654     2108.1     10674     2108.3     10698     2108.4     10733
GR   2107.3     10752     2106.2     10782     2105.8     10806     2104.7     10820     2101.3     10840
GR   2099.6     10859     2098.3     10882     2096.7     10922     2095.5     10932     2095.3     10958
GR   2092.3     10971     2091.7     10994     2096.6     11006     2094.2     11019     2097.7     11031
GR   2098.6     11065     2100.9     11087

NC     .060      .060      .020       0.3       0.5

ET                         7.11                                9881    10099
X1    25.70        21      9881     10099       200       750     396
X3       10                                                          2110.7     2112.0
GR   2108.3      9805     2108.0      9854     2099.0      9881     2098.8      9959     2099.0     10000
GR   2098.9     10036     2098.9     10099     2098.8     10197     2110.1     10227     2110.8     10263
GR   2110.8     10300     2110.7     10338     2110.9     10373     2110.9     10410      2108     10740
GR     2108     10800      2106     10880      2106     10950      2116     11010      2116     11070
GR     2106     11340
```

Cross Section 25.72 is immediately Upstream of New River Bridge
Bridge skew has been incorporated by computing distance and effective
area based on a projection normal to flow direction.
The GR record data that lie outside the bridge and adjacent embankments
have not been skewed.
This method is different than that used for the Carefree Highway Bridge,
where the entire set of GR record data are skewed by a constant factor.

```
QT        2      7800      7800

SB      0.9       1.6       2.6         0       197        16      1410         2     2099.2     2099.0
ET                9.11      9.11                                                       9990      10227
X1    25.72        47      9990     10227      79.7      79.7      79.7
X2                            1    2109.0    2114.5         0         0      1.33
X3       10                                                          2109.8     2111.6
BT       -9     10030     2109.8                10058    2110.0                10087     2110.3
BT              10115     2110.5                10143    2110.7                10171     2111.0
BT              10200     2111.2                10228    2111.4                10256     2111.6
GR   2109.9      9144     2106.1      9200     2102.4      9282     2101.6      9293     2100.2      9339
GR   2098.5      9390     2096.3      9412     2093.5      9425     2093.6      9433     2099.2      9452
```



```
GR   2101.1      9492     2102.1      9545     2102.5      9597     2102.6      9644     2102.1      9681
GR   2101.8      9709     2100.8      9730     2102.5      9751     2103.1      9775     2103.6      9810
GR   2106.3      9822     2106.6      9831     2105.8      9834     2105.5      9861     2106.3      9865
GR   2106.0      9874     2104.7      9878     2104.9      9900     2108.9      9910     2109.0      9922
GR   2108.9      9963     2099.5      9990     2099.2     10000     2099.9     10074     2100.4     10145
GR   2100.6     10227     2100.1     10315     2111.0     10331     2111.3     10372     2111.2     10431
GR   2110.1     10490      2110     10550      2113     10570      2113     10610      2109     10770
GR     2108     10950      2108     11320

NC     .055      .055      .032
```

The ET station in the right overbank was judged to be the limit for
effective flow. The ET station on the left was set at where flow
could begin to breakout out to the east. The flow that breakouts
to the east will be modeled separatley. The discharge for the main

branch of Skunk Creek isn't being reduced by the flow that breakouts to the east, because during flood events the east bank could easily be elevated to contain flow in the main branch of Skunk Creek.

```
ET                 9.1       7.1                                        9914      10040       9914      10327
X1    25.83         75      9914     10040       600       145      612.5
GR   2120.4       9162    2114.5      9211    2109.9      9263     2108.9       9290    2107.8       9328
GR   2106.5       9372    2103.6      9395    2106.3      9420     2108.1       9450    2109.1       9502
GR   2108.8       9536    2109.2      9569    2108.7      9592     2107.9       9604    2108.9       9618
GR   2109.6       9668    2110.4      9705    2110.5      9758     2111.0       9812    2110.6       9853
GR   2110.8       9906    2111.8      9914    2110.2      9938     2108.1       9966    2106.0      10000
GR   2105.1      10012    2105.3     10025    2112.7     10040     2111.0      10048    2111.1      10092
GR   2110.8      10157    2109.6     10190    2110.4     10217     2109.9      10245    2110.7      10299
GR   2113.0      10312    2113.3     10327    2113.7     10343     2113.6      10361    2113.1      10375
GR   2111.3      10387    2111.1     10441    2110.5     10482     2110.8      10503    2111.1      10535
GR   2110.7      10556    2110.0     10612    2108.4     10639     2109.7      10665    2110.1      10700
GR   2109.5      10738    2108.4     10759    2108.1     10779     2108.8      10805    2109.2      10831
GR   2108.6      10856    2109.7     10900    2110.1     10946     2109.6      10987    2109.2      11018
GR   2109.6      11025    2109.0     11062    2108.7     11099     2108.2      11124    2106.6      11135
GR   2108.1      11149    2106.3     11202    2104.6     11211     2104.6      11220    2107.0      11228
GR   2108.0      11262    2109.4     11305    2110.1     11347     2110.5      11359    2114.0      11456

NC                                     0.1       0.3
```

The ET station in the right overbank was judged to be the limit for effective flow in the overbank. The ET station on the left was set at where could begin to breakout to the east.

```
ET                 9.1       7.1                                        9923      10064       9923      10616
X1    25.95         91      9986     10057       600       625      620.6
GR   2150.7       8862    2150.4      8964    2150.1      8996     2148.4       9049    2146.4       9088
GR   2142.8       9120    2137.7      9145    2132.5      9163     2128.8       9186    2125.7       9218
GR   2123.2       9254    2119.8      9297    2117.2      9322     2116.1       9353    2116.6       9368
GR   2115.7       9416    2115.9      9426    2115.4      9474     2112.1       9487    2114.1       9494
GR   2113.7       9507    2111.4      9517    2111.4      9520     2115.0       9529    2116.1       9568
GR   2115.2       9609    2114.0      9623    2115.1      9634     2115.8       9657    2116.6       9681
GR   2115.6       9694    2116.5      9727    2117.5      9777     2117.4       9802    2117.8       9841
1
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GR   2117.6       9912    2119.0      9923    2118.9      9936     2117.6       9941    2117.5       9969
GR   2118.1       9986    2110.8     10000    2110.4     10020     2113.5      10032    2114.2      10046
GR   2117.7      10057    2119.5     10072    2119.9     10096     2119.4      10103    2119.1      10132
GR   2117.6      10144    2117.5     10154    2119.2     10169     2119.1      10217    2118.1      10258
GR   2118.8      10282    2118.9     10315    2118.6     10363     2116.5      10380    2116.4      10387
GR   2117.4      10398    2117.6     10425    2117.2     10461     2116.9      10490    2116.0      10512
GR   2116.2      10538    2115.9     10580    2116.3     10593     2116.8      10616    2116.5      10644
GR   2116.2      10658    2116.1     10680    2116.1     10729     2115.9      10781    2115.7      10829
GR   2115.5      10882    2115.9     10993    2115.8     11030     2115.0      11108    2114.4      11161
GR   2113.5      11189    2110.3     11205    2110.5     11222     2112.9      11235    2109.1      11242
GR   2109.1      11249    2112.8     11264    2114.5     11290     2117.0      11327    2118.6      11367
GR   2123.3      11510
```

The ET station for the flow in the right overbank was judged to be the maximum limit for effective flow.

```
ET                 9.1       7.1                                        9969      10052                 10472
QT       2        7800      7800
X1    26.17         64      9967     10039      1225      1040     1132.0
GR   2160.5       9322    2160.3      9339    2159.0      9377     2158.6       9388    2155.2       9405
GR   2153.6       9419    2152.8      9457    2152.1      9498     2151.4       9556    2150.9       9605
GR   2149.4       9633    2148.4      9670    2147.7      9709     2146.4       9766    2145.2       9786
GR   2143.3       9832    2142.1      9867    2141.5      9891     2140.9       9927    2138.3       9940
GR   2136.6       9957    2132.3      9967    2122.5      9980     2121.9       9988    2121.7      10000
GR   2128.2      10020    2129.9     10039    2131.5     10063     2131.2      10085    2131.5      10098
GR   2130.8      10122    2129.5     10141    2130.1     10155     2130.2      10165    2131.5      10194
GR   2131.8      10227    2131.3     10274    2130.2     10286     2128.2      10302    2129.3      10313
GR   2130.8      10335    2131.2     10373    2129.7     10391     2128.3      10403    2129.7      10418
GR   2132.6      10448    2131.9     10472    2132.9     10501     2133.3      10535    2133.4      10566
GR   2132.5      10609    2131.9     10640    2131.7     10651     2132.7      10668    2134.4      10720
GR   2135.1      10759    2136.1     10820    2136.5     10860     2136.0      10933    2136.4      10948
GR   2136.2      10973    2135.2     10990    2133.2     11036     2131.6      11050
1
   25APR00      12:00:08                                                                          PAGE   41

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

FLOW DISTRIBUTION FOR SECNO=     18.16          CWSEL=   1736.55

STA=    9722.    9775.    9836.   10075.   10199.   10330.   10380.   10430.   10650.   10711.
  PER Q=      3.5      2.6     50.3      3.3     17.9     11.5      6.2      4.6       .1
   AREA=    145.8    135.6   1025.1    183.7    628.8    327.5    227.5    341.0     16.8
    VEL=      6.6      5.3     13.6      5.0      7.9      9.7      7.6      3.7      1.2
  DEPTH=      2.8      2.2      4.4      1.5      4.8      6.5      4.5      1.5       .3

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```

```
T1      Floodway Run - Method 1
T2      Date:  4-25-97
T3      Floodway Run - Method 1

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

     -10       3                                                                   1522.96

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     2                   -1

FLOW DISTRIBUTION FOR SECNO=     18.16          CWSEL=   1736.96

STA=    9752.    9775.    9836.   10075.   10199.   10330.   10380.   10425.
  PER Q=      3.1      3.1     53.3      4.0     18.8     11.7      6.1
   AREA=    114.7    160.2   1119.1    221.8    681.5    347.6    231.8
    VEL=      7.4      5.3     13.2      5.0      7.7      9.3      7.2
  DEPTH=      5.0      2.6      4.8      1.8      5.2      7.0      5.2

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                                                                                THIS RUN EXECUTED 25APR00     12:00:21
*************************************
 HEC-2 WATER SURFACE PROFILES

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

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

MONT. WAT. AND HEC

SUMMARY PRINTOUT
```

	SECNO	Q	CWSEL	DEPTH	K*XNL	K*XNCH	K*XNR	CRIWS	VLOB	VCH	VROB	XLCH	SECNO
*	13.000	15267.22	1523.44	4.94	.00	25.00	.00	1523.44	.00	12.65	.00	.00	13.00
*	13.000	15267.22	1523.44	4.94	.00	25.00	.00	1523.44	.00	12.65	.00	.00	13.00
	13.020	15267.22	1524.91	5.91	.00	25.00	.00	1523.94	.00	10.57	.00	120.00	13.02
	13.020	15267.22	1524.91	5.91	.00	25.00	.00	1523.94	.00	10.57	.00	120.00	13.02
	13.040	15267.22	1526.65	8.55	.00	40.00	40.00	.00	.00	6.30	.33	100.00	13.04
	13.040	15267.22	1526.65	8.55	.00	40.00	40.00	.00	.00	6.30	.33	100.00	13.04
	13.080	15267.22	1527.60	9.40	69.00	50.00	44.00	.00	2.00	3.74	2.69	230.00	13.08
	13.080	15267.22	1527.60	9.40	69.00	50.00	44.00	.00	2.00	3.74	2.69	230.00	13.08
*	13.160	15267.22	1528.55	7.05	38.00	52.00	42.00	.00	4.28	5.18	3.23	421.00	13.16
*	13.160	15267.22	1528.55	7.05	38.00	52.00	42.00	.00	4.28	5.18	3.23	421.00	13.16
*	13.280	18900.00	1532.61	10.01	38.00	52.00	42.00	1532.43	9.09	7.79	6.54	600.00	13.28
*	13.280	18900.00	1532.61	10.01	38.00	52.00	42.00	1532.43	9.09	7.79	6.54	600.00	13.28
*	13.400	26700.00	1538.03	11.23	38.00	52.00	42.00	.00	4.03	4.88	4.89	678.60	13.40
*	13.400	26700.00	1538.97	12.17	.00	52.00	42.00	.00	.00	6.59	6.46	678.60	13.40
*	13.550	26700.00	1543.21	11.01	38.00	52.00	42.00	.00	7.42	5.99	.85	787.30	13.55
	13.550	26700.00	1544.21	12.01	38.00	52.00	.00	.00	6.51	5.58	.00	787.30	13.55
	13.660	26700.00	1547.91	7.71	38.00	52.00	.00	.00	6.74	4.41	.00	549.10	13.66
	13.660	26700.00	1548.35	8.15	38.00	52.00	.00	.00	7.89	5.95	.00	549.10	13.66
	13.860	26700.00	1555.92	9.62	38.00	52.00	42.00	.00	6.84	5.97	5.04	1049.10	13.86
	13.860	26700.00	1556.65	10.35	38.00	52.00	42.00	.00	7.03	5.78	5.13	1049.10	13.86
	14.070	26700.00	1564.65	7.15	38.00	52.00	42.00	.00	6.47	6.74	4.24	1134.10	14.07
	14.070	26700.00	1564.76	7.26	38.00	52.00	42.00	.00	6.97	7.60	4.91	1134.10	14.07

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	SECNO	Q	CWSEL	DEPTH	K*XNL	K*XNCH	K*XNR	CRIWS	VLOB	VCH	VROB	XLCH	SECNO
*	14.300	26700.00	1574.16	14.56	38.00	52.00	42.00	1574.16	4.48	10.82	5.89	1213.60	14.30
*	14.300	26700.00	1575.03	15.43	38.00	52.00	42.00	1575.03	6.46	11.90	9.01	1213.60	14.30
	14.540	26700.00	1583.69	12.09	38.00	52.00	42.00	.00	2.12	7.96	1.43	1273.20	14.54
	14.540	26700.00	1584.29	12.69	.00	52.00	.00	.00	.00	7.33	.00	1273.20	14.54
*	14.740	26700.00	1591.88	10.18	59.00	39.00	42.00	1591.88	6.38	14.18	4.49	1070.90	14.74
*	14.740	26700.00	1591.63	9.93	59.00	39.00	42.00	1591.63	8.00	16.63	7.70	1070.90	14.74
	14.890	26700.00	1596.90	13.70	59.00	39.00	42.00	1596.49	5.67	13.95	1.15	756.40	14.89

*	14.890	26700.00	1597.89	14.69	59.00	39.00	42.00	.00	5.44	12.50	2.44	756.40	14.89
	15.060	26700.00	1602.99	11.69	59.00	39.00	42.00	.00	3.05	9.17	5.77	930.30	15.06
	15.060	26700.00	1602.88	11.58	.00	39.00	.00	.00	.00	10.56	.00	930.30	15.06
*	15.120	26700.00	1605.22	9.82	59.00	39.00	42.00	1605.22	3.16	11.17	6.90	283.60	15.12
*	15.120	26700.00	1605.20	9.80	.00	39.00	.00	1605.20	.00	13.35	.00	283.60	15.12
	15.220	26700.00	1610.20	11.30	59.00	39.00	42.00	.00	1.58	11.20	6.51	553.10	15.22
*	15.220	26700.00	1611.17	12.27	.00	39.00	42.00	.00	.00	9.43	6.13	553.10	15.22
	15.410	26700.00	1617.54	9.94	59.00	39.00	42.00	.00	2.28	10.86	3.64	968.90	15.41
	15.410	26700.00	1616.98	9.38	.00	39.00	.00	.00	.00	11.94	.00	968.90	15.41
*	15.550	26700.00	1623.07	9.67	59.00	39.00	42.00	1623.07	5.17	13.22	6.93	755.30	15.55
	15.550	26700.00	1623.50	10.10	59.00	39.00	42.00	1623.41	5.96	14.99	7.87	755.30	15.55
	15.750	26700.00	1630.40	14.10	59.00	39.00	42.00	.00	5.13	11.83	3.85	1048.40	15.75
*	15.750	26700.00	1631.38	15.08	59.00	39.00	42.00	.00	4.76	10.42	4.20	1048.40	15.75
*	15.890	26700.00	1635.37	8.57	59.00	39.00	42.00	1635.37	6.04	13.11	3.62	738.40	15.89
*	15.890	26700.00	1636.31	9.51	59.00	39.00	.00	1636.31	7.00	14.36	.00	738.40	15.89
	16.070	26700.00	1644.24	9.94	59.00	39.00	42.00	.00	6.04	12.93	1.85	950.30	16.07
	16.070	26700.00	1645.15	10.85	59.00	39.00	.00	.00	6.25	12.45	.00	950.30	16.07
	16.190	26700.00	1648.89	11.39	59.00	39.00	.00	.00	5.31	12.72	.00	645.60	16.19
	16.190	26700.00	1649.14	11.64	59.00	39.00	.00	.00	6.52	14.13	.00	645.60	16.19
*	16.270	26700.00	1652.31	12.91	59.00	39.00	.00	1652.31	5.60	12.64	.00	422.10	16.27
*	16.270	26700.00	1652.83	13.43	.00	39.00	.00	1652.83	.00	14.75	.00	422.10	16.27
	16.490	26700.00	1661.97	8.67	59.00	39.00	42.00	.00	3.09	9.03	8.16	1153.60	16.49
*	16.490	26700.00	1662.93	9.63	.00	39.00	42.00	.00	.00	8.28	7.71	1153.60	16.49
	16.680	26700.00	1668.62	7.32	.00	43.00	57.00	.00	.00	8.47	2.02	997.50	16.68
*	16.680	26700.00	1668.47	7.17	.00	43.00	.00	.00	.00	8.77	.00	997.50	16.68
*	16.860	27300.00	1679.49	8.29	.00	33.00	.00	1679.49	.00	14.55	.00	879.10	16.86
*	16.860	27300.00	1679.67	8.47	.00	33.00	.00	1679.67	.00	14.12	.00	879.10	16.86

	SECNO	Q	CWSEL	DEPTH	K*XNL	K*XNCH	K*XNR	CRIWS	VLOB	VCH	VROB	XLCH	SECNO
	16.870	27300.00	1680.56	9.36	.00	33.00	.00	.00	.00	12.99	.00	146.00	16.87
	16.870	27300.00	1680.60	9.40	.00	33.00	.00	.00	.00	12.90	.00	146.00	16.87
*	16.960	27300.00	1684.87	8.66	59.00	33.00	.00	1684.87	3.55	12.98	.00	456.20	16.96
*	16.960	27300.00	1684.87	8.66	59.00	33.00	.00	1684.87	3.55	12.97	.00	456.20	16.96
	17.060	27300.00	1689.88	11.67	59.00	33.00	42.00	.00	5.39	13.11	3.15	566.00	17.06
*	17.060	27300.00	1690.13	11.92	59.00	33.00	42.00	1690.13	5.71	13.93	3.59	566.00	17.06
*	17.180	27300.00	1695.25	9.04	48.00	46.00	48.00	1695.25	5.77	11.77	4.51	600.80	17.18
*	17.180	27300.00	1695.19	8.98	48.00	46.00	48.00	1695.19	6.07	12.09	4.68	600.80	17.18
	17.300	27300.00	1701.37	9.16	48.00	46.00	48.00	.00	6.13	9.56	5.41	644.40	17.30
	17.300	27300.00	1701.48	9.27	48.00	46.00	48.00	.00	6.28	9.43	5.52	644.40	17.30
	17.390	27300.00	1705.16	8.95	48.00	46.00	48.00	.00	5.35	11.43	6.73	500.00	17.39
	17.390	27300.00	1705.16	8.95	48.00	46.00	48.00	.00	5.58	11.63	6.97	500.00	17.39
	17.480	27300.00	1709.75	7.54	60.00	42.00	60.00	.00	5.15	12.60	5.44	429.40	17.48
	17.480	27300.00	1709.84	7.63	60.00	42.00	60.00	.00	5.23	12.60	5.55	429.40	17.48
*	17.570	27300.00	1713.84	11.63	60.00	42.00	60.00	1713.84	6.06	14.41	5.43	474.40	17.57
	17.570	27300.00	1713.88	11.67	60.00	42.00	60.00	1713.88	6.24	14.60	5.72	474.40	17.57
	17.650	27300.00	1717.52	13.31	60.00	42.00	60.00	.00	5.07	13.33	4.01	460.80	17.65
	17.650	27300.00	1717.65	13.44	60.00	42.00	60.00	.00	5.07	13.12	4.09	460.80	17.65
	17.780	27300.00	1722.50	9.12	60.00	42.00	60.00	.00	4.84	10.03	6.31	661.30	17.78
	17.780	27300.00	1722.49	9.11	60.00	42.00	60.00	.00	4.93	10.08	6.37	661.30	17.78
	17.840	27300.00	1724.75	6.54	60.00	42.00	60.00	1724.69	4.72	11.78	5.36	341.70	17.84
	17.840	27300.00	1724.75	6.54	60.00	42.00	60.00	1724.70	4.75	11.87	5.49	341.70	17.84
	17.950	27300.00	1730.47	8.26	60.00	42.00	60.00	1730.31	4.65	12.12	5.49	563.80	17.95
	17.950	27300.00	1730.51	8.30	60.00	42.00	60.00	.00	4.67	12.12	5.83	563.80	17.95
*	18.090	27700.00	1734.96	11.46	60.00	42.00	60.00	.00	4.84	7.10	4.27	705.80	18.09
	18.090	27700.00	1735.16	11.66	60.00	42.00	60.00	.00	5.77	7.94	6.19	705.80	18.09
*	18.160	27700.00	1736.55	7.75	55.00	30.00	55.00	1736.55	5.98	13.59	7.00	377.60	18.16
	18.160	27700.00	1736.96	8.16	55.00	30.00	55.00	.00	6.18	13.20	7.57	377.60	18.16
*	18.230	27700.00	1741.75	11.75	55.00	30.00	55.00	1741.75	5.68	12.32	3.03	370.00	18.23
*	18.230	27700.00	1741.77	11.77	55.00	30.00	55.00	1741.77	6.84	14.09	3.85	370.00	18.23
	18.290	27700.00	1743.06	10.46	55.00	30.00	55.00	1742.91	5.92	14.16	4.91	300.00	18.29
*	18.290	27700.00	1744.11	11.51	55.00	30.00	55.00	.00	5.35	12.21	4.69	300.00	18.29

	18.490	27700.00	1750.88	9.18	55.00	42.00	55.00	.00	5.85	11.68	6.08	1099.70	18.49
*	18.490	27700.00	1750.98	9.28	.00	42.00	55.00	1750.98	.00	13.29	6.75	1099.70	18.49

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	SECNO	Q	CWSEL	DEPTH	K*XNL	K*XNCH	K*XNR	CRIWS	VLOB	VCH	VROB	XLCH	SECNO
*	18.570	27700.00	1754.08	10.58	40.00	30.00	40.00	1754.08	9.38	14.06	4.77	389.00	18.57
*	18.570	27700.00	1754.64	11.14	40.00	30.00	40.00	.00	9.24	14.01	5.26	389.00	18.57
*	18.740	27300.00	1760.57	10.17	40.00	30.00	40.00	1760.57	9.74	11.21	3.66	917.80	18.74
*	18.740	27300.00	1760.63	10.23	40.00	30.00	.00	1760.63	10.07	11.81	.00	917.80	18.74
	18.840	27300.00	1764.69	8.99	40.00	30.00	40.00	1764.59	9.31	14.02	5.21	497.10	18.84
*	18.840	27300.00	1765.57	9.87	40.00	30.00	40.00	1765.57	9.10	14.62	6.36	497.10	18.84
*	18.960	27300.00	1771.34	9.14	40.00	30.00	40.00	1771.34	5.71	13.45	5.27	631.70	18.96
*	18.960	27300.00	1771.86	9.66	40.00	30.00	40.00	1771.86	6.14	13.74	6.15	631.70	18.96
*	19.070	27300.00	1775.13	10.33	31.00	45.00	31.00	1775.13	9.44	9.85	5.19	601.00	19.07
	19.070	27300.00	1775.41	10.61	31.00	45.00	31.00	.00	9.84	9.80	6.02	601.00	19.07
*	19.180	27300.00	1780.34	10.34	31.00	45.00	.00	1780.34	10.35	10.40	.00	598.70	19.18
*	19.180	27300.00	1780.49	10.49	31.00	45.00	.00	1780.49	10.58	10.29	.00	598.70	19.18
	19.260	27300.00	1784.76	11.76	31.00	45.00	31.00	1784.67	11.17	9.82	6.55	416.40	19.26
*	19.260	27300.00	1784.80	11.80	31.00	45.00	31.00	1784.80	11.47	9.97	5.60	416.40	19.26
	19.410	27300.00	1790.80	8.20	50.00	32.00	55.00	.00	4.52	10.94	6.35	769.40	19.41
	19.410	27300.00	1790.90	8.30	50.00	32.00	55.00	.00	4.59	10.86	6.32	769.40	19.41
*	19.520	27300.00	1794.85	8.65	50.00	32.00	55.00	1794.85	8.46	16.90	8.34	606.30	19.52
*	19.520	27300.00	1794.85	8.65	50.00	32.00	55.00	1794.85	8.45	16.89	8.33	606.30	19.52
	19.620	27300.00	1800.83	10.53	.00	32.00	55.00	.00	.00	12.16	6.67	528.00	19.62
	19.620	27300.00	1800.82	10.52	.00	32.00	55.00	.00	.00	12.17	6.67	528.00	19.62
*	19.720	27300.00	1805.02	9.92	50.00	32.00	55.00	1805.02	7.33	15.24	6.28	509.90	19.72
*	19.720	27300.00	1805.05	9.95	50.00	32.00	55.00	1805.05	7.50	15.40	6.37	509.90	19.72
*	19.830	27300.00	1810.83	11.53	50.00	32.00	55.00	1810.83	5.87	14.97	5.49	567.80	19.83
*	19.830	27300.00	1810.78	11.48	50.00	32.00	55.00	1810.78	6.11	15.44	5.67	567.80	19.83
*	19.920	27300.00	1814.80	12.80	60.00	42.00	60.00	1814.80	4.18	13.43	6.11	492.00	19.92
	19.920	27300.00	1814.98	12.98	60.00	42.00	60.00	.00	5.41	13.69	6.30	492.00	19.92
	20.050	27300.00	1820.70	10.00	60.00	42.00	60.00	.00	4.79	8.77	5.20	700.00	20.05
*	20.050	27300.00	1820.85	10.15	60.00	42.00	60.00	.00	4.68	8.49	5.05	700.00	20.05
*	20.160	27300.00	1824.75	9.25	60.00	42.00	60.00	.00	6.22	10.65	9.54	555.70	20.16
*	20.160	27300.00	1824.72	9.22	60.00	42.00	60.00	1824.72	6.39	10.97	9.86	555.70	20.16
*	20.260	27300.00	1831.31	9.41	60.00	32.00	60.00	.00	5.44	10.16	6.55	531.60	20.26
*	20.260	27300.00	1831.45	9.55	60.00	32.00	60.00	.00	5.36	10.25	6.58	531.60	20.26
	20.380	27300.00	1835.69	9.79	60.00	32.00	60.00	.00	5.95	11.05	6.59	622.30	20.38
	20.380	27300.00	1835.76	9.86	60.00	32.00	60.00	.00	5.99	11.06	6.58	622.30	20.38

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	SECNO	Q	CWSEL	DEPTH	K*XNL	K*XNCH	K*XNR	CRIWS	VLOB	VCH	VROB	XLCH	SECNO
*	20.480	27300.00	1841.48	9.08	60.00	32.00	60.00	1841.48	4.60	14.30	5.42	526.70	20.48
*	20.480	27300.00	1842.08	9.68	60.00	32.00	60.00	1842.08	4.84	14.97	6.40	526.70	20.48
*	20.620	27300.00	1848.79	9.49	60.00	32.00	60.00	1848.79	4.47	14.65	5.00	788.90	20.62
*	20.620	27300.00	1849.51	10.21	60.00	32.00	60.00	1849.51	5.01	15.27	5.05	788.90	20.62
*	20.640	27300.00	1850.90	8.90	45.00	43.00	45.00	.00	4.23	4.83	4.45	135.00	20.64
*	20.640	27300.00	1851.90	9.90	.00	43.00	45.00	.00	.00	5.58	4.50	135.00	20.64
*	20.710	27300.00	1852.87	9.87	60.00	38.00	60.00	1852.87	5.48	11.81	5.13	369.60	20.71
*	20.710	27300.00	1853.49	10.49	60.00	38.00	60.00	1853.49	6.47	13.12	4.52	369.60	20.71
*	20.790	27300.00	1857.17	9.67	60.00	38.00	60.00	.00	4.38	9.01	3.74	422.40	20.79
*	20.790	27300.00	1858.09	10.59	60.00	38.00	.00	.00	5.23	10.82	.00	422.40	20.79
*	20.900	27300.00	1862.43	9.83	60.00	38.00	60.00	1862.43	4.90	11.55	4.29	580.80	20.90
*	20.900	27300.00	1862.77	10.17	60.00	38.00	60.00	1862.77	6.15	12.63	4.07	580.80	20.90
	20.980	27300.00	1866.18	12.98	60.00	38.00	60.00	1865.81	4.68	10.43	2.63	422.40	20.98
	20.980	27300.00	1866.91	13.71	60.00	38.00	.00	.00	4.94	9.69	.00	422.40	20.98
*	21.050	27300.00	1869.77	12.17	60.00	38.00	60.00	1869.77	4.24	12.62	2.27	369.60	21.05
*	21.050	27300.00	1869.92	12.32	60.00	38.00	60.00	1869.92	4.79	13.54	3.98	369.60	21.05
	21.110	27300.00	1872.00	11.50	60.00	38.00	60.00	.00	4.44	10.95	2.06	316.80	21.11
	21.110	27300.00	1872.76	12.26	60.00	38.00	.00	.00	4.34	9.90	.00	316.80	21.11
*	21.180	27300.00	1876.07	11.07	60.00	38.00	60.00	1876.07	4.33	12.61	2.93	369.60	21.18
*	21.180	27300.00	1876.09	11.09	60.00	38.00	.00	1876.09	4.69	13.02	.00	369.60	21.18

*	21.250	27300.00	1880.86	12.16	60.00	38.00	60.00	1880.86	3.94	12.50	2.19	369.60	21.25
*	21.250	27300.00	1880.99	12.29	60.00	38.00	.00	1880.99	4.30	13.69	.00	369.60	21.25
	21.310	27300.00	1882.64	11.94	60.00	38.00	60.00	.00	3.39	10.26	2.61	316.80	21.31
	21.310	27300.00	1883.45	12.75	60.00	38.00	60.00	.00	3.52	9.98	3.07	316.80	21.31
	21.350	27300.00	1883.36	11.86	60.00	38.00	60.00	.00	5.18	13.62	3.18	211.20	21.35
	21.350	27300.00	1884.12	12.62	60.00	38.00	60.00	.00	5.06	12.50	2.91	211.20	21.35
	21.410	27300.00	1886.75	12.55	60.00	38.00	60.00	.00	6.52	13.62	4.74	422.00	21.41
	21.410	27300.00	1886.69	12.49	60.00	38.00	60.00	.00	7.16	14.05	4.92	422.00	21.41
	21.490	27300.00	1890.86	8.86	60.00	38.00	60.00	.00	7.15	12.14	6.98	475.00	21.49
	21.490	27300.00	1891.09	9.09	60.00	38.00	60.00	.00	6.81	11.61	6.63	475.00	21.49
	21.580	27300.00	1895.50	8.70	60.00	38.00	60.00	.00	5.88	9.00	3.28	475.20	21.58
*	21.580	27300.00	1895.56	8.76	60.00	38.00	.00	1895.56	5.91	11.41	.00	475.20	21.58
	21.630	27300.00	1897.88	9.88	60.00	38.00	60.00	1897.48	6.52	11.07	2.56	264.00	21.63
	21.630	27300.00	1898.81	10.81	60.00	38.00	60.00	.00	4.82	10.23	3.80	264.00	21.63

	SECNO	Q	CWSEL	DEPTH	K*XNL	K*XNCH	K*XNR	CRIWS	VLOB	VCH	VROB	XLCH	SECNO
	21.690	27300.00	1902.22	8.22	60.00	38.00	60.00	.00	4.65	9.33	4.66	422.40	21.69
	21.690	27300.00	1902.24	8.24	60.00	38.00	60.00	.00	4.81	9.66	4.83	422.40	21.69
	21.770	27300.00	1905.63	10.63	60.00	38.00	60.00	1905.36	7.31	12.07	3.59	422.40	21.77
	21.770	27300.00	1905.73	10.73	60.00	38.00	60.00	.00	7.04	11.79	3.77	422.40	21.77
*	21.820	27300.00	1908.88	8.88	60.00	38.00	60.00	1908.88	7.09	13.63	4.56	264.00	21.82
*	21.820	27300.00	1908.92	8.92	60.00	38.00	60.00	1908.92	7.38	14.26	4.83	264.00	21.82
	21.910	27300.00	1914.04	12.04	60.00	38.00	60.00	.00	6.33	9.18	3.46	475.20	21.91
	21.910	27300.00	1914.60	12.60	60.00	38.00	.00	.00	6.39	10.69	.00	475.20	21.91
	21.990	27300.00	1917.76	7.86	60.00	38.00	60.00	1917.60	6.56	12.84	4.31	422.40	21.99
	21.990	27300.00	1918.43	8.53	60.00	38.00	.00	.00	6.08	12.41	.00	422.40	21.99
	22.080	27300.00	1922.61	9.61	60.00	38.00	60.00	.00	5.34	9.28	3.39	475.20	22.08
	22.080	27300.00	1922.98	9.98	60.00	38.00	60.00	.00	6.30	10.80	4.58	475.20	22.08
	22.150	27300.00	1925.39	10.39	60.00	38.00	60.00	.00	7.06	10.76	2.09	369.60	22.15
	22.150	27300.00	1926.11	11.11	60.00	38.00	60.00	.00	7.32	11.59	3.04	369.60	22.15
	22.220	27300.00	1928.96	10.96	60.00	38.00	60.00	.00	8.59	11.82	1.65	369.60	22.22
	22.220	27300.00	1929.46	11.46	60.00	38.00	.00	.00	8.71	11.41	.00	369.60	22.22
	22.290	27300.00	1933.00	10.00	60.00	38.00	60.00	.00	7.37	10.75	2.13	369.60	22.29
	22.290	27300.00	1933.37	10.37	60.00	38.00	60.00	.00	7.67	12.06	1.83	369.60	22.29
	22.360	27300.00	1936.94	11.94	60.00	38.00	60.00	.00	8.55	11.16	4.12	369.60	22.36
	22.360	27300.00	1937.48	12.48	60.00	38.00	.00	.00	8.18	10.63	.00	369.60	22.36
	22.430	27300.00	1941.79	8.39	60.00	38.00	60.00	.00	6.38	7.84	6.50	369.60	22.43
	22.430	27300.00	1942.23	8.83	60.00	38.00	.00	.00	7.41	10.03	.00	369.60	22.43
	22.480	27300.00	1944.10	9.10	60.00	38.00	60.00	.00	7.42	12.45	6.30	264.00	22.48
	22.480	27300.00	1944.97	9.97	60.00	38.00	.00	.00	7.56	13.70	.00	264.00	22.48
	22.560	27300.00	1948.18	9.68	60.00	38.00	60.00	.00	6.75	12.42	4.00	422.40	22.56
	22.560	27300.00	1949.07	10.57	60.00	38.00	60.00	.00	6.65	12.79	3.83	422.40	22.56
*	22.670	27300.00	1954.37	9.87	60.00	38.00	60.00	1954.37	6.38	15.09	5.03	528.00	22.67
*	22.670	27300.00	1954.94	10.44	60.00	38.00	.00	1954.94	6.57	15.26	.00	528.00	22.67
*	22.730	27300.00	1957.89	10.89	60.00	38.00	60.00	1957.89	5.53	13.87	2.69	316.80	22.73
*	22.730	27300.00	1958.64	11.64	60.00	38.00	.00	1958.64	6.08	14.84	.00	316.80	22.73
*	22.790	27300.00	1960.94	10.94	60.00	38.00	60.00	1960.94	4.97	13.74	4.56	316.80	22.79
	22.790	27300.00	1961.63	11.63	60.00	38.00	60.00	.00	5.38	14.13	4.97	316.80	22.79
	22.860	24400.00	1964.52	11.02	60.00	38.00	60.00	.00	4.77	10.13	2.55	370.00	22.86
	22.860	24400.00	1965.27	11.77	60.00	38.00	.00	.00	4.68	9.36	.00	370.00	22.86

	SECNO	Q	CWSEL	DEPTH	K*XNL	K*XNCH	K*XNR	CRIWS	VLOB	VCH	VROB	XLCH	SECNO
	22.950	24400.00	1972.66	10.66	50.00	48.00	50.00	.00	4.74	7.55	1.27	1003.00	22.95
*	22.950	24400.00	1972.69	10.69	.00	48.00	.00	.00	.00	8.97	.00	1003.00	22.95
*	22.960	24400.00	1974.46	14.86	60.00	32.00	.00	1974.46	4.44	15.19	.00	30.00	22.96
*	22.960	24400.00	1974.59	14.99	60.00	32.00	.00	1974.59	5.43	16.56	.00	30.00	22.96
*	23.130	24400.00	1981.33	11.53	60.00	32.00	60.00	1981.33	4.41	14.58	5.30	880.20	23.13
*	23.130	24400.00	1982.25	12.45	60.00	32.00	60.00	1982.25	4.44	14.41	5.18	880.20	23.13
*	23.250	24400.00	1987.17	9.87	60.00	32.00	60.00	1987.17	3.94	13.83	5.60	619.40	23.25

*	23.250	24400.00	1987.81	10.51	.00	32.00	60.00	1987.81	.00	16.06	7.18	619.40	23.25
*	23.330	24400.00	1991.35	11.85	60.00	32.00	60.00	1991.35	3.19	18.13	8.14	432.60	23.33
	23.330	24400.00	1992.11	12.61	.00	32.00	60.00	.00	.00	18.14	8.64	432.60	23.33
	23.450	24400.00	1998.50	10.10	60.00	32.00	60.00	.00	7.08	14.79	8.56	623.50	23.45
	23.450	24400.00	1998.99	10.59	60.00	32.00	60.00	.00	7.40	14.11	8.09	623.50	23.45
*	23.550	24400.00	2003.92	7.22	60.00	32.00	60.00	2003.92	6.50	14.15	6.42	545.10	23.55
*	23.550	24400.00	2004.52	7.82	60.00	32.00	60.00	2004.52	7.02	14.98	6.40	545.10	23.55
	23.640	11800.00	2008.98	8.98	60.00	32.00	60.00	.00	3.79	11.37	3.89	500.20	23.64
	23.640	11800.00	2009.84	9.84	60.00	32.00	60.00	.00	3.13	9.13	3.35	500.20	23.64
*	23.870	11800.00	2018.87	10.07	60.00	32.00	60.00	2018.87	3.38	12.20	2.41	1179.60	23.87
*	23.870	11800.00	2019.04	10.24	60.00	32.00	.00	2019.04	3.51	13.14	.00	1179.60	23.87
	23.940	11800.00	2020.86	10.46	60.00	32.00	60.00	2020.83	4.45	12.24	3.25	403.20	23.94
	23.940	11800.00	2021.78	11.38	60.00	32.00	60.00	.00	3.08	10.48	2.26	403.20	23.94
	24.030	11800.00	2025.13	7.63	60.00	32.00	60.00	.00	4.07	10.48	4.79	457.80	24.03
*	24.030	11800.00	2025.83	8.33	60.00	32.00	60.00	2025.83	4.31	15.03	7.18	457.80	24.03
*	24.120	11800.00	2028.90	8.30	60.00	32.00	60.00	2028.90	2.15	11.82	1.83	451.70	24.12
*	24.120	11800.00	2029.75	9.15	60.00	32.00	.00	.00	2.85	10.48	.00	451.70	24.12
*	24.250	9700.00	2033.67	9.67	.00	32.00	60.00	2033.67	.00	14.03	5.47	708.60	24.25
*	24.250	9700.00	2033.98	9.98	.00	32.00	60.00	2033.98	.00	14.22	5.42	708.60	24.25
*	24.380	9700.00	2038.55	7.05	60.00	30.00	60.00	.00	2.51	7.87	2.43	708.80	24.38
*	24.380	9700.00	2038.87	7.37	.00	30.00	.00	.00	.00	7.73	.00	708.80	24.38
*	24.480	9700.00	2043.74	6.94	60.00	30.00	60.00	2043.74	3.87	11.92	1.75	501.70	24.48
*	24.480	9700.00	2044.46	7.66	60.00	30.00	.00	2044.46	4.11	13.30	.00	501.70	24.48
*	24.610	9700.00	2050.04	9.84	60.00	30.00	60.00	2050.04	2.87	11.60	3.26	668.90	24.61
*	24.610	9700.00	2050.49	10.29	.00	30.00	.00	2050.49	.00	15.87	.00	668.90	24.61
*	24.740	9700.00	2055.85	10.05	60.00	30.00	60.00	2055.85	1.14	10.79	2.80	668.80	24.74
*	24.740	9700.00	2056.69	10.89	.00	30.00	.00	.00	.00	10.77	.00	668.80	24.74

	SECNO	Q	CWSEL	DEPTH	K*XNL	K*XNCH	K*XNR	CRIWS	VLOB	VCH	VROB	XLCH	SECNO
*	24.870	7800.00	2061.94	7.34	60.00	30.00	60.00	2061.94	1.56	11.10	3.82	732.80	24.87
*	24.870	7800.00	2061.99	7.39	60.00	30.00	60.00	2061.99	2.17	12.82	3.54	732.80	24.87
	24.950	7800.00	2064.96	7.56	60.00	30.00	60.00	.00	.41	7.85	3.95	405.60	24.95
	24.950	7800.00	2065.79	8.39	.00	30.00	60.00	.00	.00	9.57	2.70	405.60	24.95
*	25.120	7800.00	2072.77	8.07	.00	30.00	60.00	2072.77	.00	12.91	2.28	867.70	25.12
*	25.120	7800.00	2072.79	8.09	.00	30.00	60.00	2072.79	.00	12.86	2.28	867.70	25.12
*	25.280	7800.00	2081.36	9.86	60.00	30.00	60.00	2081.36	2.74	12.05	3.40	867.50	25.28
*	25.280	7800.00	2081.44	9.94	60.00	30.00	60.00	2081.44	3.64	13.83	3.95	867.50	25.28
	25.380	7800.00	2084.98	6.78	60.00	30.00	60.00	.00	2.66	5.69	3.72	538.70	25.38
*	25.380	7800.00	2085.95	7.75	60.00	30.00	60.00	.00	2.19	5.36	3.13	538.70	25.38
*	25.450	7800.00	2088.35	7.35	.00	30.00	60.00	2088.35	.00	9.81	7.56	362.20	25.45
*	25.450	7800.00	2089.24	8.24	.00	30.00	60.00	2089.24	.00	11.30	5.13	362.20	25.45
*	25.560	7800.00	2095.84	10.34	60.00	30.00	60.00	.00	2.21	6.43	5.43	583.50	25.56
*	25.560	7800.00	2095.91	10.41	60.00	30.00	60.00	.00	2.22	6.39	5.30	583.50	25.56
	25.630	7800.00	2099.06	9.36	60.00	30.00	60.00	.00	1.36	8.78	6.35	365.70	25.63
*	25.630	7800.00	2099.44	9.74	60.00	30.00	60.00	2099.41	2.54	10.25	7.79	365.70	25.63
*	25.700	7800.00	2102.31	3.51	.00	20.00	.00	2102.31	.00	10.51	.00	396.00	25.70
*	25.700	7800.00	2102.54	3.74	.00	20.00	.00	.00	.00	9.84	.00	396.00	25.70
*	25.720	7800.00	2104.11	4.91	.00	20.00	.00	.00	.00	8.10	.00	79.70	25.72
*	25.720	7800.00	2104.11	4.91	.00	20.00	.00	.00	.00	8.10	.00	79.70	25.72
*	25.830	7800.00	2112.46	8.86	.00	32.00	55.00	2112.46	.00	10.93	3.81	612.50	25.83
*	25.830	7800.00	2113.04	9.44	.00	32.00	.00	2113.04	.00	12.69	.00	612.50	25.83
*	25.950	7800.00	2119.31	10.21	55.00	32.00	55.00	2119.31	2.59	11.05	3.31	620.60	25.95
*	25.950	7800.00	2120.33	11.23	55.00	32.00	55.00	2120.33	4.00	13.84	3.20	620.60	25.95
*	26.170	7800.00	2132.48	10.78	55.00	32.00	55.00	2132.48	.02	11.24	3.08	1132.00	26.17
*	26.170	7800.00	2132.69	10.99	.00	32.00	55.00	2132.69	.00	15.20	4.03	1132.00	26.17

MONT. WAT. AND HEC

SUMMARY PRINTOUT

	SECNO	SSTA	TOPWID	ENDST
*	13.000	9820.21	244.58	10064.79
*	13.000	9820.21	244.58	10064.79
	13.020	9820.13	244.74	10064.87
	13.020	9820.13	244.74	10064.87
	13.040	9727.66	435.01	10221.26
	13.040	9727.66	435.01	10221.26
	13.080	9550.00	1116.36	10666.36
	13.080	9550.00	1116.36	10666.36
*	13.160	9421.00	1379.01	10800.01
*	13.160	9421.00	1379.01	10800.01
*	13.280	9537.00	1239.74	10802.00
*	13.280	9537.00	1239.74	10802.00
*	13.400	8932.54	2115.98	11084.94
*	13.400	9670.00	932.00	10602.00
*	13.550	8731.89	1733.57	10502.88
	13.550	9160.00	1334.00	10494.00
	13.660	8527.85	1955.75	10483.60
	13.660	9055.00	1427.00	10482.00
	13.860	8225.59	1768.99	10268.59
	13.860	8708.00	1312.71	10232.00
	14.070	8594.55	1943.43	10537.97
	14.070	8805.00	1724.00	10529.00
*	14.300	8646.87	2213.30	10868.65
*	14.300	9210.00	950.00	10160.00
	14.540	9530.89	839.24	10492.90
	14.540	9950.00	530.00	10480.00
*	14.740	9514.60	1019.70	10534.30
*	14.740	9700.00	400.00	10100.00
	14.890	9433.21	564.34	10076.60
*	14.890	9600.00	496.73	10096.73
	15.060	9733.08	768.90	10501.98
	15.060	9972.00	418.00	10390.00

	SECNO	SSTA	TOPWID	ENDST
*	15.120	9717.29	821.24	10538.53
*	15.120	9975.00	376.00	10351.00
	15.220	9945.54	606.38	10551.92
*	15.220	9977.00	523.00	10500.00
	15.410	9971.54	403.31	10374.85
	15.410	9979.00	374.00	10353.00
*	15.550	9827.86	533.41	10361.27
	15.550	9890.00	292.00	10182.00
	15.750	9414.00	801.63	10215.64
*	15.750	9477.00	639.00	10116.00
*	15.890	9478.29	721.42	10222.44
*	15.890	9817.00	387.37	10210.00
	16.070	9632.04	531.86	10163.89
	16.070	9760.00	370.00	10130.00
	16.190	9303.61	766.41	10070.02
	16.190	9600.00	468.00	10068.00
*	16.270	9396.15	646.59	10042.74
*	16.270	9760.00	282.00	10042.00
	16.490	9839.97	667.55	10507.52
*	16.490	9906.00	524.00	10430.00
	16.680	9938.12	656.66	10594.78
*	16.680	9940.00	650.00	10590.00
*	16.860	9785.83	317.44	10103.27
*	16.860	9785.40	318.31	10103.70
	16.870	9801.94	320.53	10122.47
	16.870	9801.84	320.78	10122.62

*	16.960	9914.00	424.44	10338.44
*	16.960	9914.00	424.83	10338.83
	17.060	9533.00	980.00	10513.00
*	17.060	9650.00	840.00	10490.00
*	17.180	9746.00	828.73	10710.00
*	17.180	9788.00	739.23	10668.00
	17.300	9568.00	1022.00	10590.00
	17.300	9628.00	907.00	10535.00

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	SECNO	SSTA	TOPWID	ENDST
	17.390	9731.16	776.84	10508.00
	17.390	9758.00	713.00	10471.00
	17.480	9478.00	905.00	10383.00
	17.480	9488.92	851.08	10340.00
*	17.570	9477.22	824.78	10302.00
	17.570	9516.45	746.55	10263.00
	17.650	9409.78	895.22	10305.00
	17.650	9423.70	846.30	10270.00
	17.780	9624.77	985.23	10610.00
	17.780	9642.06	935.94	10578.00
	17.840	9749.29	956.71	10706.00
	17.840	9749.23	915.77	10665.00
	17.950	9816.73	1222.04	11038.77
	17.950	9818.68	776.32	10595.00
*	18.090	9852.99	1513.72	11366.71
	18.090	9895.00	715.00	10610.00
*	18.160	9722.46	949.15	10711.09
	18.160	9752.00	642.85	10425.00
*	18.230	9543.01	1309.37	10852.37
*	18.230	9630.00	700.00	10330.00
	18.290	9575.47	1039.14	10645.45
*	18.290	9630.00	700.00	10330.00
	18.490	9739.73	848.14	10587.87
*	18.490	9832.00	643.00	10475.00
*	18.570	9637.06	920.13	10557.19
*	18.570	9700.00	780.00	10480.00
*	18.740	9330.44	875.64	10206.07
*	18.740	9380.00	745.00	10125.00
	18.840	9474.25	684.70	10158.95
*	18.840	9576.00	564.00	10140.00
*	18.960	9450.36	1432.78	10883.15
*	18.960	9639.00	841.00	10480.00
*	19.070	9295.43	1357.34	10732.67
	19.070	9485.00	830.00	10315.00

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	SECNO	SSTA	TOPWID	ENDST
*	19.180	9242.08	834.35	10076.44
*	19.180	9330.00	746.00	10076.00
	19.260	9392.03	717.97	10110.00
*	19.260	9430.00	635.00	10065.00
	19.410	9597.37	1012.08	10628.82
	19.410	9660.00	941.00	10610.00
*	19.520	9900.45	680.58	10581.03
*	19.520	9901.00	680.00	10581.00
	19.620	9983.79	746.74	10730.53
	19.620	9984.00	746.43	10730.43
*	19.720	9802.87	760.62	10563.49
*	19.720	9825.00	725.00	10550.00
*	19.830	9727.16	714.61	10441.77
*	19.830	9770.00	650.00	10420.00

*	19.920	9220.00	1173.26	10393.26
	19.920	9710.00	683.31	10393.31
	20.050	9355.04	1085.65	10473.75
*	20.050	9420.00	1052.87	10473.12
*	20.160	9154.87	1116.07	10489.67
*	20.160	9202.00	1063.30	10489.50
*	20.260	9154.12	1253.31	10533.85
*	20.260	9190.00	1205.00	10395.00
	20.380	9167.09	1211.13	10428.94
	20.380	9209.00	1166.53	10415.00
*	20.480	9232.37	1298.90	10531.27
*	20.480	9424.00	906.00	10330.00
*	20.620	9254.26	1241.81	10496.07
*	20.620	9485.00	885.00	10370.00
*	20.640	9200.65	1349.99	10550.64
*	20.640	9500.00	850.00	10350.00
*	20.710	4124.87	1391.07	5515.94
*	20.710	4500.00	810.00	5310.00
*	20.790	4240.00	1260.00	5500.00
*	20.790	4500.00	660.00	5160.00

	SECNO	SSTA	TOPWID	ENDST
*	20.900	4161.02	1313.97	5475.00
*	20.900	4550.00	670.00	5220.00
	20.980	4128.74	1250.99	5393.42
	20.980	4390.00	670.00	5060.00
*	21.050	4096.29	1247.21	5343.50
*	21.050	4380.00	695.00	5075.00
	21.110	4159.86	1025.38	5185.24
	21.110	4350.00	775.00	5125.00
*	21.180	4050.00	1152.57	5202.57
*	21.180	4200.00	900.00	5100.00
*	21.250	4179.23	1420.77	5600.00
*	21.250	4310.00	745.00	5055.00
	21.310	4175.94	965.41	5141.35
	21.310	4450.00	650.00	5100.00
	21.350	4255.26	829.04	5084.30
	21.350	4400.00	705.00	5105.00
	21.410	4299.76	799.93	5099.69
	21.410	4500.00	596.32	5096.32
	21.490	4616.35	700.14	5316.50
	21.490	4617.00	700.00	5317.00
	21.580	4335.33	1294.67	5630.00
*	21.580	4415.00	840.00	5255.00
	21.630	4213.41	1159.04	5478.43
	21.630	4265.00	1055.00	5320.00
	21.690	3891.12	1412.19	5303.31
	21.690	3970.00	1330.00	5300.00
	21.770	3694.34	964.76	5194.72
	21.770	3694.00	958.18	5165.00
*	21.820	3690.75	1139.89	5210.74
*	21.820	3750.00	1074.67	5200.00
	21.910	3809.06	1154.39	5251.95
	21.910	3900.00	1140.00	5040.00
	21.990	3667.24	1403.61	5315.83
	21.990	3765.00	1234.22	5090.00

SECNO	SSTA	TOPWID	ENDST
22.080	3713.43	1609.96	5340.23

	22.080	4050.00	1125.00	5175.00
	22.150	3356.58	1241.16	5067.37
	22.150	3700.00	1088.06	5070.00
	22.220	3744.67	831.90	5221.84
	22.220	3918.00	783.94	5063.74
	22.290	3926.81	1282.22	5471.95
	22.290	4000.00	911.26	5100.00
	22.360	4068.37	1104.00	5688.77
	22.360	4100.00	844.30	5062.21
	22.430	4098.00	1204.82	5302.82
	22.430	4192.00	918.00	5110.00
	22.480	4247.04	1082.95	5330.00
	22.480	4372.00	723.00	5095.00
	22.560	4369.09	1064.96	5434.06
	22.560	4470.00	635.00	5105.00
*	22.670	4379.74	786.32	5166.05
*	22.670	4475.00	575.00	5050.00
*	22.730	4246.90	869.26	5116.16
*	22.730	4499.00	526.00	5025.00
*	22.790	4197.60	965.08	5162.69
	22.790	4490.00	660.00	5150.00
	22.860	4230.68	979.15	5209.83
	22.860	4450.00	742.00	5192.00
	22.950	9045.60	1017.56	10063.16
*	22.950	9450.00	600.00	10050.00
*	22.960	9087.79	926.98	10014.76
*	22.960	9500.00	514.00	10014.00
*	23.130	9427.59	801.73	10229.32
*	23.130	9595.00	561.00	10156.00
*	23.250	9676.44	743.33	10419.76
*	23.250	9874.00	334.00	10208.00
*	23.330	9757.41	599.89	10357.31
	23.330	9963.00	331.00	10294.00

	SECNO	SSTA	TOPWID	ENDST
	23.450	9739.33	609.04	10348.37
	23.450	9867.00	465.00	10332.00
*	23.550	9564.76	706.32	10271.08
*	23.550	9766.00	467.00	10233.00
	23.640	9429.11	681.35	10110.46
	23.640	9435.00	662.00	10097.00
*	23.870	9612.42	555.39	10167.81
*	23.870	9668.00	353.00	10021.00
	23.940	9527.41	415.48	10118.92
	23.940	9542.00	500.00	10042.00
	24.030	9756.17	652.99	10409.16
*	24.030	9900.00	223.00	10123.00
*	24.120	9736.38	436.92	10173.30
*	24.120	9860.00	207.00	10067.00
*	24.250	9952.75	267.97	10235.08
*	24.250	9953.00	237.05	10199.00
*	24.380	9772.72	370.39	10143.11
*	24.380	9811.00	266.00	10077.00
*	24.480	9620.98	473.74	10094.71
*	24.480	9834.00	214.00	10048.00
*	24.610	9451.16	665.08	10116.24
*	24.610	9944.00	79.00	10023.00
*	24.740	9551.84	678.84	10244.47
*	24.740	9961.00	125.00	10086.00
*	24.870	9652.80	435.82	10180.87
*	24.870	9929.00	151.00	10080.00

	24.950	9919.06	360.74	10279.80
	24.950	9920.00	180.00	10100.00
*	25.120	9951.89	153.27	10105.16
*	25.120	9952.00	153.00	10105.00
*	25.280	9604.19	433.20	10037.39
*	25.280	9849.00	188.00	10037.00
	25.380	9308.85	1008.00	10316.85
*	25.380	9650.00	646.00	10296.00

	SECNO	SSTA	TOPWID	ENDST
*	25.450	9967.09	582.34	10664.28
*	25.450	9968.00	630.00	10598.00
*	25.560	9619.37	866.12	10528.90
*	25.560	9686.72	802.73	10511.00
	25.630	9916.31	458.07	10586.65
*	25.630	9931.00	429.73	10477.00
*	25.700	9881.00	218.00	10099.00
*	25.700	9881.00	218.00	10099.00
*	25.720	9990.00	237.00	10227.00
*	25.720	9990.00	237.00	10227.00
*	25.830	9914.00	393.33	10308.95
*	25.830	9914.00	126.00	10040.00
*	25.950	9923.00	652.16	10616.00
*	25.950	9923.00	141.00	10064.00
*	26.170	9966.59	499.86	10472.00
*	26.170	9969.00	83.00	10052.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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WARNING SECNO=     13.160  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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WARNING SECNO=     13.280  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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WARNING SECNO=     13.400  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     13.550  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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CAUTION SECNO=     14.300  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     14.300  PROFILE=  2  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=     14.740  PROFILE=  1  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=     14.740  PROFILE=  2  CRITICAL DEPTH ASSUMED
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WARNING SECNO=     14.890  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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CAUTION SECNO=     15.890  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     15.890  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL
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CAUTION SECNO=     23.870  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

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WARNING SECNO=     24.380  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

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CAUTION SECNO=     24.480  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
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CAUTION SECNO=     24.480  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

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CAUTION SECNO=     25.450  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
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WARNING SECNO=     25.560  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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CAUTION SECNO=     25.720  PROFILE=  1  HYDRAULIC JUMP D.S.
WARNING SECNO=     25.720  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=     25.720  PROFILE=  2  HYDRAULIC JUMP D.S.

CAUTION SECNO=     25.830  PROFILE=  1  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=     25.830  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=     26.170  PROFILE=  2  MINIMUM SPECIFIC ENERGY

1
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Floodway width summary: MONT. WAT. AND HEC
Profile No.  2
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Section Number	Elevation Increase	Top Width	Left Encroach Station	Left Sta Distance From Center	Center Station	Right Sta Distance From Center	Right Encroach Station
13.000	.00	245.00	9820.00	122.50	9942.50	122.50	10065.00
13.020	.00	245.00	9820.00	122.50	9942.50	122.50	10065.00
13.040	.00	813.00	9537.00	388.50	9925.50	424.50	10350.00
13.080	.00	1129.00	9550.00	348.50	9898.50	780.50	10679.00
13.160	.00	1395.00	9421.00	699.50	10120.50	695.50	10816.00
13.280	.00	1265.00	9537.00	353.50	9890.50	911.50	10802.00
13.400	.94	932.00	9670.00	324.50	9994.50	607.50	10602.00
13.550	.99	1334.00	9160.00	931.00	10091.00	403.00	10494.00
13.660	.44	1427.00	9055.00	926.50	9981.50	500.50	10482.00
13.860	.73	1524.00	8708.00	978.00	9686.00	546.00	10232.00
14.070	.11	1724.00	8805.00	1164.00	9969.00	560.00	10529.00
14.300	.87	950.00	9210.00	765.00	9975.00	185.00	10160.00
14.540	.60	530.00	9950.00	265.00	10215.00	265.00	10480.00
14.740	-.25	400.00	9700.00	326.00	10026.00	74.00	10100.00
14.890	.99	500.00	9600.00	398.50	9998.50	101.50	10100.00
15.060	-.11	418.00	9972.00	209.00	10181.00	209.00	10390.00
15.120	-.02	376.00	9975.00	188.00	10163.00	188.00	10351.00
15.220	.97	523.00	9977.00	185.50	10162.50	337.50	10500.00
15.410	-.56	374.00	9979.00	187.00	10166.00	187.00	10353.00
15.550	.43	292.00	9890.00	151.00	10041.00	141.00	10182.00
15.750	.97	639.00	9477.00	562.50	10039.50	76.50	10116.00
15.890	.94	393.00	9817.00	272.50	10089.50	120.50	10210.00
16.070	.91	370.00	9760.00	279.00	10039.00	91.00	10130.00
16.190	.25	468.00	9600.00	405.50	10005.50	62.50	10068.00
16.270	.51	282.00	9760.00	142.50	9902.50	139.50	10042.00
16.490	.96	524.00	9906.00	112.00	10018.00	412.00	10430.00
16.680	-.15	650.00	9940.00	319.00	10259.00	331.00	10590.00
16.860	.18	357.00	9774.00	170.52	9944.52	186.48	10131.00
16.870	.05	443.00	9681.00	284.58	9965.58	158.42	10124.00
16.960	.00	475.00	9914.00	223.00	10137.00	252.00	10389.00
17.060	.25	840.00	9650.00	368.50	10018.50	471.50	10490.00
17.180	-.06	880.00	9788.00	328.00	10116.00	552.00	10668.00
17.300	.10	907.00	9628.00	435.00	10063.00	472.00	10535.00
17.390	-.01	713.00	9758.00	278.00	10036.00	435.00	10471.00
17.480	.10	851.08	9488.92	494.08	9983.00	357.00	10340.00
17.570	.04	746.55	9516.45	465.05	9981.50	281.50	10263.00
17.650	.13	846.30	9423.70	548.80	9972.50	297.50	10270.00
17.780	-.01	935.94	9642.06	336.44	9978.50	599.50	10578.00
17.840	.01	919.61	9745.39	326.61	10072.00	593.00	10665.00
17.950	.04	776.32	9818.68	138.32	9957.00	638.00	10595.00
18.090	.20	715.00	9895.00	228.00	10123.00	487.00	10610.00
18.160	.41	673.00	9752.00	203.50	9955.50	469.50	10425.00
18.230	.02	700.00	9630.00	275.00	9905.00	425.00	10330.00
18.290	1.04	700.00	9630.00	351.50	9981.50	348.50	10330.00
18.490	.09	643.00	9832.00	102.50	9934.50	540.50	10475.00
18.570	.56	780.00	9700.00	294.00	9994.00	486.00	10480.00
18.740	.06	745.00	9380.00	678.50	10058.50	66.50	10125.00

18.840	.88	564.00	9576.00	399.50	9975.50	164.50	10140.00
18.960	.52	841.00	9639.00	333.50	9972.50	507.50	10480.00
19.070	.29	830.00	9485.00	513.00	9998.00	317.00	10315.00
19.180	.15	746.00	9330.00	647.00	9977.00	99.00	10076.00
19.260	.04	635.00	9430.00	591.00	10021.00	44.00	10065.00
19.410	.10	950.00	9660.00	340.00	10000.00	610.00	10610.00
19.520	.00	680.00	9901.00	112.50	10013.50	567.50	10581.00
19.620	.00	746.51	9984.00	59.00	10043.00	687.51	10730.51
19.720	.02	725.00	9825.00	170.50	9995.50	554.50	10550.00
19.830	-.05	650.00	9770.00	247.00	10017.00	403.00	10420.00
19.920	.18	683.31	9710.00	325.50	10035.50	357.81	10393.31
20.050	.15	1053.12	9420.00	573.00	9993.00	480.12	10473.12
20.160	-.03	1287.70	9202.00	810.00	10012.00	477.70	10489.70
20.260	.14	1205.00	9190.00	797.00	9987.00	408.00	10395.00
20.380	.07	1206.00	9209.00	788.00	9997.00	418.00	10415.00
20.480	.60	906.00	9424.00	594.50	10018.50	311.50	10330.00
20.620	.72	885.00	9485.00	536.50	10021.50	348.50	10370.00
20.640	1.00	850.00	9500.00	420.00	9920.00	430.00	10350.00
20.710	.62	810.00	4500.00	540.00	5040.00	270.00	5310.00
20.790	.92	660.00	4500.00	533.50	5033.50	126.50	5160.00
20.900	.35	670.00	4550.00	400.00	4950.00	270.00	5220.00
20.980	.73	670.00	4390.00	487.50	4877.50	182.50	5060.00
21.050	.16	695.00	4380.00	588.50	4968.50	106.50	5075.00
21.110	.76	775.00	4350.00	637.50	4987.50	137.50	5125.00
21.180	.02	900.00	4200.00	825.00	5025.00	75.00	5100.00
21.250	.14	745.00	4310.00	672.50	4982.50	72.50	5055.00
21.310	.81	650.00	4450.00	487.50	4937.50	162.50	5100.00
21.350	.76	705.00	4400.00	560.00	4960.00	145.00	5105.00
21.410	-.06	600.00	4500.00	460.00	4960.00	140.00	5100.00
21.490	.22	700.00	4617.00	373.00	4990.00	327.00	5317.00
21.580	.05	840.00	4415.00	620.00	5035.00	220.00	5255.00
21.630	.93	1055.00	4265.00	875.00	5140.00	180.00	5320.00
21.690	.02	1330.00	3970.00	962.50	4932.50	367.50	5300.00
21.770	.10	1471.00	3694.00	1226.00	4920.00	245.00	5165.00
21.820	.04	1450.00	3750.00	1260.00	5010.00	190.00	5200.00
21.910	.56	1140.00	3900.00	1059.00	4959.00	81.00	5040.00
21.990	.67	1325.00	3765.00	1260.00	5025.00	65.00	5090.00
22.080	.36	1125.00	4050.00	942.50	4992.50	182.50	5175.00
22.150	.72	1370.00	3700.00	1305.00	5005.00	65.00	5070.00
22.220	.50	1149.00	3918.00	1093.00	5011.00	56.00	5067.00
22.290	.37	1100.00	4000.00	1006.00	5006.00	94.00	5100.00
22.360	.54	980.00	4100.00	905.00	5005.00	75.00	5080.00
22.430	.44	918.00	4192.00	803.00	4995.00	115.00	5110.00
22.480	.87	723.00	4372.00	641.50	5013.50	81.50	5095.00
22.560	.88	635.00	4470.00	562.50	5032.50	72.50	5105.00
22.670	.57	575.00	4475.00	525.00	5000.00	50.00	5050.00
22.730	.75	526.00	4499.00	453.50	4952.50	72.50	5025.00
22.790	.69	660.00	4490.00	505.00	4995.00	155.00	5150.00
22.860	.75	742.00	4450.00	602.00	5052.00	140.00	5192.00
22.950	.03	600.00	9450.00	300.00	9750.00	300.00	10050.00
22.960	.14	514.00	9500.00	483.50	9983.50	30.50	10014.00
23.130	.92	561.00	9595.00	358.00	9953.00	203.00	10156.00
23.250	.64	334.00	9874.00	75.50	9949.50	258.50	10208.00
23.330	.76	331.00	9963.00	27.00	9990.00	304.00	10294.00

23.450	.50	465.00	9867.00	151.50	10018.50	313.50	10332.00
23.550	.60	467.00	9766.00	243.00	10009.00	224.00	10233.00
23.640	.86	662.00	9435.00	545.00	9980.00	117.00	10097.00
23.870	.17	353.00	9668.00	309.50	9977.50	43.50	10021.00
23.940	.93	500.00	9542.00	408.00	9950.00	92.00	10042.00
24.030	.70	223.00	9900.00	77.50	9977.50	145.50	10123.00
24.120	.86	207.00	9860.00	129.00	9989.00	78.00	10067.00
24.250	.31	246.00	9953.00	31.50	9984.50	214.50	10199.00
24.380	.33	266.00	9811.00	133.00	9944.00	133.00	10077.00
24.480	.72	214.00	9834.00	165.50	9999.50	48.50	10048.00
24.610	.46	79.00	9944.00	39.50	9983.50	39.50	10023.00
24.740	.83	125.00	9961.00	62.50	10023.50	62.50	10086.00
24.870	.05	151.00	9929.00	87.50	10016.50	63.50	10080.00
24.950	.83	180.00	9920.00	88.50	10008.50	91.50	10100.00
25.120	.02	153.00	9952.00	49.00	10001.00	104.00	10105.00
25.280	.08	188.00	9849.00	145.50	9994.50	42.50	10037.00
25.380	.97	646.00	9650.00	352.50	10002.50	293.50	10296.00
25.450	.89	630.00	9968.00	51.00	10019.00	579.00	10598.00
25.560	.07	825.00	9686.00	301.50	9987.50	523.50	10511.00
25.630	.38	546.00	9931.00	80.00	10011.00	466.00	10477.00
25.700	.23	218.00	9881.00	109.00	9990.00	109.00	10099.00
25.720	.00	237.00	9990.00	118.50	10108.50	118.50	10227.00
25.830	.59	126.00	9914.00	63.00	9977.00	63.00	10040.00
25.950	1.02	141.00	9923.00	98.50	10021.50	42.50	10064.00
26.170	.21	83.00	9969.00	34.00	10003.00	49.00	10052.00

HEC-RAS Base Existing Condition 100-year Peak Discharge Alternative Model

HEC-RAS September 1998 Version 2.2
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X       X   X     X  X    X
X     X  X        X            X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X            X  X     X    X        X
X     X  X        X    X       X   X    X    X        X
X     X  XXXXXX    XXXX        X    X   X    X   XXXXX
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PROJECT DATA
Project Title: Watercourse Master Plan - Skunk Creek
Project File : WMP_SC.prj
Run Date and Time: 4/10/01 7:59:12 AM

Project in English units

Project Description:
Skunk Creek Watercourse Master Plan. Prepared for Skunk Creek from the CAP
Canal to north of New River Road
by Stantec Consulting Inc. for ASL Consulting
and the Flood Control District of Maricopa County
FCD: 99-23

Project Start Date:October 1999

This
HEC-RAS model is based on HEC-2 models prepared by Montgomery Watson , Erie and Associates, and Hoskin Engineering Consultants. Montgomery Watson and Erie and Associates models reffect the FIS effective model for FEMA. Hoskins Engineering Counsultants model reflect a CLOMR submiital to FEMA (Case No. 99-09-592R, date of submittal responce 6/2/99).

PLAN DATA

Plan Title: WMP Model for Ex. Cond. Q for 100yr
Plan File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.p02

Geometry Title: Updated geometry, n values and CHBsurvey
Geometry File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.g04

Flow Title : Existing Cond Study Q for 100-yr
Flow File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.f02

Plan Description:
Skunk Creek Watercourse Master Plan
Skunk Creek Model
Geometry is the same as
the original HEC-2 model except for the cross sections at New River Bridge and
Carefree Highway Bridge.
The discharges are for the existing conditions.
The
EX 100-yr Enc is used for the floodway analysis

Plan Summary Information:

Number of: Cross Sections = 122 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 2

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

Computation Options
Critical depth computed at all cross sections
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

Encroachment Data
Equal Conveyance = True
Left Offset = 0
Right Offset = 0

River = RIVER-1 Reach = Reach-1

RS	Profile	Method	Value1	Value2
26.17	Ex 100-yr Enc	1	9967	10063
25.95	Ex 100-yr Enc	1	9923	10064
25.83	Ex 100-yr Enc	1	9914	10040
25.78	Ex 100-yr Enc	1	9938	10110
25.74	Ex 100-yr Enc	1	9900	10115
25.73	Ex 100-yr Enc	1	9900	10115
25.69	Ex 100-yr Enc	1	9970	10160
25.63	Ex 100-yr Enc	1	9931	10477
25.56	Ex 100-yr Enc	1	9686	10511
25.45	Ex 100-yr Enc	1	9966	10598
25.38	Ex 100-yr Enc	1	9650	10296
25.28	Ex 100-yr Enc	1	9849	10052
25.12	Ex 100-yr Enc	1	9949	10105
24.95	Ex 100-yr Enc	1	9920	10100
24.87	Ex 100-yr Enc	1	9929	10080
24.74	Ex 100-yr Enc	1	9961	10086
24.61	Ex 100-yr Enc	1	9944	10023
24.48	Ex 100-yr Enc	1	9834	10048
24.38	Ex 100-yr Enc	1	9811	10077
24.25	Ex 100-yr Enc	1	9951	10199
24.12	Ex 100-yr Enc	1	9860	10067
24.03	Ex 100-yr Enc	1	9900	10123
23.94	Ex 100-yr Enc	1	9542	10042
23.87	Ex 100-yr Enc	1	9668	10021
23.64	Ex 100-yr Enc	1	9435	10097
23.55	Ex 100-yr Enc	1	9766	10233
23.45	Ex 100-yr Enc	1	9867	10332
23.33	Ex 100-yr Enc	1	9963	10294
23.25	Ex 100-yr Enc	1	9874	10208
23.13	Ex 100-yr Enc	1	9595	10156
22.96	Ex 100-yr Enc	1	9500	10016
22.86	Ex 100-yr Enc	1	9450	10192
22.79	Ex 100-yr Enc	1	9490	10150
22.73	Ex 100-yr Enc	1	9499	10030
22.67	Ex 100-yr Enc	1	9475	10050
22.56	Ex 100-yr Enc	1	9470	10105
22.48	Ex 100-yr Enc	1	9372	10095
22.43	Ex 100-yr Enc	1	9192	10110
22.36	Ex 100-yr Enc	1	9100	10080
22.29	Ex 100-yr Enc	1	9000	10100
22.22	Ex 100-yr Enc	1	8918	10067
22.15	Ex 100-yr Enc	1	8700	10070
22.08	Ex 100-yr Enc	1	9050	10175
21.99	Ex 100-yr Enc	1	8765	10090
21.91	Ex 100-yr Enc	1	8900	10040
21.82	Ex 100-yr Enc	1	8750	10200
21.77	Ex 100-yr Enc	1	8694	10165
21.69	Ex 100-yr Enc	1	8970	10300
21.63	Ex 100-yr Enc	1	9265	10320
21.58	Ex 100-yr Enc	1	9415	10255
21.49	Ex 100-yr Enc	1	9617	10317
21.41	Ex 100-yr Enc	1	9500	10100
21.35	Ex 100-yr Enc	1	9400	10105
21.31	Ex 100-yr Enc	1	9450	10100
21.25	Ex 100-yr Enc	1	9310	10055
21.18	Ex 100-yr Enc	1	9200	10100
21.11	Ex 100-yr Enc	1	9350	10125

21.05	Ex 100-yr Enc	1	9380	10075
20.98	Ex 100-yr Enc	1	9390	10060
20.9	Ex 100-yr Enc	1	9550	10220
20.79	Ex 100-yr Enc	1	9500	10160
20.71	Ex 100-yr Enc	1	9500	10310
20.64	Ex 100-yr Enc	1	9500	10350
20.62	Ex 100-yr Enc	1	9485	10370
20.48	Ex 100-yr Enc	1	9424	10330
20.38	Ex 100-yr Enc	1	9209	10415
20.26	Ex 100-yr Enc	1	9190	10395
20.16	Ex 100-yr Enc	1	9202	10489.7
20.05	Ex 100-yr Enc	1	9420	10473.12
19.92	Ex 100-yr Enc	1	9710	10393.31
19.83	Ex 100-yr Enc	1	9770	10420
19.72	Ex 100-yr Enc	1	9825	10550
19.62	Ex 100-yr Enc	1	9966	10730.51
19.52	Ex 100-yr Enc	1	9901	10581
19.41	Ex 100-yr Enc	1	9660	10610
19.26	Ex 100-yr Enc	1	9430	10065
19.18	Ex 100-yr Enc	1	9330	10080
19.07	Ex 100-yr Enc	1	9485	10315
18.96	Ex 100-yr Enc	1	9639	10480
18.84	Ex 100-yr Enc	1	9576	10140
18.74	Ex 100-yr Enc	1	9380	10125
18.57	Ex 100-yr Enc	1	9700	10480
18.49	Ex 100-yr Enc	1	9832	10475
18.29	Ex 100-yr Enc	1	9630	10330
18.23	Ex 100-yr Enc	1	9630	10330
18.16	Ex 100-yr Enc	1	9752	10425
18.09	Ex 100-yr Enc	1	9895	10610
17.95	Ex 100-yr Enc	1	9818.68	10595
17.84	Ex 100-yr Enc	1	9760	10665
17.78	Ex 100-yr Enc	1	9642.06	10578
17.65	Ex 100-yr Enc	1	9423.7	10270
17.57	Ex 100-yr Enc	1	9516.45	10263
17.48	Ex 100-yr Enc	1	9488.92	10340
17.39	Ex 100-yr Enc	1	9758	10471
17.3	Ex 100-yr Enc	1	9628	10550
17.18	Ex 100-yr Enc	1	9788	10680
17.06	Ex 100-yr Enc	1	9650	10520
16.96	Ex 100-yr Enc	1	9914	10370
16.87	Ex 100-yr Enc	1	9855.48	10152.83
16.86	Ex 100-yr Enc	1	9850.97	10149.03
16.68	Ex 100-yr Enc	1	9940	10590
16.49	Ex 100-yr Enc	1	9906	10430
16.27	Ex 100-yr Enc	1	9760	10045
16.19	Ex 100-yr Enc	1	9600	10077
16.07	Ex 100-yr Enc	1	9760	10130
15.89	Ex 100-yr Enc	1	9817	10210
15.75	Ex 100-yr Enc	1	9477	10116
15.55	Ex 100-yr Enc	1	9890	10182
15.41	Ex 100-yr Enc	1	9968	10353
15.22	Ex 100-yr Enc	1	9977	10500
15.12	Ex 100-yr Enc	1	9975	10351
15.06	Ex 100-yr Enc	1	9972	10390
14.89	Ex 100-yr Enc	1	9600	10100
14.74	Ex 100-yr Enc	1	9700	10100
14.54	Ex 100-yr Enc	1	9950	10480
14.3	Ex 100-yr Enc	1	9210	10160
14.07	Ex 100-yr Enc	1	8805	10529
13.86	Ex 100-yr Enc	1	8708	10232
13.66	Ex 100-yr Enc	1	9055	10482
13.55	Ex 100-yr Enc	1	9160	10494
13.4	Ex 100-yr Enc	1	9670	10602
13.28	Ex 100-yr Enc	1	9537	10802
13.16	Ex 100-yr Enc	1		
13.08	Ex 100-yr Enc	1		
13.04	Ex 100-yr Enc	1		
13.02	Ex 100-yr Enc	1		
13	Ex 100-yr Enc	1		

FLOW DATA

Flow Title: Existing Cond Study Q for 100-yr
Flow File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.f02

Flow Data (cfs)

River	Reach	RS	Ex 100-yr	Ex 100-yr Enc
RIVER-1	Reach-1	26.17	7800	7800
RIVER-1	Reach-1	24.74	9700	9700
RIVER-1	Reach-1	24.12	11800	11800
RIVER-1	Reach-1	23.55	24400	24400
RIVER-1	Reach-1	22.79	27300	27300
RIVER-1	Reach-1	18.57	27700	27700
RIVER-1	Reach-1	17.95	27300	27300
RIVER-1	Reach-1	16.68	26700	26700

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
RIVER-1	Reach-1	Ex 100-yr		Known WS = 1533.7
RIVER-1	Reach-1	Ex 100-yr Enc		Known WS = 1534.7

GEOMETRY DATA

Geometry Title: Updated geometry, n values and CHBsurvey
Geometry File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.g04

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 26.17

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9940	2138.3	9957	2136.6	9967	2132.3	9980	2122.5	9988	2121.9
10000	2121.7	10020	2128.2	10039	2129.9	10063	2131.5	10085	2131.2
10098	2131.5	10122	2130.8	10141	2129.5	10155	2130.1	10165	2130.2
10194	2131.5	10227	2131.8	10274	2131.3	10286	2130.2	10302	2128.2
10313	2129.3	10335	2130.8	10373	2131.2	10391	2129.7	10403	2128.3
10418	2129.7	10448	2132.6	10472	2131.9	10501	2132.9	10535	2133.3
10566	2133.4	10609	2132.5	10640	2131.9	10651	2131.7	10668	2132.7
10720	2134.4	10759	2135.1	10820	2136.1	10860	2136.5	10933	2136
10948	2136.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9940	.045	9967	.045	10063	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967	10063	1225	1132	1040	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10472	10948	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.95

INPUT
Description:
Station Elevation Data num= 81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9254	2123.2	9297	2119.8	9322	2117.2	9353	2116.1	9368	2116.6
9416	2115.7	9426	2115.9	9474	2115.4	9487	2112.1	9494	2114.1
9507	2113.7	9517	2111.4	9520	2111.4	9529	2115	9568	2116.1
9609	2115.2	9623	2114	9634	2115.1	9657	2115.8	9681	2116.6
9694	2115.6	9727	2116.5	9777	2117.5	9802	2117.4	9841	2117.8
9912	2117.6	9923	2119	9936	2118.9	9941	2117.6	9969	2117.5
9986	2118.1	10000	2110.8	10020	2110.4	10032	2113.5	10046	2114.2
10057	2117.7	10072	2119.5	10096	2119.9	10103	2119.4	10132	2119.1
10144	2117.6	10154	2117.5	10169	2119.2	10217	2119.1	10258	2118.1
10282	2118.8	10315	2118.9	10363	2118.6	10380	2116.5	10387	2116.4
10398	2117.4	10425	2117.6	10461	2117.2	10490	2116.9	10512	2116
10538	2116.2	10580	2115.9	10593	2116.3	10616	2116.8	10644	2116.5
10658	2116.2	10680	2116.1	10729	2116.1	10781	2115.9	10829	2115.7
10882	2115.5	10993	2115.9	11030	2115.8	11108	2115	11161	2114.4
11189	2113.5	11205	2110.3	11222	2110.5	11235	2112.9	11242	2109.1
11249	2109.1	11264	2112.8	11290	2114.5	11327	2117	11367	2118.6
11510	2123.3								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9254	.045	9681	.035	9986	.045	10057	.055	10363	.045

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9986   10057              600   620.6     625            .1        .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    9254    9923           10616   11510

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.83

INPUT
Description:
Station Elevation Data     num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9211  2114.5    9263  2109.9    9290  2108.9    9328  2107.8    9372  2106.5
    9395  2103.6    9420  2106.3    9450  2108.1    9502  2109.1    9536  2108.8
    9569  2109.2    9592  2108.7    9604  2107.9    9618  2108.9    9668  2109.6
    9705  2110.4    9758  2110.5    9812    2111    9853  2110.6    9906  2110.8
    9914  2111.8    9938  2110.2    9966  2108.1   10000    2106   10012  2105.1
   10025  2105.3   10040  2112.7   10048    2111   10092  2111.1   10157  2110.8
   10190  2109.6   10217  2110.4   10245  2109.9   10299  2110.7   10312    2113
   10327  2113.3   10343  2113.7   10361  2113.6   10375  2113.1   10387  2111.3
   10441  2111.1   10482  2110.5   10503  2110.8   10535  2111.1   10556  2110.7
   10612    2110   10639  2108.4   10665  2109.7   10700  2110.1   10738  2109.5
   10759  2108.4   10779  2108.1   10805  2108.8   10831  2109.2   10856  2108.6
   10900  2109.7   10946  2110.1   10987  2109.6   11018  2109.2   11025  2109.6
   11062    2109   11099  2108.7   11124  2108.2   11135  2106.6   11149  2108.1
   11202  2106.3   11211  2104.6   11220  2104.6   11228    2107   11262    2108
   11305  2109.4   11347  2110.1   11359  2110.5   11456    2114

Manning's n Values         num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9211    .055    9502    .045    9914    .045   10040    .055   10299    .035
   10387    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9914   10040              220     250     350            .1        .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    9211    9914           10327   11456

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.78

INPUT
Description:
Station Elevation Data     num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9155    2110    9185    2108    9215    2106    9245    2104    9275    2102
    9290    2102    9325    2104    9380    2105    9435    2104    9493    2105
    9558  2104.5    9580    2106    9660  2107.5    9765    2107    9795    2108
    9938    2108    9960    2106    9965    2104    9975    2102   10025    2100
   10045    2100   10070    2102   10075    2104   10085    2106   10100    2108
   10110    2110   10139 2111.77   10158 2112.14   10177 2111.84   10200    2110
   10210    2108   10370    2106   10625    2106   10720    2104   10775    2104
   10800    2102   10821    2102   10839    2103   10858    2102   10868    2102
   10915    2104   10955    2102   10970    2100   10980    2100   11015    2102
   11040    2104   11075    2106   11105    2108   11175    2110

Manning's n Values         num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9155    .055    9380    .045    9938    .045   10110    .035   10210    .045
   10625    .055   10915    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9938   10110              195     195     195            .3        .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    9155    9938           10158   11175

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.74

INPUT
Description:
Station Elevation Data     num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9107.45    2110 9146.66    2108 9182.75    2106    9220    2104    9270    2102
    9295    2100    9350    2100    9385    2098    9400    2096    9425    2098
    9440    2100    9470    2102    9545    2104    9685    2103    9850    2104
    9900    2104    9915    2102    9925    2100   10100    2100   10105    2102
```

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   10115     2104    10235     2104    10255     2103    10315     2104    10332     2102
   10362   2103.5    10422     2102    10442     2102    10547   2102.8    10595     2102
   10665     2100    10735     2098    10750     2098    10760     2100    10835     2102
   10845     2102    10915     2100    10935     2098    10945     2098    10950     2100
   10960     210210965.92 2102.2611011.96     210411057.85     2106    11135     2108
 11219.6     2110

Manning's n Values         num=       6
     Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val
 9107.45     .055     9440     .045     9545     .035     9900     .045    10115     .055
   10595     .045

Bank Sta: Left    Right     Lengths: Left Channel    Right      Coeff Contr.    Expan.
          9900    10115                 84      84      84               .3        .5
Ineffective Flow      num=        2
   Sta L    Sta R     Elev    Sta L    Sta R     Elev
 9107.45 9903.58 2109.6710111.11 11219.6  2109.6

BRIDGE                    RIVER: RIVER-1
REACH: Reach-1               RS: 25.735

INPUT
Description: New River Bridge
Distance from Upstream XS =        1
Deck/Roadway Width        =       82
Weir Coefficient          =      2.6
Bridge Deck/Roadway Skew  =        0
Upstream  Deck/Roadway Coordinates
    num=       10
     Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
  9877.9 2109.73     2100 9888.38 2109.82     2100 9888.38 2111.64     2100
  9927.1 2111.83     2100  9927.1 2111.83 2105.84 10072.9 2113.27 2107.28
 10072.9 2113.27     210010111.62 2113.46     210010111.62 2111.64     2100
 10122.1 2111.73     2100

Upstream Bridge Cross Section Data
Station Elevation Data     num=       46
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
 9107.45     2110 9146.66     2108 9182.75     2106     9220     2104     9270     2102
    9295     2100     9350     2100     9385     2098     9400     2096     9425     2098
    9440     2100     9470     2102     9545     2104     9685     2103     9850     2104
    9900     2104     9915     2102     9925     2100    10100     2100    10105     2102
   10115     2104    10235     2104    10255     2103    10315     2104    10332     2102
   10362   2103.5    10422     2102    10442     2102    10547   2102.8    10595     2102
   10665     2100    10735     2098    10750     2098    10760     2100    10835     2102
   10845     2102    10915     2100    10935     2098    10945     2098    10950     2100
   10960     210210965.92 2102.2611011.96     210411057.85     2106    11135     2108
 11219.6     2110

Manning's n Values         num=       6
     Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val
 9107.45     .055     9440     .045     9545     .035     9900     .045    10115     .055
   10595     .045

Bank Sta: Left    Right     Coeff Contr.    Expan.
          9900    10115              .3        .5
Ineffective Flow      num=        2
   Sta L    Sta R     Elev    Sta L    Sta R     Elev
 9107.45 9903.58 2109.6710111.11 11219.6  2109.6

Downstream  Deck/Roadway Coordinates
    num=       10
     Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
  9877.9 2109.73     2100 9888.38 2109.82     2100 9888.38 2111.64     2100
  9927.1 2111.83     2100  9927.1 2111.83 2105.84 10072.9 2113.27 2107.28
 10072.9 2113.27     210010111.62 2113.46     210010111.62 2111.64     2100
 10122.1 2111.73     2100

Downstream Bridge Cross Section Data
Station Elevation Data     num=       46
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
 9107.45     2110 9146.66     2108 9182.75     2106     9220     2104     9270     2102
    9295     2100     9350     2100     9385     2098     9400     2096     9425     2098
    9440     2100     9470     2102     9545     2104     9685     2103     9850     2104
    9900     2104     9915     2102     9925     2100    10100     2100    10105     2102
   10115     2104    10235     2104    10255     2103    10315     2104    10332     2102
   10362   2103.5    10422     2102    10442     2102    10547   2102.8    10595     2102
   10665     2100    10735     2098    10750     2098    10760     2100    10835     2102
   10845     2102    10915     2100    10935     2098    10945     2098    10950     2100
   10960     210210965.92 2102.2611011.96     210411057.85     2106    11135     2108
 11219.6     2110
```

```
Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9107.45    .055    9440    .045    9545    .035    9900    .045   10115    .055
   10595    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
          9900   10115              .3       .5
Ineffective Flow     num=        2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9107.45 9903.58 2107.94 10117.5 11219.6    2108

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 Piers =  2

Pier Data
Pier Station     Upstream=  9975.7    Downstream=  9975.7
Upstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109
Downstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109

Pier Data
Pier Station     Upstream= 10024.3    Downstream= 10024.3
Upstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109
Downstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum                Cd   =     1.2
       Yarnell                 KVal =      .9
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.73

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta   Elev
 9107.45    2110 9146.66    2108 9182.75    2106    9220    2104    9270    2102
    9295    2100    9350    2100    9385    2098    9400    2096    9425    2098
    9440    2100    9470    2102    9545    2104    9685    2103    9850    2104
    9900    2104    9915    2102    9925    2100   10100    2100   10105    2102
   10115    2104   10235    2104   10255    2103   10315    2104   10332    2102
   10362  2103.5   10422    2102   10442    2102   10547  2102.8   10595    2102
   10665    2100   10735    2098   10750    2098   10760    2100   10835    2102
   10845    2102   10915    2100   10935    2098   10945    2098   10950    2100
   10960    210210965.92 2102.2611011.96    210411057.85    2106   11135    2108
 11219.6    2110

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
```

9107.45	.055	9440	.045	9545	.035	9900	.045	10115	.055
10595	.045								

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9900 10115 200 200 200 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9107.45	9903.58	2107.94	10117.5	11219.6	2108

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.69

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9130	2104	9180	2102	9225	2100	9280	2098	9290	2096
9300	2094	9320	2094	9330	2096	9340	2098	9460	2100
9630	2100	9660	2102	9720	2104	9730	2106	9795	2108
9801	2109.08	9820	2109.48	9839	2109.21	9865	2108	9875	2106
9880	2104	9885	2102	9890	2100	9970	2100	9990	2098
10010	2098	10020	2100	10025	2101	10105	2100	10135	2102
10160	2102	10340	2100	10430	2098	10515	2096	10550	2096
10575	2098	10650	2099	10670	2098	10685	2096	10710	2096
10765	2098	10810	2100	10835	2102	10880	2104	10890	2104

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9130	.055	9460	.045	9630	.035	9885	.045	10025	.055
10430	.045	10765	.035						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9970 10025 250 250 250 .3 .5
Ineffective Flow num= 1

Sta L	Sta R	Elev
9130	9820	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.63

INPUT
Description:
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9056	2104.7	9103	2102.4	9143	2100.5	9174	2098.6	9198	2095.5
9214	2092.8	9227	2089.7	9244	2090.3	9261	2093.5	9275	2094.7
9289	2095.8	9335	2097.9	9384	2099.1	9438	2099.6	9493	2099.9
9543	2100.2	9596	2100.5	9624	2100.9	9647	2106.9	9662	2107.2
9693	2106.8	9707	2106.2	9728	2102.4	9762	2101.7	9788	2101.2
9832	2101.2	9886	2101.1	9904	2100.3	9919	2098.8	9934	2098.6
9939	2101	9948	2096	9954	2095.4	9965	2095.2	9979	2096
10000	2095.7	10007	2099.2	10040	2099.2	10042	2098.1	10065	2098.2
10088	2099.2	10155	2099.8	10209	2099.6	10251	2099.2	10299	2098
10317	2096.3	10334	2097.8	10367	2097.6	10381	2097	10417	2096.4
10431	2093	10444	2093	10458	2094.6	10468	2094.7	10477	2095.1
10487	2096.5	10508	2096.8	10530	2093.2	10540	2093.3	10570	2096.9
10603	2101.2	10627	2104.4						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9056	.055	9335	.045	9624	.035	9939	.045	10007	.055
10417	.045	10570	.035						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9939 10007 375 365.7 350 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev
9056	9707	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.56

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8984	2100.4	9019	2098.8	9059	2098	9098	2096	9131	2094
9168	2093	9193	2092.3	9224	2089.6	9237	2086.1	9256	2085.5
9268	2087.2	9288	2092.9	9307	2094.5	9336	2095.3	9368	2095.4
9413	2095.2	9460	2095	9487	2095	9519	2094.8	9538	2094.4
9554	2098.2	9566	2098.6	9595	2098.5	9608	2097.9	9624	2095

9642	2094.1	9652	2095.3	9680	2096.3	9687	2095.9	9706	2096.2
9716	2095.4	9745	2095.2	9777	2094.6	9800	2094.9	9817	2094.6
9823	2093.7	9842	2094.9	9883	2094.8	9898	2095.2	9927	2095.2
9952	2094.7	9968	2092.3	9977	2091.6	9996	2091.8	10000	2091.9
10010	2095.6	10048	2095.6	10094	2095.1	10121	2093.8	10134	2094.6
10169	2094.8	10215	2094	10221	2093.5	10231	2094.1	10277	2094.3
10298	2094.6	10305	2094	10315	2094.7	10348	2094.9	10375	2094.8
10390	2092.6	10406	2086	10413	2085.6	10422	2086.2	10446	2091
10478	2093	10511	2094.8	10542	2096.6	10564	2097.9		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8984	.055	9307	.045	9538	.035	9680	.055	9952	.045
10010	.055	10390	.045	10446	.035				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9952	10010	535	583.5	600	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8984	9608	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.45

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9124	2092.6	9188	2091	9236	2089.7	9290	2088.1	9314	2086.9
9329	2085.1	9367	2084.6	9383	2081	9394	2081	9412	2083.6
9434	2085.2	9464	2086.6	9517	2087.6	9557	2088.1	9570	2088
9600	2088.4	9633	2089.3	9650	2088.7	9679	2088.5	9715	2088.2
9731	2088.9	9761	2089.3	9775	2089.8	9813	2090.2	9861	2090.2
9909	2089.6	9941	2088.8	9966	2088.8	9975	2085.1	10000	2084.8
10010	2086.9	10026	2086.9	10038	2088.5	10053	2086.9	10072	2087.9
10093	2088.3	10113	2088.1	10127	2084.7	10132	2084.6	10148	2087.4
10182	2088	10230	2088.5	10266	2088.2	10301	2087.8	10312	2085.6
10322	2087.2	10347	2087.7	10374	2087.3	10388	2086.2	10394	2086.2
10414	2087.9	10440	2088.5	10488	2089	10513	2088.4	10533	2086.7
10551	2086.8	10575	2085.6	10598	2082	10615	2081.7	10641	2082.7
10653	2087.7	10679	2089.2	10705	2089.8	10742	2090.3	10771	2091.5
10780	2090.5	10793	2092.7						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9124	.055	9434	.045	9517	.035	9861	.045	9966	.045
10038	.055	10575	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9966	10038	375	362.2	375	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9124	9861	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.38

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8816	2090.3	8849	2088.6	8903	2087.3	8954	2085.3	9005	2083.9
9032	2082.6	9045	2082.1	9053	2082.7	9066	2082.1	9076	2080.1
9083	2080	9098	2081.8	9126	2081.8	9174	2083.8	9211	2084.9
9235	2085.4	9244	2085.7	9247	2084.8	9262	2085.9	9276	2086
9287	2085.7	9308	2085	9333	2084.6	9379	2084.1	9415	2083.9
9447	2083.6	9487	2082.2	9510	2081.2	9523	2081.6	9549	2082
9565	2081.8	9571	2082.4	9601	2082.5	9624	2082.8	9672	2083.3
9697	2083.3	9725	2082.4	9760	2083.4	9775	2084.1	9795	2084
9810	2083.4	9830	2084.8	9865	2084.7	9873	2081.6	9883	2081.7
9892	2082.7	9910	2083.3	9940	2082.8	9952	2080.6	9967	2082.1
9984	2080.3	10000	2079.8	10012	2083.8	10026	2083.2	10037	2083.3
10071	2081.7	10085	2081.5	10094	2084	10109	2084.6	10140	2084.3
10152	2082.2	10162	2084.6	10174	2084	10194	2080.9	10203	2084.5
10236	2084.5	10262	2078.2	10281	2078.9	10296	2084.1	10336	2085.8
10404	2087	10466	2089.1	10498	2089.3	10528	2090.7	10546	2091.2

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8816	.055	9174	.045	9244	.035	9287	.055	9697	.07
9865	.045	10012	.07	10236	.045	10296	.055		

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9865   10012              255   538.7     760            .1        .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev
    8816    9287

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.28

INPUT
Description:
Station Elevation Data    num=      57
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    8848  2089.8    8893  2088.3    8943  2087.1    8997  2086.2    9033    2085
    9077  2083.4    9099  2081.8    9134  2081.2    9154  2080.2    9166  2078.5
    9174    2078    9181  2080.2    9199  2080.4    9222  2081.1    9234  2082.1
    9269  2082.8    9292  2084.1    9320    2085    9323  2084.5    9330  2084.8
    9337  2085.5    9360  2085.8    9378  2085.7    9386  2084.3    9409    2084
    9433  2083.4    9450  2082.5    9487    2082    9498  2082.2    9523  2082.7
    9552  2082.6    9577  2082.3    9606  2081.3    9632  2079.8    9648  2079.1
    9657  2079.9    9675  2080.1    9687  2078.5    9707  2079.9    9725  2079.3
    9767  2079.4    9791  2079.5    9807    2079    9838  2079.3    9849  2078.9
    9887  2078.6    9899  2077.3    9919  2078.7    9954  2078.7    9965  2077.8
    9978  2075.1    9995  2072.6   10000  2072.3   10014  2071.5   10024    2074
   10052  2089.4   10060  2090.5

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    8848    .055    9320    .035    9378    .055    9954    .045   10052    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9954   10052              950   867.5     715            .3        .5
Ineffective Flow     num=        1
   Sta L   Sta R    Elev
    8848    9552

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.12

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9560  2078.3    9570  2077.5    9586  2077.5    9612  2076.9    9632  2076.2
    9637  2077.3    9654  2074.7    9667  2074.1    9676  2075.1    9703  2074.3
    9721  2072.5    9740  2071.6    9774  2069.4    9798  2066.9    9819  2069.4
    9826  2068.6    9836  2069.9    9855    2071    9872  2071.7    9903  2074.9
    9928  2074.9    9949  2073.5    9976  2066.7    9985  2066.2   10000  2064.7
   10008  2065.2   10033    2065   10053  2070.6   10079  2072.1   10092  2071.5
   10104  2072.4   10113  2075.3   10125    2075   10138  2071.2   10173    2073
   10184  2072.5   10211    2072   10240  2072.3   10242  2077.9   10253  2072.5
   10267  2072.4   10289  2075.6   10312  2082.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9560    .055    9949    .045   10053     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9949   10053              900   867.7     800            .1        .3
Ineffective Flow     num=        2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    9560    9928           10113   10312

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 24.95

INPUT
Description:
Station Elevation Data    num=      30
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9846  2075.2    9874  2073.3    9901    2070    9920  2064.7    9939  2064.6
    9953  2064.3    9975  2063.7    9989  2057.4   10000  2057.7   10007  2059.4
   10018  2059.9   10024  2059.3   10033  2060.4   10069  2060.5   10086  2059.2
   10097  2060.5   10121  2060.3   10135  2061.5   10159  2062.9   10173  2062.7
   10185  2062.2   10201  2060.8   10204  2061.1   10226  2060.5   10236  2061.2
   10248  2061.2   10258  2060.2   10266    2060   10275  2063.2   10296  2070.9

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9846     .07    9920    .045    9975    .045   10097    .055
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9975   10097              485   405.6     285              .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 24.87

INPUT
Description:
Station Elevation Data    num=      24
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9592  2071.9    9602  2067.9    9659  2061.1    9754  2061.7    9770  2061.3
    9816  2061.2    9870  2061.7    9911  2061.6    9917  2059.7    9929  2061.1
    9962  2060.7    9978    2055   10000  2054.6   10012  2056.3   10042  2056.4
   10057  2057.8   10071  2059.1   10100  2058.6   10124  2057.2   10135  2060.1
   10157  2060.8   10172  2061.5   10198  2062.8   10237    2071

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9592    .055    9659    .045    9911    .055    9962    .045   10071    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9962   10071              775   732.8     685              .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 24.74

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9431  2065.3    9450  2062.9    9482  2060.4    9498  2058.1    9511  2057.8
    9536    2057    9547  2056.2    9561  2055.2    9579  2054.7    9591  2055.9
    9620  2055.8    9659  2055.4    9701  2055.4    9721  2055.2    9748  2055.4
    9770  2055.3    9802  2055.6    9824  2054.7    9841  2055.2    9891  2055.4
    9906  2055.2    9937  2055.1    9961    2055    9981  2045.8   10000  2046.1
   10011  2048.3   10036  2049.5   10065  2051.2   10086  2053.8   10124  2053.9
   10146  2054.1   10180  2053.1   10189    2052   10200    2052   10217  2055.6
   10239  2055.5   10273  2057.7   10328  2062.1   10369  2063.9   10394  2065.4
   10436  2065.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9431    .035    9961    .045   10086     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9961   10086              615   668.8     615              .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 24.61

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9419  2052.5    9428  2050.4    9460  2049.9    9502  2049.7    9538  2049.3
    9575  2049.2    9619  2048.9    9675  2048.8    9704  2048.7    9738  2048.4
    9755  2044.8    9775  2044.9    9782  2046.7    9798  2047.7    9821  2048.5
    9858  2048.6    9893    2048    9915    2046    9921  2046.2    9934  2045.9
    9944  2046.1    9959  2042.9    9984  2040.7   10000  2040.2   10012  2045.3
   10023  2046.5   10037  2045.5   10050    2047   10074  2048.1   10086  2049.2
   10096  2049.8   10130  2050.2   10157  2050.7   10182    2051   10196  2051.4
   10219  2051.6   10244  2051.8   10250  2052.4   10264  2052.8   10291  2054.9
   10312  2056.3

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9419    .035    9738    .045    9798     .07    9944    .045   10023     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9944   10023              730   668.9     725              .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 24.48

INPUT
Description:
Station Elevation Data    num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9589    2047    9620  2043.8    9644  2042.3    9664  2042.4    9675  2039.1
    9685  2039.4    9706  2039.2    9717  2038.5    9726  2040.8    9753  2042.6
```

9785	2043.3	9802	2040.4	9842	2040.4	9882	2041.8	9921	2041.7
9951	2041.5	9962	2037.2	10000	2036.8	10008	2038.7	10037	2037.8
10048	2042.9	10072	2042.5	10105	2044.3	10138	2046.9	10176	2048.9

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9589	.055	9675	.035	9717	.055	9951	.045	10048	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10048	385	501.7	550	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.38

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9708	2051.6	9743	2042	9780	2037.7	9794	2036	9811	2035.7
9834	2035.6	9863	2035.8	9875	2033.7	9888	2033.6	9897	2031.6
9911	2032.7	9930	2032.8	9944	2031.5	9954	2033.6	9974	2034
9981	2032.9	10000	2032.7	10004	2034	10038	2035.1	10077	2036.3
10089	2035.5	10095	2036.1	10138	2037.2	10160	2043	10176	2037.4
10193	2038	10210	2037.8	10223	2039.4	10290	2039.9	10329	2039.4
10377	2039.7	10388	2041	10437	2041.6	10478	2044	10503	2045.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9708	.055	9888	.045	10004	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9888	10004	640	708.8	450	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10160	10503	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.25

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9735	2047.9	9770	2040.4	9798	2037.4	9809	2035.3	9832	2034.2
9842	2033.9	9867	2034.4	9901	2033.8	9951	2034.6	9968	2025.5
9981	2024.8	10000	2024.2	10004	2024	10018	2034.5	10045	2032.8
10052	2033.1	10070	2031.6	10114	2032	10129	2031	10144	2031
10162	2027.1	10175	2027.4	10199	2027.2	10247	2035.8	10261	2034.3
10281	2033.5	10295	2034.3	10311	2033.9	10361	2035	10407	2035.5
10444	2036	10491	2037.1	10532	2038.2	10565	2038.8	10589	2040.1

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9735	.055	9809	.045	9951	.045	10018	.055	10144	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10018	765	708.6	665	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10247	10589	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.12

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9627	2040	9648	2033.7	9664	2033.1	9693	2033.6	9726	2033.9
9737	2028.6	9750	2028.2	9778	2028.8	9813	2028.5	9838	2028
9859	2027.8	9911	2026.6	9920	2024.1	9941	2023.5	9944	2020.6
9956	2020.7	9961	2021.2	9986	2021.6	10000	2021.8	10027	2022.2
10043	2023.4	10067	2027.2	10094	2028.1	10126	2027.9	10153	2028.3
10187	2029.3	10228	2029.8	10272	2030.5	10330	2032.1	10374	2033.3
10393	2034.3	10430	2035.9	10455	2036.7	10506	2038	10545	2039.2
10570	2040.1								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9627	.045	9911	.045	10067	.035

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9911   10067              450   451.7    440              .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 24.03

INPUT
Description:
Station Elevation Data    num=      38
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9750    2028    9768  2019.6    9783  2023.4    9793  2023.5    9806  2021.3
    9819  2018.8    9824  2018.8    9838  2022.7    9872  2024.3    9889  2024.4
    9903  2023.6    9917  2022.7    9932  2025.1    9958  2021.5    9976  2017.5
   10000  2017.6   10003  2017.8   10023  2022.1   10063    2021   10077  2021.8
   10095  2021.2   10109  2017.8   10123  2017.9   10134  2019.5   10146  2019.9
   10165  2018.6   10194  2023.3   10218    2024   10256  2022.9   10289  2023.4
   10362  2024.1   10370  2023.3   10375  2024.5   10405  2024.9   10435  2026.5
   10485  2026.3   10501  2027.5   10536  2029.8

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9750    .045    9932    .045   10023    .055   10194    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9932   10023              585   457.8    300              .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 23.94

INPUT
Description: THE PRESENCE OF INNER-CHANNEL ISLANDS AT THIS CROSS-SECTION CAUSE
             FLOODWAY TOPWID TO EXCEED FLOODPLAIN TOPWID HOWEVER, FLOODWAY IS
             WITHIN BOUNDARIES OF FLOODPLAIN
Station Elevation Data    num=      35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9516  2027.1    9533  2017.8    9551    2016    9572  2015.9    9596  2019.4
    9626  2019.8    9671  2020.8    9700    2021    9725  2021.4    9769    2021
    9789  2020.7    9809  2021.5    9827  2020.9    9848    2021    9880  2020.6
    9894  2017.4    9919  2016.4    9946  2015.4    9968  2013.2    9979  2011.7
   10000  2010.6   10002  2010.4   10020  2020.1   10036  2020.1   10042  2015.1
   10055  2020.1   10073  2020.4   10100  2020.9   10118  2020.8   10131  2021.6
   10153  2021.9   10190  2023.1   10226  2025.2   10261  2026.9   10293  2029.9

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9516    .045    9596    .055    9880    .045   10020    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9880   10020              340   403.2    435              .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 23.87

INPUT
Description:
Station Elevation Data    num=      35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9487  2023.3    9499  2022.3    9550  2020.6    9575  2020.9    9594  2019.9
    9628    2018    9648  2013.9    9662  2013.6    9669  2013.8    9681  2013.5
    9700  2015.5    9728  2016.7    9769    2017    9804  2016.9    9825  2016.1
    9842    2017    9875  2017.1    9907  2017.7    9934  2016.7    9951  2010.1
    9969  2009.9    9975  2009.2   10000  2008.8   10006    2009   10021  2016.7
   10039    2017   10054  2016.6   10083  2016.7   10098  2017.3   10134    2018
   10166  2018.8   10207  2020.4   10234  2020.9   10273  2023.6   10306  2025.8

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9487    .045    9628    .045    9728     .07    9934    .045   10021      .1
   10098    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9934   10021             1125  1179.6   1200              .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 23.64

INPUT
Description:
Station Elevation Data    num=      55
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9081    2012    9109  2009.1    9138  2010.9    9200  2010.6    9231  2010.6
```

9271	2010	9295	2008.5	9317	2009.8	9349	2009.9	9387	2008.2
9404	2009.2	9421	2009.5	9435	2008.6	9458	2008.8	9510	2007.8
9517	2007.1	9528	2007	9537	2007.6	9556	2007.1	9572	2008.1
9599	2007.9	9630	2007.7	9658	2006.6	9671	2006.6	9677	2005.6
9691	2005.5	9701	2007.7	9715	2007.4	9720	2008.3	9732	2008.1
9747	2006.4	9767	2007.3	9799	2006.7	9846	2004.9	9855	2003.6
9863	2002.8	9877	2004.4	9889	2003	9912	2002.9	9925	2004.6
9941	2003.7	9970	2003.6	9978	2000.1	10000	2000	10005	2000.5
10019	2005.1	10032	2004.9	10039	2003.1	10054	2006	10071	2006.1
10078	2005.8	10097	2007	10114	2009.5	10136	2012.2	10155	2015.7

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9081	.055	9846	.07	9970	.045	10019	.1

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970	10019	525	500.2	460	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9081	9421	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.55

INPUT
Description: Cross Section 23.55 Lengthened 44 feet At Right Overbank Using Topographic Maps

Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9263	2009.4	9315	2008.5	9335	2008.3	9375	2007.2	9405	2006.5
9440	2005.9	9466	2005.3	9486	2004.5	9531	2003.7	9555	2003.9
9559	2004.9	9569	2003.2	9588	2003.1	9594	2003.9	9603	2003.2
9647	2002.1	9661	2001.6	9696	2002.5	9730	2001.9	9743	1996.9
9766	1996.7	9781	1999.4	9791	1999	9801	1999.7	9809	1999.5
9835	2000.3	9840	1999.1	9849	1999.5	9869	1999.2	9882	2000.3
9905	2000.6	9916	2001.2	9945	2000.5	9959	1997.4	9976	1997
10000	1997.7	10014	1997.9	10028	1999.2	10062	1999.6	10069	1999.4
10076	1997.9	10081	1997.7	10091	1998.5	10102	2001.1	10131	2001.7
10157	2001.3	10184	2000.2	10202	1998.8	10213	1999.1	10233	1998.6
10242	1997.8	10248	1997.9	10264	2003.1	10289	2006	10308	2010

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9263	.045	9730	.045	9781	.055	9945	.045	10102	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945	10102	325	545.1	595	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9263	9559	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.45

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9460	2004	9576	2001.8	9590	2001.7	9623	2000.8	9662	1999.9
9712	1999.2	9731	1998.8	9753	1998	9787	1997.6	9817	1998.1
9850	1997.8	9874	1993.1	9888	1991.8	9909	1991.4	9927	1993.8
9951	1994.2	9959	1995.1	9979	1994.8	9985	1991.5	9991	1991.5
10000	1991.8	10005	1992	10020	1993.9	10039	1993.4	10058	1994.5
10103	1995.7	10137	1994.5	10151	1994.5	10157	1993.7	10172	1994.8
10236	1994.3	10252	1989.9	10260	1991.7	10270	1991.5	10279	1988.5
10305	1988.4	10314	1989.5	10328	1989.5	10352	2000.1		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9460	.045	9787	.045	9927	.1	9979	.045	10020	.1
10270	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979	10020	530	623.5	630	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.33

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9541	1997.8	9565	1998	9582	1997.1	9646	1995.9	9703	1994.4
9741	1992.7	9769	1990.4	9809	1989.2	9819	1988.3	9835	1989.6
9858	1990.8	9896	1990.9	9924	1989.9	9942	1990.4	9963	1989
9981	1981.3	10000	1981.1	10004	1981.1	10017	1985.3	10026	1985.4
10038	1981.8	10048	1979.5	10057	1979.9	10065	1982	10082	1983.8
10100	1983.9	10111	1985.4	10129	1985.6	10146	1987.8	10164	1988.1
10182	1986.2	10202	1986.4	10222	1988.2	10253	1988.1	10269	1987.4
10289	1985.8	10314	1986.7	10333	1985.1	10339	1984.6	10352	1988.4
10368	1997.3	10386	2000.4						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9541	.055	9963	.045	10017	.045	10065	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9963	10017	490	432.6	375	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.25

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9293	1995.4	9364	1994.8	9421	1994	9518	1993.5	9602	1992.6
9609	1991.5	9613	1991.8	9632	1991.8	9639	1991.3	9660	1989.2
9694	1985	9713	1984.5	9766	1983.9	9801	1985.6	9827	1985.9
9861	1983.8	9874	1983.5	9900	1984	9928	1983.4	9945	1980.3
9954	1977.5	9973	1977.8	10000	1977.3	10025	1981.3	10054	1981.3
10078	1981.9	10105	1982.1	10118	1982.9	10150	1983.4	10165	1982.6
10181	1984.1	10208	1983	10226	1984.4	10257	1984.9	10299	1984.8
10332	1983	10353	1983	10361	1981.5	10374	1982.6	10385	1980.9
10400	1983	10408	1983.2	10424	1988.6				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9293	.055	9928	.045	10025	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9928	10025	675	619.4	550	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.13

INPUT
Description: Cross Section 23.12 Lengthened 138 feet At Left Overbank Using Topographic Maps

Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9370	1982	9508	1980.4	9530	1979.3	9541	1978.8	9554	1976.9
9580	1975.8	9638	1976.1	9690	1978	9720	1979.4	9787	1979.7
9868	1980	9895	1978.3	9917	1976.9	9932	1970.6	9945	1970.6
9951	1972	9965	1972.1	9979	1971	10000	1969.8	10011	1977.2
10035	1976.9	10067	1978	10101	1977.4	10129	1976.4	10151	1976.3
10162	1974.6	10170	1975.4	10183	1974.1	10212	1979.6	10262	1984.6
10301	1987.7	10311	1989.9	10332	1990.6				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9370	.035	9720	.055	9917	.045	10011	.1	10212	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9917	10011	730	880.2	900	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.96

INPUT
Description: Beginning of Montgomery Watson's Analysis Cross Section 22.96 Lengthened 339 feet At left overbank using topographic maps
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8982	1976	9119	1974	9307	1972	9320	1972.6	9386	1972.3
9440	1971.4	9470	1970.3	9513	1970	9589	1970.3	9618	1970.5

9642	1969.4	9660	1968	9669	1968.3	9686	1969.4	9718	1970
9775	1970.9	9827	1970.6	9844	1969.3	9876	1969.6	9900	1968.6
9951	1966	9963	1962.9	9977	1960.8	10000	1959.6	10016	1975.7
10023	1976.9	10050	1976.7	10090	1978	10124	1979.7	10128	1979.9

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8982	.055	9307	.035	9513	.07	9844	.1	9951	.045
10016	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10016	1025	1033	1031.3	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.86

INPUT
Description:

Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8772	1970	8806	1969	8932	1968	9108	1966	9274	1964
9360	1962	9434	1960	9442	1959.5	9452	1960	9480	1961
9530	1962	9585	1962.5	9636	1962	9646	1960	9651	1961
9660	1960	9672	1960.5	9686	1960	9690	1958	9702	1958
9718	1960	9834	1962	9888	1962.5	9912	1962	9968	1960
9976	1958	10000	1953.5	10024	1954	10030	1956	10034	1958
10078	1960	10108	1960.5	10124	1960	10192	1962	10202	1964
10232	1966	10262	1968	10300	1970	10440	1972		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8772	.055	9672	.045	9718	.055	9834	.035	9912	.1
9968	.045	10034	.1	10108	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968	10034	370	370	370	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.79

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9140	1962	9195	1961	9240	1960	9270	1959	9310	1958
9380	1957	9390	1956	9410	1955.5	9420	1956	9440	1957
9510	1958	9550	1957	9590	1956.7	9660	1956	9690	1956
9700	1958	9720	1958.2	9785	1959.8	9830	1958	9880	1959
9900	1958	9930	1956	9940	1954	9965	1952	9985	1950
10000	1950	10010	1952	10040	1954	10060	1956	10100	1958
10125	1960	10165	1961	10295	1962				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9140	.055	9880	.1	9930	.045	10060	.1	10125	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10060	295	316.8	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.73

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9200	1960	9300	1955.5	9310	1955	9357	1954	9390	1953
9410	1953	9435	1954	9450	1954.2	9460	1954	9480	1953
9510	1952	9520	1952.5	9530	1952	9540	1954	9570	1953
9580	1952	9580.5	1953	9590	1953	9600	1954	9620	1954
9670	1954	9690	1956	9720	1957	9750	1956	9780	1954.8
9810	1956	9840	1956.2	9870	1956	9880	1954	9900	1952
9965	1950	9980	1948	9985	1947	10010	1947	10010	1948
10020	1950	10025	1954	10030	1956	10085	1957.5	10125	1958
10450	1960								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

9200	.055	9870	.1	9965	.045	10030	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10030	330	316.8	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.67

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9165	1960	9230	1957	9290	1956	9400	1954	9430	1952
9440	1950	9450	1948	9460	1945	9480	1948	9540	1949
9560	1950	9610	1950.7	9665	1950	9680	1949	9690	1949
9700	1950	9730	1951	9785	1951	9800	1950.3	9850	1952
9930	1952	9950	1950	9980	1946	10000	1944.5	10020	1944.5
10040	1946	10050	1950	10070	1950	10087	1952	10120	1954
10195	1954.6	10275	1956						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9165	.045	9480	.055	9930	.045	10050	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10050	620	528	450	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.56

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9125	1952	9340	1950	9420	1945	9455	1940	9525	1940
9530	1938.5	9550	1940	9565	1942	9610	1944	9660	1945
9750	1946	9770	1946	9790	1946	9905	1946.5	9970	1946
9980	1940	9990	1938.6	10010	1938.6	10020	1940	10055	1942
10060	1944	10095	1946	10180	1946	10190	1944	10200	1944
10240	1946	10255	1948	10300	1947.5	10400	1948	10475	1948.4
10600	1950	10740	1952						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9125	.045	9610	.055	9970	.045	10095	.07	10180	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970	10095	335.4	422.4	390	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10255	10740	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.48

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8700	1946	8780	1944	8990	1942	9025	1938	9040	1937
9070	1936	9080	1935	9095	1937	9115	1938	9133	1940
9178	1945	9230	1945	9268	1943	9310	1940	9338	1938
9350	1937.5	9395	1938	9415	1939	9440	1940	9460	1940
9485	1940	9503	1940	9515	1940.7	9565	1940	9578	1939.6
9583	1940	9645	1941	9670	1942	9690	1942.6	9705	1942
9720	1941	9730	1940.4	9745	1942	9765	1942	9805	1943
9900	1944	9932	1944	9952	1942	9967	1940	9980	1936
10013	1936	10045	1940	10055	1942	10072	1942	10085	1942
10095	1944	10113	1944	10140	1942	10155	1942	10172	1942.5
10185	1942	10212	1940	10225	1938	10237	1938	10245	1940
10255	1942	10330	1944	10420	1944.8	10650	1946		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8700	.055	8990	.045	9440	.055	9932	.045	10095	.07
10212	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9932	10095	210.7	264	220	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev

8700 9230

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.43

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8745	1944	8955	1942	9000	1936	9020	1934	9060	1935
9070	1933.4	9080	1935	9098	1936.8	9140	1936	9163	1935
9173	1934	9180	1935	9185	1936	9287	1938	9295	1939
9340	1939	9367	1938	9375	1937	9400	1936	9415	1935
9425	1935	9440	1937	9452	1935	9535	1940	9570	1937.5
9630	1939.3	9665	1939	9690	1939	9745	1940	9827	1940
9880	1941.5	9915	1940	9950	1940	9960	1938	9970	1934
9980	1936.2	10000	1936.2	10010	1934	10025	1938	10050	1940
10065	1939.8	10080	1940	10110	1941.5	10135	1940	10165	1940
10175	1936	10190	1936	10210	1934	10223	1936	10225	1938
10240	1940	10310	1942	10825	1942	10965	1944		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8745	.055	9000	.045	9080	.055	9140	.045	9185	.055
9950	.045	10050	.07	10165	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10050	410	369.6	340	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.36

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9050	1940	9110	1930	9150	1928	9172	1927	9185	1926
9200	1929	9210	1925	9220	1926	9236	1930	9250	1932
9305	1933	9333	1934	9365	1935	9402	1936	9460	1937
9525	1937.8	9605	1937	9630	1936	9632	1934	9635	1934
9650	1933.3	9660	1934	9675	1934.7	9735	1936	9750	1937
9765	1936	9787	1934	9800	1932.5	9822	1936	9850	1935
9860	1936	9890	1938	9940	1938	9975	1930	9985	1929
10000	1929	10010	1930	10025	1934	10040	1936	10070	1938
10110	1938	10140	1936	10155	1934	10180	1932.2	10195	1934
10202	1936	10232	1938	10285	1938.8	10345	1938	10420	1937.3
10485	1936	10490	1935	10525	1936	10650	1936	10655	1935
10670	1936	10710	1938	10805	1940	10845	1940.7		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9050	.055	9110	.045	9402	.035	9630	.07	9940	.045
10070	.07	10110	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10070	435.7	369.6	370	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10284	10845	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.29

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8908	1935	8955	1930	8960	1925	8965	1924.5	8985	1924
9005	1923.5	9015	1924	9050	1923	9055	1923.5	9065	1924
9085	1924.5	9100	1926.5	9110	1927	9120	1927.2	9140	1927.8
9175	1928.5	9250	1929.5	9300	1931	9350	1932.5	9400	1933.2
9465	1934	9491	1934	9630	1932	9640	1930	9652	1925
9672	1926	9710	1928	9740	1930	9770	1932	9860	1932
9880	1931	9890	1932	9908	1934	9930	1934	9972	1932
9980	1930	9982	1928	9984	1926	9990	1925.5	10010	1925.5
10020	1926	10030	1930	10040	1932	10060	1934	10072	1934
10100	1932	10110	1931.9	10115	1932	10155	1932.4	10205	1932
10240	1931.6	10273	1932	10320	1932.4	10380	1931.7	10410	1932
10534	1934	10678	1936						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8908	.055	8955	.045	9350	.035	9630	.045	9770	.07
9972	.045	10040	.07	10155	.045	10320	.07		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10040	358.9	369.6	280	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.22

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8685	1930	8800	1928	8895	1925	8907	1924	8920	1923
8935	1920	8970	1918	8990	1923	9058	1924	9105	1924
9125	1925	9138	1927	9210	1929	9410	1929.8	9510	1928
9530	1922	9533	1920	9552	1919.6	9565	1920	9577	1922
9585	1924	9590	1926	9600	1928	9648	1928	9657	1926
9662	1925.6	9670	1926	9680	1928	9712	1930	9795	1929.5
9915	1930	9935	1930.2	9955	1930	9975	1928	9985	1922
10000	1921.5	10020	1921.5	10055	1928	10067	1930	10080	1930.2
10097	1930	10117	1930	10145	1930.2	10170	1930	10205	1928
10240	1930	10305	1932	10455	1932.5	10555	1933		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8685	.045	9210	.035	9510	.045	9600	.055	9955	.045
10067	.07								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9935	10080	312.4	369.6	473.3	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.15

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8312	1926	8385	1925	8520	1923	8540	1918	8550	1916
8560	1918	8565	1920	8579	1923	8585	1923.3	8615	1923
8680	1922	8705	1921	8722	1922	8756	1922.8	8822	1922
8840	1921	8853	1920	8867	1918	8885	1916	8895	1915
8905	1916	8915	1920	9030	1922	9045	1924	9075	1925
9105	1926	9170	1927	9308	1926	9325	1924	9350	1922
9360	1920	9385	1918.4	9410	1920	9430	1922	9445	1924
9456	1926	9515	1926	9535	1923	9550	1926	9575	1927.2
9662	1926	9786	1924	9800	1924	9815	1925.3	9825	1924
9853	1924	9870	1923.3	9917	1926	9960	1924	9972	1922
9985	1920	9990	1919	10010	1919	10015	1920	10022	1922
10050	1924	10075	1926	10135	1927.4	10160	1926	10185	1925.8
10210	1926	10265	1926.4	10295	1926	10325	1926	10376	1928

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8312	.055	8520	.045	9105	.035	9308	.045	9575	.055
9815	.07	9960	.045	10050	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960	10050	330.7	369.6	378.9	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.08

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8620	1930	8660	1925	8700	1930	8720	1919	8765	1920
8785	1920	8835	1915	8850	1919	8875	1919	8895	1916
8910	1919	8950	1921	9090	1921	9120	1920	9150	1918
9170	1918	9180	1916	9200	1915	9210	1913	9235	1915
9250	1918	9260	1918	9270	1917	9280	1916	9290	1915.8
9315	1918	9345	1920	9360	1918	9390	1916.2	9450	1918
9465	1920	9480	1921.2	9515	1920	9525	1918.5	9555	1920
9565	1920.3	9575	1920	9585	1918.6	9605	1920	9635	1922
9655	1922.7	9770	1922	9870	1921	9905	1922	9915	1922.2
9930	1922	9950	1920	9970	1917	9975	1916	9990	1915
10010	1915	10020	1916	10040	1918	10055	1922	10080	1922
10110	1920	10130	1920	10155	1918.3	10175	1920	10220	1922

10270	1920	10305	1922	10420	1924	10545	1926

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8620	.055	8950	.045	9480	.045	9930	.045	10055	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10055	450.7	475.2	300	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.99

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8660	1925	8675	1910	8740	1915	8765	1916	8835	1918
8895	1914	9025	1918	9095	1917	9105	1912	9130	1910
9147	1911	9175	1912	9218	1913	9272	1916	9320	1916
9390	1914	9445	1914	9485	1916	9500	1916	9518	1914
9550	1916	9603	1916	9700	1917.8	9740	1916.6	9800	1918
9850	1919	9960	1918	9975	1912	9985	1910	10000	1909.9
10008	1910	10022	1912	10090	1916	10160	1918	10185	1918
10195	1916	10210	1916	10235	1917.2	10255	1916	10260	1914
10270	1913.4	10275	1914	10285	1916	10320	1918	10362	1920
10435	1922								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8660	.055	8675	.045	8765	.055	9105	.045	9800	.035
9960	.045	10090	.055	10320	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960	10090	400	422.4	470	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.91

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8740	1925	8780	1920	8805	1915	8826	1910	8835	1907
8850	1906	8863	1906	8883	1906	8895	1905	8915	1902
8935	1905	8945	1909	8990	1910	9030	1912	9070	1912.5
9125	1912	9190	1910	9250	1911.1	9320	1910	9370	1908
9380	1910	9410	1908	9425	1910	9460	1912	9490	1910
9500	1912	9525	1914	9730	1914.6	9830	1914	9878	1912
9940	1910	9975	1908	9990	1906	10000	1906	10020	1910
10040	1912	10060	1912.5	10080	1912	10120	1912.5	10150	1912
10180	1910.6	10210	1912	10250	1914	10370	1916		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8740	.055	8883	.045	9500	.035	9830	.07	9940	.045
10040	.07	10250	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10040	450.3	475.2	450.3	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.82

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8655	1920	8700	1906	8720	1906	8740	1904	8750	1903
8760	1902	8790	1901	8805	1900	8830	1901	8850	1905
8860	1907	8935	1908	8970	1908	9025	1908.7	9080	1908.2
9110	1908.9	9135	1908	9185	1906	9195	1905	9210	1906
9240	1905.2	9250	1906	9260	1906.5	9285	1906	9300	1904
9310	1902.3	9340	1904	9355	1906	9375	1908	9475	1909.4
9605	1909.3	9805	1909.6	9830	1908	9855	1906	9865	1904.3
9885	1905.8	9915	1906	9950	1906	9965	1904	9970	1902
9980	1900.5	10000	1900.5	10015	1902	10040	1904.5	10070	1906
10150	1906.7	10180	1908	10250	1910	10350	1911		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8655	.055	8720	.045	9475	.035	9805	.07	9855	.045

9885	.07	9950	.045	10070	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10070	240.7	264	297.2	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.77

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8630	1915	8652	1910	8680	1909	8697	1905	8705	1900
8720	1895	8745	1899	8815	1900	8837	1904	8850	1905
8876	1905	8952	1905	9005	1906	9075	1906	9115	1906
9180	1904	9205	1902	9240	1902	9255	1900	9270	1902
9290	1904	9320	1904	9325	1902	9340	1902	9355	1906
9395	1906	9445	1906	9535	1906	9565	1905.3	9620	1906
9740	1906.5	9785	1906	9795	1904	9830	1902	9850	1900
9885	1900	9910	1900	9955	1902	9965	1900	9970	1898
9975	1898	10000	1897.3	10005	1898	10015	1900	10030	1902
10045	1904	10115	1904	10130	1903.1	10150	1904	10205	1906

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8630	.055	8697	.045	9355	.035	9785	.07	9830	.045
9955	.045	10045	.055						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9955	10045	442.2	422.4	422.4	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.69

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8860	1910	8878	1900	8900	1890	8932	1890	8960	1896
8970	1898	9020	1900	9060	1900.9	9070	1900	9080	1899.3
9110	1900	9145	1900	9180	1900.8	9230	1900.8	9290	1900
9310	1898	9365	1896	9380	1894	9390	1896	9415	1898
9480	1899.9	9505	1898	9510	1897.3	9515	1898	9575	1900
9660	1901.6	9685	1901.8	9755	1900.8	9780	1900	9815	1898
9907	1896.1	9940	1898	9982	1896	10000	1895.1	10015	1896
10025	1898	10085	1900	10157	1898	10160	1897.1	10175	1898
10265	1900	10280	1902	10300	1902.2	10615	1904		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8860	.055	8878	.045	9780	.07	9940	.045	10025	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10025	408	422.4	320	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.63

INPUT
Description:
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9060	1910	9130	1908	9140	1906	9180	1900	9212	1900
9220	1888	9230	1888	9250	1890	9260	1892	9290	1894
9320	1896	9375	1894.9	9435	1897.6	9480	1898	9560	1898
9585	1896	9605	1894	9625	1892	9633	1898.6	9645	1892
9660	1894	9695	1896	9725	1896	9785	1894	9800	1892.6
9805	1894	9830	1896	9930	1898	9980	1896	9990	1890
10000	1888.5	10007	1890	10025	1892	10085	1894	10140	1895.3
10185	1894	10190	1892	10205	1892	10220	1894	10240	1894.8
10255	1894	10270	1893.8	10275	1894	10300	1896	10400	1897.7
10530	1898	10565	1898.3	10585	1898	10600	1898	10705	1900
10840	1902	10950	1904	11015	1906	11085	1908	11175	1910

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9060	.055	9212	.045	9633	.055	9980	.045	10085	.07
10185	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980	10085	280	264	370	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.58

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9220	1906	9250	1904	9320	1900	9365	1886.8	9395	1886.8
9400	1888	9415	1890	9430	1892	9465	1892	9510	1894
9565	1894	9590	1892	9615	1888	9640	1892	9670	1894
9725	1894.7	9750	1894	9780	1893.3	9815	1894	9890	1892
9910	1890.1	9940	1892	9965	1890	10000	1888	10025	1890
10050	1892	10090	1893.8	10155	1890	10170	1888	10185	1890
10235	1892	10255	1894	10310	1894.3	10355	1894	10425	1892.2
10482	1894	10525	1894.8	10630	1895.5	10800	1897		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9220	.035	9320	.045	9430	.07	9590	.045	9640	.055
9940	.045	10090	.055	10155	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10090	525	475.2	250	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.49

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9565	1892.5	9585	1892	9640	1890	9690	1888	9695	1884
9710	1882	9715	1884	9730	1884.5	9755	1884	9770	1883.3
9780	1886	9840	1887	9900	1887.7	9925	1886	9940	1885.3
9950	1886	9990	1886	9995	1884	10000	1883	10010	1884
10035	1885	10040	1884	10060	1882	10070	1884	10080	1888
10130	1889.4	10155	1888	10175	1884	10195	1882.5	10210	1884
10220	1884	10240	1886	10270	1888	10295	1890	10345	1892
10390	1891.5	10515	1894.1						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9565	.045	9690	.07	9780	.1	9900	.045	10080	.1
10155	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9900	10080	475	475	475	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.41

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9110	1890	9250	1888	9330	1886	9510	1885	9575	1884
9590	1880	9600	1879	9620	1880	9630	1882	9670	1882.5
9720	1882	9765	1880	9795	1877.5	9805	1880	9830	1881
9845	1880	9855	1879	9865	1880	9910	1882	9930	1880
9980	1878	10000	1874.2	10010	1880	10020	1882	10030	1884
10060	1886	10165	1888	10290	1889				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9110	.055	9575	.038	9630	.1	9765	.038	9805	.1
9980	.038	10010	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980	10010	422	422	422	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.35

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8755	1888	9110	1886	9225	1884	9320	1882	9330	1880
9350	1879.2	9400	1880	9490	1881.5	9620	1881	9750	1880
9755	1878	9760	1876	9770	1874.2	9800	1876	9810	1878

9895	1878	9915	1876	9970	1874	9980	1872	10000	1871.5
10015	1872	10025	1878	10030	1880	10040	1882	10105	1884
10310	1886	10430	1886.8	10500	1887				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8755	.035	9320	.055	9750	.038	9810	.1	9970	.038
10025	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970	10025	205	211.2	220	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.31

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8660	1887.3	8740	1886	8930	1884.3	9040	1885	9125	1884
9200	1882	9275	1880	9280	1878	9290	1876.4	9310	1878
9410	1880	9500	1880.7	9570	1880	9640	1878.8	9700	1879.8
9825	1878	9855	1872	9870	1871.2	9880	1872	9890	1874
9900	1876	9920	1876.5	9940	1876	9950	1874	9965	1872
10000	1870.7	10015	1872	10050	1878	10065	1880	10105	1882
10190	1883.5	10230	1883.9	10585	1884				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8660	.035	9410	.055	9825	.07	9940	.038	10050	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10050	230	316.8	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.25

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8610	1887	8650	1886	8723	1885.2	8857	1884	8890	1883.2
9025	1884	9125	1882	9220	1880	9225	1878	9260	1875.3
9275	1876	9310	1878	9365	1879	9410	1878.4	9500	1879.8
9515	1879.8	9655	1878	9685	1877	9730	1877.6	9820	1876.5
9860	1876.6	9880	1876	9910	1875	9935	1874	9965	1870
10000	1868.7	10045	1870	10055	1878	10090	1880	10120	1880
10365	1880	10400	1878.3	10430	1878.4	10490	1879.5	10540	1880
10600	1880.7	10715	1882	10850	1884				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8610	.035	9220	.055	9935	.038	10055	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9935	10055	420	369.6	370	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.18

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8610	1880	8650	1878	8800	1875.2	8940	1875	9050	1876
9155	1874	9225	1872	9240	1870	9250	1869.7	9260	1870
9300	1872	9330	1874	9420	1874.4	9490	1874	9650	1872.5
9845	1872.9	9950	1872	9970	1870	9980	1868	9988	1866
10000	1865	10010	1866	10080	1868	10090	1870	10100	1872
10120	1874	10200	1876	10270	1878	10365	1878	10480	1877.3
10535	1878	10700	1880						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8610	.035	9225	.055	9950	.038	10100	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10100	360	369.6	355.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8610	9050	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.11

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8410	1880	8480	1876	8535	1874	8595	1872.3	8735	1872
8910	1874	9025	1874	9160	1872	9280	1870	9325	1868
9365	1866.5	9410	1868	9450	1869.7	9555	1868	9675	1869.3
9715	1869.1	9770	1870	9850	1870	9910	1868	9930	1866
9945	1864	9960	1862	9990	1860.5	10020	1862	10035	1864
10055	1866	10080	1868	10125	1870	10185	1872	10420	1874
10580	1876								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8410	.045	9280	.055	9910	.038	10080	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9910	10080	260	316.8	370	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8410	8950	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.05

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8540	1870	8560	1869.5	8605	1870	8670	1870	8730	1869.5
8750	1870	8825	1872	8875	1872.3	8975	1872	9080	1870
9220	1868	9345	1866	9400	1864.8	9430	1866	9475	1866.4
9520	1866	9545	1865.5	9560	1866	9610	1867	9670	1866.3
9775	1867.4	9830	1866	9892	1866	9920	1864	9930	1862
9960	1860	9990	1858	10000	1857.6	10012	1858	10022	1860
10045	1866	10075	1868	10095	1869.2	10145	1868.3	10375	1870
10475	1872								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8540	.045	9345	.055	9892	.038	10045	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9892	10045	340	369.6	380	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8540	8875	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.98

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8490	1870	8540	1868	8580	1866.2	8660	1866.7	8800	1866.2
8955	1868	9145	1866	9330	1864	9380	1862.8	9390	1863.2
9425	1862	9440	1861	9465	1862	9500	1861.3	9520	1862
9580	1863.6	9615	1863.3	9645	1864	9695	1864.2	9730	1864
9870	1862	9880	1861	9920	1860	9945	1858	9965	1856
9995	1854	10000	1853.2	10005	1854	10020	1860	10060	1864.7
10125	1866	10165	1866.2	10220	1866	10280	1864	10315	1864
10390	1866	10470	1870	10480	1872	10505	1874	10565	1876
10605	1878								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8490	.045	9330	.055	9870	.038	10060	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9870	10060	400	422.4	430.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8490	8955	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.9

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8740	1864	8790	1862.7	8845	1863.2	8915	1862	8950	1861.5
8965	1862	9090	1863.2	9200	1862	9360	1862	9425	1862
9560	1858	9625	1858	9810	1860.7	9830	1860	9850	1858
9865	1857.5	9875	1858	9885	1858.2	9900	1858	9950	1856
9965	1854	10000	1852.6	10030	1854	10042	1858	10050	1860
10090	1860.9	10210	1860.5	10275	1860	10330	1858.5	10385	1860
10475	1861	10520	1864	10545	1866				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8740	.045	9425	.055	9810	.07	9885	.038	10050	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9885	10050	570	580.8	480	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8740	9090	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.79

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8860	1859	8895	1858	8925	1857.4	8980	1857.2	9030	1857
9070	1856	9240	1855	9300	1854	9350	1854	9385	1853
9415	1852	9440	1851	9450	1852	9585	1853	9907	1855
9937	1854	9950	1852	9980	1850	9990	1848	10000	1847.5
10027	1848	10070	1850	10083	1852	10118	1854	10160	1855.3
10205	1854.3	10300	1855	10350	1854	10385	1853	10465	1854
10530	1856	10645	1860						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
8860	.045	9907	.038	10160	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9907	10160	460	422.4	575	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8860	9240	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.71

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9055	1855	9060	1854	9095	1853	9122	1852.9	9212	1852
9265	1851	9290	1850.8	9350	1851	9430	1851	9455	1850
9460	1849	9480	1848	9490	1848	9550	1849	9625	1850
9720	1850	9750	1850	9810	1851	9910	1852	9960	1851
9990	1844	9995	1843	10020	1844	10040	1846	10075	1847
10085	1850	10140	1850	10160	1851	10170	1852	10230	1852
10270	1851	10370	1850	10390	1849	10470	1850	10534	1854
10610	1856								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9055	.045	9625	.035	9750	.055	9960	.038	10085	.055
10470	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960	10085	475	369.6	320	.3	.5

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.64

INPUT
Description: Beginning of Castro Fleet's Analysis (Del Webb Area) Cross Section Identification Numbers Were Increased by a factor ranging from 0.25 to 0.14 miles for consistency with Montgomery Watson Modeling. For example, Castro Fleet cross section 20.39 becomes Montgomery Watson cross section 20.64

Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9140	1860	9220	1848	9300	1846.5	9430	1847	9500	1845
9660	1847	9940	1847	9950	1844	9970	1842	10000	1842
10020	1842	10030	1844	10110	1848	10210	1848	10310	1844
10340	1844	10360	1843	10370	1844	10420	1848	10600	1852
10830	1856	11100	1860						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9140	.055	9220	.045	9660	.035	9940	.038	10110	.055
10420	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10110	112.5	135	137.5	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.62

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9218	1854	9257	1848.4	9269	1846.4	9297	1845.8	9324	1844.7
9340	1845.8	9381	1846	9417	1846.6	9438	1845.7	9464	1845.2
9486	1844.5	9511	1843.9	9518	1842.5	9526	1844.1	9552	1844.7
9592	1845.3	9629	1845.8	9687	1846	9735	1846.1	9789	1846.1
9840	1846.5	9863	1847.1	9868	1846.5	9913	1846.9	9953	1846.8
9969	1845.6	9996	1839.7	10000	1839.8	10019	1840	10042	1839.3
10053	1843.3	10074	1844.3	10092	1844	10110	1845.1	10134	1846.7
10182	1847.1	10229	1846.7	10275	1846.6	10310	1845.6	10333	1844.5
10344	1842.9	10354	1844.2	10366	1844	10373	1840.3	10384	1843.4
10407	1844.1	10429	1844.2	10479	1848.4	10531	1849.6	10591	1850.8
10631	1851.3	10692	1851.9	10742	1853.1	10786	1853.8	10840	1854.5
10898	1855.5								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9218	.055	9269	.045	9526	.035	9969	.038	10053	.055
10429	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969	10053	915	788.9	580	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.48

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9183	1846.5	9221	1842.4	9262	1839.1	9283	1838	9345	1837.3
9355	1836.5	9361	1837.5	9412	1837.6	9460	1837.7	9516	1838.6
9572	1839	9640	1839.4	9704	1839.7	9740	1838.6	9768	1834.9
9779	1836.7	9799	1838.1	9823	1838.7	9831	1837.9	9847	1839.3
9864	1838.7	9896	1838.4	9916	1839.8	9931	1840.7	9972	1840.6
9986	1833.9	10000	1834	10014	1833.9	10023	1832.8	10050	1833
10065	1838.6	10087	1838.2	10112	1839	10139	1839.5	10187	1838.8
10195	1838.7	10224	1839.2	10238	1838.6	10261	1835.2	10282	1832.4
10309	1833.4	10327	1838.4	10350	1839	10390	1838.5	10422	1838.9
10485	1840	10529	1841.4	10561	1842.6	10597	1843.7	10655	1844.6
10697	1845.6	10752	1847.1						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9183	.055	9283	.045	9704	.07	9972	.038	10065	.07
10238	.038	10327	.055	10529	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10065	600	526.7	520	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.38

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9126	1840.6	9160	1836.4	9184	1834	9192	1832.5	9230	1830.6
9246	1829.9	9254	1830.6	9288	1830.9	9338	1831.8	9368	1832.3
9434	1832.4	9490	1831.3	9519	1826.9	9537	1827.2	9545	1829.2

9576	1830	9589	1831.6	9612	1831.4	9643	1830.9	9666	1832.2
9709	1833.5	9741	1834.1	9771	1834.7	9813	1835.2	9881	1835.5
9895	1834.7	9900	1835	9927	1834.2	9951	1837.5	9968	1832.6
9990	1830.2	10000	1829.6	10026	1829.6	10043	1835.9	10087	1835.6
10133	1835.6	10164	1834.5	10195	1833.5	10216	1832.2	10229	1830.5
10256	1828.9	10293	1833.1	10312	1833.2	10335	1832.1	10376	1828.9
10386	1826.6	10405	1825.9	10419	1835.3	10447	1836.4	10512	1838.3
10570	1840.2								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9126	.055	9184	.045	9490	.055	9951	.038	10043	.07
10335	.038	10419	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10043	475	622.3	650	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.26

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9079	1841.1	9115	1837.6	9151	1832.2	9182	1823.3	9191	1825.3
9208	1825.4	9218	1824.1	9224	1825.7	9253	1825.2	9307	1826
9342	1826.8	9363	1828.1	9404	1828.4	9465	1829.1	9507	1829.6
9540	1829.5	9622	1830.4	9632	1824.8	9639	1825	9650	1826.2
9664	1826.5	9675	1828.9	9699	1829.6	9705	1828.5	9715	1830.4
9758	1831.4	9814	1830.1	9837	1829.7	9846	1828.3	9865	1829.5
9879	1830.1	9920	1828.2	9945	1828.4	9956	1827.2	9972	1827.2
9988	1826.1	10000	1825.2	10010	1827.3	10026	1827.9	10054	1828.2
10064	1825.5	10080	1825.1	10088	1825.8	10096	1828.7	10154	1828.6
10194	1828.6	10234	1828.5	10252	1828.5	10286	1827.7	10319	1825.4
10332	1822.4	10351	1821.9	10362	1822	10376	1823.4	10399	1831.1
10430	1831.8	10506	1832	10517	1833.5	10529	1830.7	10537	1831.7
10569	1832.9	10610	1833.5	10643	1834.2	10700	1834.9	10737	1835.9

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9079	.07	9307	.045	9622	.038	9675	.07	9945	.038
10096	.055	10319	.038	10399	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945	10096	460	531.6	585	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.16

INPUT
Description: THE PRESENCE OF INNER-CHANNEL ISLANDS AT THIS CROSS-SECTION CAUSE FLOODWAY TOPWID TO EXCEED FLOODPLAIN TOPWID HOWEVER, FLOODWAY IS WITHIN BOUNDARIES OF FLOODPLAIN
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9031	1830.2	9108	1826.4	9139	1826	9167	1823.8	9194	1822
9200	1820.4	9212	1822.2	9232	1824.2	9258	1825	9304	1825.2
9319	1825	9350	1825.2	9361	1824.4	9371	1825.6	9392	1825.3
9406	1821.1	9412	1821.4	9419	1822.9	9425	1823	9445	1825.8
9480	1825.2	9525	1824.7	9578	1823.3	9589	1820.9	9606	1821.7
9622	1821.1	9642	1819.3	9654	1822.4	9666	1823.6	9722	1823.3
9744	1823.1	9757	1822	9772	1822.7	9783	1821.3	9792	1821.3
9801	1822.8	9815	1822.3	9843	1823.3	9868	1823.6	9878	1821.8
9915	1821.9	9922	1821.2	9937	1821.6	9953	1821.5	9966	1818.5
9969	1818.4	10000	1817.7	10015	1823.9	10071	1823.6	10096	1822.5
10118	1818.7	10139	1819	10178	1818.8	10195	1818.4	10208	1822
10255	1822	10284	1823.5	10336	1823.1	10362	1818.5	10374	1816.2
10399	1815.5	10419	1821.2	10433	1823.5	10460	1821.4	10473	1821.3
10501	1827.1	10517	1828.7						

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9031	.035	9167	.07	9232	.055	9392	.038	9445	.055
9578	.038	9666	.055	9953	.038	10015	.055	10096	.038
10208	.055	10336	.038	10433	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9953	10015	450	555.7	635	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.05

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9039	1828	9079	1825.1	9125	1823.7	9157	1823.8	9204	1823.6
9253	1822.6	9335	1821.4	9358	1820.6	9370	1821.5	9394	1820.6
9416	1819.6	9455	1820.6	9477	1815.6	9503	1815.4	9517	1813.8
9541	1818.4	9582	1817.8	9602	1817.2	9625	1819.1	9637	1814.9
9646	1815.6	9655	1815.7	9688	1815.9	9702	1815.5	9716	1820.9
9721	1819.4	9750	1818.7	9760	1814.4	9772	1813.5	9786	1813.8
9802	1816.1	9837	1814.9	9849	1815.8	9857	1815.7	9864	1814.1
9878	1816	9903	1816.9	9916	1816.5	9935	1812.5	9942	1812.6
9954	1814.4	9967	1813	9974	1813.9	9980	1813.9	9996	1810.7
10000	1811.1	10011	1814.9	10032	1816	10064	1816.4	10113	1815.2
10133	1813.6	10143	1813.6	10156	1816.9	10212	1816.8	10230	1815.5
10241	1816.3	10307	1817.1	10334	1817.5	10363	1815.2	10382	1815.1
10416	1811.9	10447	1811.2	10476	1821.5	10491	1823.1	10529	1824.4
10579	1825.4	10625	1825.5	10672	1826.7				

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9039	.035	9455	.038	9541	.055	9625	.038	9716	.07
9954	.038	10011	.055	10113	.038	10156	.055	10334	.038
10476	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9954	10011	815	700	770	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.92

INPUT
Description: CROSS SECTION 19.92 LENGTHENED 865 FEET AT LEFT OVERBANK USING TOPOGRAPHIC MAP

Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8928	1820	8966	1818	8991	1816	9091	1816	9241	1814
9365	1813.1	9529	1814	9617	1814	9667	1814	9705	1812
9718	1810	9793	1810.2	9827	1811.6	9863	1813.4	9879	1813.8
9909	1813.7	9948	1812.6	9959	1814.2	9974	1809.7	9985	1810.5
10000	1803.6	10014	1802	10024	1802	10044	1805.4	10057	1808.1
10066	1806	10082	1809.4	10097	1810.4	10133	1811	10180	1811.4
10199	1809	10220	1808.9	10230	1809	10241	1809.9	10268	1809.5
10283	1809.7	10305	1812	10320	1811.8	10343	1811.7	10358	1811
10373	1808.8	10399	1816.5	10413	1817.6	10433	1818.3	10462	1819.8
10505	1820.5	10531	1820.8						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8928	.035	9718	.055	9985	.05	10057	.07	10180	.05
10305	.055	10399	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985	10057	250	492	660	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.83

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8883	1815.8	8943	1814.6	8997	1814	9054	1813.4	9125	1812.8
9179	1811.8	9223	1811.7	9270	1811.4	9332	1811.3	9390	1811.2
9457	1811.4	9547	1811.3	9602	1811.4	9651	1811.6	9681	1812
9711	1811.8	9736	1810.3	9751	1807.2	9761	1806.9	9770	1807.3
9804	1807.1	9826	1806	9836	1807	9862	1806.3	9881	1807.6
9908	1807.7	9929	1805.3	9943	1805.5	9960	1805.8	9974	1802.8
10000	1801.2	10018	1800.7	10035	1799.3	10045	1801.9	10074	1806.6
10121	1806.2	10150	1808.3	10184	1807.5	10206	1803.9	10222	1804.5
10263	1805.7	10301	1806.9	10333	1807.9	10372	1808.1	10398	1808.7
10429	1810.5	10487	1812						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8883	.035	9751	.055	9960	.05	10074	.07	10184	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960	10074	500	567.8	600	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.72

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8917	1812.3	8958	1810.8	9008	1809.5	9064	1809.2	9129	1808.4
9196	1808.3	9243	1807.8	9298	1807.2	9350	1806.8	9423	1806.7
9474	1806.8	9534	1807.4	9576	1807.5	9623	1807.2	9677	1808
9715	1808.6	9793	1808.4	9812	1801.9	9822	1800.9	9847	1801.3
9871	1802	9884	1797.2	9893	1796.5	9905	1799.8	9926	1801.6
9948	1800.7	9961	1798.3	9973	1798.4	9989	1797.8	10000	1796.5
10018	1795.1	10030	1796.9	10043	1801.8	10064	1803.5	10089	1802.9
10108	1802.3	10129	1802.7	10160	1801.7	10187	1801.7	10225	1800.4
10241	1797.4	10261	1797.5	10275	1799.5	10300	1802.1	10326	1803.1
10359	1802.7	10408	1801.2	10465	1799.9	10483	1798.3	10498	1798.4
10513	1799.1	10533	1803.1	10563	1805	10592	1806.4	10641	1808.2
10680	1809.5								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8917	.035	9793	.055	9871	.05	9905	.055	9948	.05
10043	.055	10225	.05	10300	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9948	10043	500	509.9	500	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.62

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9000	1808	9035	1806.3	9083	1805	9143	1804.4	9224	1804.3
9276	1803.1	9354	1802.8	9437	1802.3	9491	1802.2	9563	1802.1
9653	1801.6	9716	1801.3	9737	1800.7	9753	1800.7	9783	1801.4
9834	1801.1	9879	1801.3	9924	1802.7	9966	1803.9	9981	1802.5
10000	1791.1	10025	1790.3	10036	1792.4	10046	1796	10077	1797.5
10120	1798.2	10180	1797.8	10221	1796.4	10241	1795.6	10293	1795
10309	1793.1	10317	1793.9	10323	1792.4	10343	1793.3	10361	1795.7
10375	1796.4	10398	1794.9	10417	1797.1	10448	1797.6	10494	1797.1
10535	1796.2	10581	1795.1	10609	1795.3	10632	1794.6	10650	1795.2
10677	1798.6	10708	1799.9	10742	1801.3	10788	1802.6	10840	1803.7
10901	1804.6	10961	1805.9	11026	1806.4	11080	1807.4	11145	1808.6
11200	1810								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9000	.035	9966	.05	10046	.055	10293	.05	10361	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9966	10046	515	528	530	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9000	9966	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.52

INPUT
Description:
Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9196	1800	9242	1799.2	9307	1798.6	9367	1797.5	9417	1797
9474	1796.1	9482	1794.8	9489	1795.5	9517	1795.5	9524	1796.3
9528	1795.4	9590	1795.8	9657	1796.2	9718	1796.5	9795	1796.5
9871	1795.5	9916	1794.5	9936	1788.8	9952	1791.3	9972	1790.6
9983	1788.7	10000	1787	10005	1786.4	10022	1786.2	10038	1793
10055	1793.4	10095	1793.6	10134	1792.6	10156	1788.1	10164	1788.2
10177	1789.7	10189	1788.7	10215	1791.3	10222	1790.4	10238	1791.5
10251	1790.6	10265	1791.5	10294	1791.3	10300	1790.4	10325	1791.2
10345	1791.4	10354	1790.3	10387	1791.8	10411	1791.6	10436	1791.2
10472	1790.4	10488	1787.7	10502	1791	10518	1790.8	10539	1787.9
10559	1786.8	10582	1795.2	10617	1796.4	10679	1797	10746	1797.5
10814	1797.8	10893	1797.8	10903	1796.5	10910	1797.5	11010	1797.7
11097	1797.3	11187	1797.8	11237	1798.4				

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9196	.035	9916	.05	9972	.05	10038	.07	10134	.055
10387	.07	10518	.05	10582	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10038	700	606.3	485	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9196	9795	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.41

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9475	1802.7	9548	1794.3	9613	1789.7	9658	1787.9	9675	1786.2
9681	1787.1	9715	1788.2	9764	1788.1	9796	1787.7	9830	1788.3
9859	1790.3	9880	1791	9908	1790.6	9928	1789.4	9948	1786.8
9965	1787.6	9979	1783.9	10000	1784	10039	1784.6	10052	1785
10072	1788.6	10110	1788.5	10139	1788.6	10171	1787.5	10183	1786.6
10193	1783.2	10209	1783.3	10225	1786.1	10246	1786.6	10263	1785.9
10284	1786.5	10328	1787.3	10353	1785.2	10365	1783.2	10374	1782.6
10383	1783.1	10403	1785.8	10415	1785.7	10425	1784	10446	1787.3
10480	1786.7	10495	1787.3	10521	1787	10545	1783.5	10561	1783.8
10587	1783	10616	1790.3	10654	1791.8	10698	1792.3	10763	1792.8
10803	1793.2	10811	1792.6	10823	1793.2	10878	1793.3	10925	1793.4
10979	1793.3	11038	1793.4	11100	1793.5	11160	1793	11213	1793.2
11254	1793.8	11307	1794	11380	1794.5	11443	1795.1	11509	1795.9
11572	1796.6	11647	1798.4	11735	1800.1				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9475	.045	9965	.05	10072	.055	10183	.05	10225	.07
10521	.05	10616	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10072	600	769.4	790	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.26

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9258	1798	9307	1793.5	9361	1787.2	9382	1785.3	9425	1783
9434	1781.7	9446	1783.4	9458	1783.2	9466	1780.8	9478	1781
9490	1783.2	9541	1784.1	9573	1782.4	9594	1782.3	9602	1783.1
9634	1782.2	9645	1782.9	9675	1782.2	9708	1781.9	9715	1779.9
9723	1780.1	9740	1779.1	9759	1780.5	9812	1780	9819	1780.5
9849	1780.3	9900	1779.9	9923	1777.9	9934	1779.6	9955	1779.5
9981	1778.2	10000	1775.4	10018	1773	10024	1780.7	10035	1782
10061	1782.7	10070	1781.9	10085	1783.4	10129	1784.6	10176	1785.5
10243	1785.6	10331	1785.1	10394	1785.2	10452	1784.9	10511	1784.7
10595	1784.7	10657	1784.5	10707	1784.8	10777	1785.4	10836	1786
10871	1785.9	10904	1785.3	10948	1785.7	10995	1786.9	11037	1788.1
11072	1789	11162	1789.7	11215	1790.1				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9258	.055	9425	.07	9541	.045	9759	.07	9981	.05
10024	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981	10024	500	416.4	300	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10110	11215	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.18

INPUT
Description: From Cross section 19.18 to Cross section 20.62, the floodplain and the floodway boundaries are made coincident on the right overbank only. As per discussion with the FEMA technical evaluator, this is done to include, the low flow channel on the

right overbank of the Skunk Creek Wash, within the floodway boundary (March 17, 1998)

Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9114	1791.3	9152	1788	9213	1782.9	9246	1780	9281	1778.8
9312	1778.2	9367	1777.6	9382	1776.3	9399	1775.6	9415	1773.5
9430	1778.7	9442	1776.1	9452	1776.5	9465	1778.7	9479	1778.8
9493	1774.7	9514	1775.1	9534	1777	9568	1777.6	9625	1778
9638	1776.9	9649	1777	9672	1779	9722	1779.1	9764	1779
9774	1778.2	9813	1778.8	9834	1778.5	9854	1779.4	9874	1779.4
9906	1777.1	9918	1777	9926	1774.7	9943	1775.9	9980	1773.9
10000	1771.2	10006	1770	10025	1770.1	10040	1775.5	10055	1775.8
10080	1781.1	10135	1781.4	10202	1782.1	10254	1782.2	10305	1781.8
10344	1781.8	10403	1781.6	10410	1781.1	10438	1781.3	10534	1781.4
10600	1781.9	10659	1783	10688	1783.1	10727	1783.2	10758	1783.6
10796	1784.1	10857	1784.4	10925	1785.3	10969	1786	11042	1787.5
11098	1788.4	11158	1788.4	11224	1788.6				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9114	.045	9367	.05	9430	.055	9479	.05	9534	.055
9943	.05	10080	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9943	10080	460	598.7	720	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.07

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9213	1782.6	9244	1779.1	9266	1776.5	9296	1775.1	9326	1775.1
9352	1775	9406	1775	9426	1774.8	9467	1773.3	9515	1772
9537	1770.3	9556	1769.6	9569	1768.1	9586	1770.4	9614	1771.6
9641	1772	9656	1773.6	9691	1773.2	9711	1772	9724	1769.5
9748	1771.8	9783	1772.9	9806	1772.1	9842	1772.2	9876	1772.3
9909	1772.6	9928	1771.9	9952	1770.5	9969	1771.6	9985	1768
10000	1764.8	10007	1764.8	10022	1766.5	10047	1767	10068	1773.1
10092	1773.7	10141	1773.3	10157	1772.6	10164	1773.2	10198	1773.6
10246	1773.9	10274	1775.1	10315	1775.3	10361	1775	10402	1774.5
10441	1774	10485	1773.4	10509	1773.6	10558	1773.5	10573	1773.8
10632	1774.1	10679	1774.4	10711	1775.2	10731	1775.1	10750	1775.4
10774	1775.7	10827	1775.7	10882	1776	10923	1777.1	10971	1777.8
11014	1778.3	11069	1779.1	11099	1779.6	11110	1779.4	11128	1780
11163	1780.4	11196	1781.1						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9213	.07	9296	.055	9515	.05	9614	.055	9969	.05
10068	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969	10068	680	601	500	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.96

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9326	1779.1	9377	1778.7	9418	1776	9427	1774.9	9442	1773.9
9458	1769	9482	1767.7	9489	1766	9496	1767.1	9514	1767.3
9536	1767	9545	1768	9570	1768.8	9607	1768.6	9640	1768.1
9649	1767.9	9687	1767.8	9714	1767.3	9726	1767.7	9764	1767.9
9796	1767.6	9809	1768.2	9837	1768.3	9862	1768.6	9894	1768.2
9924	1768	9931	1762.2	9938	1762.6	9959	1762.6	10000	1762.9
10007	1763.3	10021	1766.3	10035	1767.2	10043	1767.2	10055	1766
10069	1766.9	10100	1765.7	10107	1766.7	10125	1766.3	10137	1764.5
10159	1769.4	10193	1771	10235	1770.9	10281	1770.5	10317	1769
10347	1768.7	10358	1767.5	10370	1768.8	10401	1768.8	10408	1767.4
10414	1768.5	10436	1769	10455	1769.7	10515	1770.2	10574	1770.5
10644	1770.6	10686	1770.7	10731	1770.9	10781	1771	10818	1771.3
10877	1771.2	10930	1772.4	10975	1773.1	11027	1773.1	11087	1773.4
11135	1773.8	11195	1773.9	11217	1774.3	11277	1774.5	11298	1774.6

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9326	.055	9924	.05	10021	.07	10159	.045

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9924   10021              525   631.7    600            .1        .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 18.84

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9450  1770.8    9475  1764.5    9503  1756.9    9512  1757.6    9522  1758.4
    9531  1758.5    9538  1757.4    9557  1759.8    9576  1759.9    9586  1758.7
    9597  1759.6    9604  1759.6    9612  1758.6    9620    1760    9649  1760.6
    9679  1760.6    9702    1761    9721  1759.8    9732  1760.5    9768  1760.6
    9784  1759.8    9797  1759.8    9818  1761.3    9848  1763.1    9888  1763.4
    9915  1763.2    9942  1759.9    9987    1758   10000  1755.9   10008  1755.7
   10036  1762.6   10051  1763.3   10101  1762.5   10107  1760.8   10115  1762.3
   10145  1764.2   10182  1765.5   10209    1766   10231    1765   10258    1765
   10308  1765.5   10357  1764.9   10413  1765.4   10417  1765.4   10685    1766
10808.04    1768

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9450    .055    9915     .05   10036    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9915   10036              500   497.1    325            .1        .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10165 10808.04

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 18.74

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9245    1770    9249  1770.1    9269  1763.2    9291  1763.1    9321  1762.2
    9332  1760.3    9362    1758    9377  1757.6    9388    1752    9404  1754.6
    9417  1753.8    9437  1750.4    9454  1750.7    9479  1754.9    9493  1756.6
    9528  1756.7    9552  1756.7    9583  1757.1    9616  1757.8    9656  1758.2
    9692  1758.9    9729    1760    9750  1759.4    9767  1759.8    9791  1758.1
    9814  1758.5    9851  1759.2    9883    1759    9908  1758.5    9924    1757
    9938  1757.7    9975  1757.7    9986  1755.1   10000    1755   10018  1755.2
   10042  1755.3   10056  1757.7   10111  1758.5   10142  1758.7   10163  1759.6
   10198  1760.5   10244  1760.9   10281  1760.1   10318  1759.2   10336  1759.3
   10361  1759.6   10381  1759.5   10434  1759.2   10471  1761.4   10502  1763.1
   10533  1763.6   10581  1763.5   10628  1763.1   10660  1763.7   10706  1763.7
   10752  1763.6   10796  1763.6   10855  1763.9   10889  1763.8   10896  1761.9
   10910  1763.9   10932    1764   10947  1766.7   10962    1766   10991    1764
   11003  1762.8   11018  1766.7   11036  1768.5

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9245    .055    9377     .05    9479    .055    9975     .05   10056    .055
   10502    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9975   10056              750   917.8    650            .1        .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10244   11036

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 18.57

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9578  1785.6    9624  1759.3    9644  1751.3    9663  1748.8    9671  1748.5
    9703    1746    9714  1743.7    9735  1743.5    9747  1746.6    9772  1749.2
    9819  1750.4    9829  1750.1    9832  1750.3    9879  1751.1    9926  1752.5
    9947  1752.5    9969  1745.1   10000  1744.4   10001  1744.4   10006  1745.5
   10014  1745.9   10041  1751.5   10062  1749.2   10076  1751.5   10102  1751.5
   10116  1750.9   10146  1751.2   10170  1752.4   10224  1752.3   10247  1751.4
   10263  1752.2   10302  1753.1   10332  1753.6   10360  1753.3   10386  1753.7
   10400    1751   10416  1753.4   10452  1752.6   10474  1752.5   10490  1751.8
   10507  1752.7   10528  1752.8   10560  1754.2   10585  1755.2   10600  1756.5
```

10645	1757	10678	1757.7	10717	1757.9	10766	1758.1	10820	1758.8
10862	1759.2	10915	1760.1	10941	1760.2	10950	1760.5	10964	1760.8
10993	1760.4	11007	1760.2	11021	1761.1	11048	1761.8	11082	1765.7
11111	1770.4	11148	1776.8						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9578	.07	9703	.04	9747	.07	9947	.04	10041	.07
10600	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9947	10041	275	389	675	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.49

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9699	1762.2	9727	1754.7	9755	1746.3	9766	1747.1	9792	1747.4
9832	1747.4	9853	1745.9	9867	1742.7	9895	1743.3	9909	1744.9
9930	1744.8	9965	1744.6	9985	1741.7	10000	1741.9	10015	1745.2
10037	1746.9	10052	1746.9	10060	1746.2	10072	1745.8	10082	1747.3
10111	1747.8	10142	1748.7	10167	1748.9	10202	1749	10243	1748.9
10282	1748.7	10327	1748.2	10379	1748	10394	1747.8	10406	1746.5
10417	1747.4	10434	1743.7	10445	1744	10464	1746.9	10481	1742.3
10497	1746.3	10522	1748.9	10562	1750.3	10602	1751.2	10637	1751.4
10676	1751.9	10727	1752.2	10780	1752.5	10817	1752.7	10834	1753.1
10873	1753.7	10897	1754.2	10951	1754.5	10998	1754.9	11036	1755.3
11087	1755.7	11131	1757.1	11137	1757.6	11163	1757.6	11194	1759.2
11230	1759	11254	1759.4						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9699	.07	9853	.04	9909	.07	9965	.04	10037	.07
10202	.055	10417	.04	10497	.07	10562	.045		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10037	1162.5	1099.7	850	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.29

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9535	1750.9	9583	1741.6	9597	1737.2	9608	1739.5	9634	1739.1
9647	1737.5	9660	1732.6	9678	1737.5	9712	1739.3	9758	1740.2
9788	1740.1	9800	1739.1	9812	1739.7	9832	1738.7	9852	1735.8
9872	1737.4	9914	1738.3	9932	1737	9949	1735.5	9968	1735
9976	1734	9984	1734.6	10000	1734.3	10009	1735.5	10020	1735.3
10029	1733.5	10049	1739.9	10076	1740.5	10115	1740	10130	1736.1
10144	1734.7	10160	1736.9	10185	1738.4	10213	1742	10244	1742.5
10266	1742.8	10270	1742.2	10286	1742.8	10318	1742.8	10349	1742.7
10388	1742.8	10395	1742.5	10429	1742.5	10468	1742.2	10472	1742.6
10553	1742.5	10565	1741.1	10574	1742.8	10607	1743.2	10634	1743
10693	1743.3	10746	1744.6	10795	1744.9	10858	1745.6	10899	1746
10970	1747.1	11035	1747.8						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9535	.055	9634	.04	9678	.055	9914	.04	10049	.07
10115	.04	10185	.055	10244	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9914	10049	200	300	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.23

INPUT
Description: NEW CROSS SECTION: GR CARD DATA FOR 18.20 DEVELOPED FROM TOPOGRAPHIC MAPS. CROSS SECTION ADDED TO MODEL FLOW OVER CLOUD ROAD. CAPACITY OF 3-60" CMPS IGNORED
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9510	1750	9550	1740	9640	1736	9650	1734	9660	1736
9690	1736	9700	1735	9710	1736	9780	1738	9800	1738
9930	1736	9950	1734	9965	1732	10000	1730	10010	1738.8

10240	1740	10480	1740	10730	1740	10870	1742

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9510	.055	9930	.04	10010	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10010	370	370	400	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.16

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9687	1755.1	9711	1739.9	9724	1736.1	9754	1734	9768	1730.7
9775	1730.5	9788	1733.9	9810	1735.2	9836	1735.2	9860	1734.7
9877	1733.3	9892	1732.7	9911	1732.9	9951	1732.5	9981	1732.5
9996	1729.6	10000	1729.6	10020	1729.6	10050	1728.8	10075	1739
10078	1737.8	10095	1737.2	10124	1735.8	10139	1734.7	10155	1734
10199	1733.5	10330	1730	10380	1730	10430	1734	10650	1736
10750	1736.9	10930	1738	11040	1738	11130	1740		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9687	.07	9754	.04	9788	.07	9981	.04	10075	.055
10330	.04	10430	.055						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981	10075	345	377.6	360	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.09

INPUT
Description: END OF CARTER-BURGESS ONE-FOOT CONTOUR MAPPING. MONTGOMERY-WATSON
TWO-FOOT INTERVAL CONTOUR MAPPING RESUMES. ENCROACHMENT INSERTED
AT SECTION 18.09 TO CONTAIN FLOODPLAIN
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9828	1748.2	9855	1733.9	9862	1732.7	9872	1729.9	9880	1729.7
9885	1731.3	9900	1730.9	9919	1727.3	9936	1730.5	9951	1727.5
9971	1728.2	9991	1728.2	10000	1727.4	10006	1727.8	10065	1728.8
10076	1729.6	10090	1731.3	10119	1731.8	10178	1731.7	10226	1730.9
10264	1729.9	10280	1726.2	10290	1725.9	10310	1733	10333	1732.9
10380	1731.3	10407	1730.4	10447	1729.1	10497	1728.6	10522	1729.1
10540	1723.5	10556	1723.7	10573	1728.6	10597	1731.4	10633	1733.6
10663	1734.3	10717	1734.2	10772	1733.5	10799	1732.5	10847	1732.3
10899	1732.4	10935	1732.3	10974	1733.1	11013	1733	11076	1732.8
11132	1733.3	11210	1733.7	11263	1734	11349	1734.7	11423	1735.8
11479	1736.6	11538	1737.7	11570	1738	11595	1738.6	11632	1739.1
11661	1739.7								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9828	.07	9936	.04	10090	.07	10310	.055	10522	.04
10573	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9936	10090	712.5	705.8	375	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 17.95

INPUT
Description: CLOUD ROAD CROSSES THROUGH THIS CROSS-SECTION. 3-60" CMPS:
CAPACITY IGNORED REMOVED LEFT ET 9845
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9755.02	1740.51	9818.34	1730.21	9852.1	1726.85	9867	1726.36	9873.24	1726.15
9879.76	1724.21	9941.9	1724.21	10021.83	1722.21	10042.15	1722.21	10047	1723.51
10058.87	1726.71	10131.78	1726.21	10166.46	1727.01	10219.74	1727.07	10281.54	1728.21
10340.58	1728.21	10351.82	1726.21	10391.92	1724.21	10410.16	1724.43	10440.86	1728.21
10470.78	1728.21	10517.06	1726.71	10529.03	1726.21	10545.77	1723.06	10569.84	1728.36
10647.71	1730.21	10713.11	1730.31	10858.38	1730.21	10888.71	1729.96	11036.4	1730.21
11046.39	1731.31	11060.67	1734.21	11064.15	1732.11	11068.55	1734.95	11081.31	1752.83

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9755.02	.055	9873.24	.041	10058.87	.071	10340.58	.041	10440.86	.055

```
10529.03     .0410569.84    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9873.2410058.87              500   563.8     520             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.84

INPUT
Description: Change elevation of 10533.75 and 10579.92 to 1718 to match topo,
             Modified geometry to include changes by Tramonto development
             between station 1072 and 10867.86

REMOVED LEFT ET 9770

4-8-99: ADDED RIGHT FP ET AT 10706
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9670.69 1730.91 9713.32 1728.97 9753.84 1724.21 9772.54 1720.21 9790.38 1720.65
  9800.9 1722.31 9834.61 1724.21 9909.89 1724.21    9925 1723.21 9940.13 1722.21
 9955.16 1719.61 10029.4 1718.2110048.88 1718.2110133.86 1718.21 10164.5 1720.21
   10219 1720.3110230.85 1722.2110374.53 1722.21 10440.3 1723.3410487.83 1722.59
10533.75    171810579.92    171810616.26 1722.2110663.58 1722.2110716.91 1724.21
   10720  1725.510867.86 1725.5110903.95 1725.5711049.41 1726.58

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9670.69    .055 9753.84     .04 9834.61    .055 9940.13     .04 10164.5    .055
10487.83     .0410616.26    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9940.13 10164.5              310   341.7     310             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.78

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10585.51 and 10800

REMOVED LEFT ET
             9615
4-8-99: RIGHT EP ET CHANGED FROM 10607 TO 10610
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9599.65 1732.21 9627.65 1721.39  9684.5 1716.21 9717.21 1718.21 9765.64 1718.48
  9841.5 1720.21    9931 1720.21 9955.49 1720.21 9973.26 1714.21 9988.08 1714.21
   10026 1713.3810070.76 1716.2110151.26 1716.4410235.37 1716.0110282.17 1718.21
10309.14 1720.2110385.19 1720.21 10409.4 1716.2110447.79 1716.2110488.02 1720.21
10527.03 1720.2110585.51 1722.21 10585.6  1723.3   10800  1723.3 10884.8 1723.81
10986.97 1724.2111024.28  1724.9

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9599.65    .045 9955.49     .0410070.76    .05510385.19     .0410488.02    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9955.4910070.76              490   661.3     720             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.65

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10358.37 and 10903.11

4-8-99: ADDED RIGHT FP ET
             10314


Station Elevation Data    num=      24
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9382.74 1726.21 9413.87 1716.21 9475.55 1714.21  9482.6 1712.21 9493.88 1712.71
 9550.02 1713.98 9594.24 1713.48  9630.3 1714.21 9665.77 1713.31 9812.95 1714.21
 9899.02  1712.1 9912.78 1708.21    9924 1707.25 9959.39 1704.21 9984.01 1704.21
 9992.68 1708.3110000.49 1710.21   10021 1711.2810077.36 1714.2110133.98 1715.41
10205.53 1716.11   10314 1716.11 10314.1    171910903.11    1719

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

```
 9382.74    .045 9899.02     .0410000.49    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9899.0210000.49              370   460.8     500             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.57

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10401.97 and 11289.4, raised elevation to
             1715

4-8-99: ADDED RIGHT FP ET AT 10302, ADDED LEFT FP ET AT
             9440
Station Elevation Data    num=      23
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9303.56 1717.16 9335.15 1715.35 9428.56  1714.3 9471.01 1714.57  9508.1 1710.21
 9548.25 1711.34 9576.05 1712.21 9686.77 1712.21 9871.91 1708.21  9897.5 1706.21
    9923 1706.21 9930.23 1702.21 9971.46  1703.610007.46 1706.3810020.08 1708.91
   10040 1710.2110114.97 1708.53 10161.6  1711.510169.27 1712.21   10302 1712.21
10401.97    171511225.31    1715 11289.4 1715.39

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9303.56    .045 9576.05    .055 9871.91     .04   10040    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9871.91   10040              365   474.4     500             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.48

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10455.69 and 11616.42, raised elevations to
             1710.5.

4-8-99: RT FP ET CHANGED FROM 11597 TO 10383, LEFT FP
             ET CHANGED FROM 9404 TO 9478
APPROX. 3,600CFS DIVERTS INTO RIGHT
             OVERBANK FROM THIS CROSS-SECTION DOWNSTREAM. REFER TO SPLIT FLOW
             MODEL FOR RIGHT OVERBANK ANALYSIS. FLOODWAY ANALYSIS USES ENTIRE
             FLOW AND IS STRICTLY FOR MAIN CHANNEL.
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9372.88 1716.21 9458.51 1711.05 9485.84 1708.21 9544.18 1708.21  9597.5 1707.46
 9679.17 1706.81 9739.84 1706.21 9877.04 1706.21    9893 1702.89 9936.69 1702.21
 10037.7 1702.2110047.62 1704.6110063.16 1706.21   10073 1706.2110247.95 1706.21
10301.08 1706.71   10383 1706.7110455.69  1710.511541.69  1710.511616.42 1710.65
11696.98 1712.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9372.88    .045 9877.04     .04   10073    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9877.04   10073              429   429.4     429             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.39

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10621.24 and 11645.05 by raising the elevation to
             1706.11.  This elevation is from the cross section profiles,
             rather than the grading drawing.  The grading drawing shows the
             elevatio

4-8-99: RIGHT FP ET CHANGED FROM 11369 TO 10508


Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9116.73 1711.31 9167.22 1710.21    9190 1710.21 9326.23 1707.99 9403.55 1706.21
 9430.65 1706.21  9471.2 1705.33 9555.58 1704.95  9664.9  1705.2 9710.74 1705.61
 9779.45 1704.11 9887.09 1702.21    9893 1698.05 9898.69 1698.21 9920.72 1698.21
 9928.58 1700.21 9951.05 1696.21  9973.4 1696.21 9991.02 1698.2110057.52 1700.21
10099.04 1700.2110111.87 1698.2110131.69 1698.2110144.53 1702.2110170.78 1702.21
   10179 1701.5110195.61 1700.21 10231.6 1702.2110316.97 1702.3710463.14 1702.98
```

```
   10508 1702.9810621.24 1706.1111622.56 1706.1111645.05 1706.1111673.91 1705.15
11732.23  1705.1 11786.9 1705.6111887.47 1705.1111960.19 1705.4112035.23 1704.99
12058.85 1704.39

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9116.73    .055 9326.23    .045 9887.09     .0410144.53    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9887.0910144.53              465     500     530             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9116.73    9731           1136912058.85
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
11637.2912088.76 1706.26

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.3

INPUT
Description: Modified geometry to include changes by Tramonto development. To
             the right on station 10584.84 raised elevations to
             1702.4

4-8-99: RIGHT FP ET CHANGED FROM 11686 TO 10590, LEFT FP
             ET CHANGED FROM 9451 TO 9568
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9322.93 1704.81 9419.22 1704.21 9448.82 1704.11 9534.19 1701.51 9566.96 1700.21
 9598.26 1700.21 9656.94 1698.21 9720.94 1698.21 9761.09 1697.56 9881.54 1698.21
 9933.98 1697.23 9946.95 1696.21 9962.55 1692.21    9970 1692.2110031.21 1692.21
10063.76 1694.2110074.95 1696.2110119.18 1696.21   10156 1697.4110169.28 1697.91
10277.48 1698.2110295.67 1696.2110308.57 1696.3110327.84 1698.2110437.49 1698.21
10523.21 1700.2110569.87 1700.5110584.84  1702.412183.66  1702.4

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9322.93    .045 9933.98     .0410074.95     .0710437.49    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9933.9810074.95              630   644.4     580             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.18

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10749.27 elevatio from 1694.71 to 1696.01, 11408.6
             and 11794.13, and 12285.64 and 12352.81, added vertical wall on
             RHS

4-8-99: RIGHT FW ET CHANGED FROM 10672 TO 10668, RIGHT FP
             ET CHANGED FROM 10839 TO 10710, LEFT FP ET CHANGED FROM 9590 TO.
             9746
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9493.99 1700.01 9664.32 1697.27 9715.97 1695.77 9779.51 1694.21 9808.56 1692.26
 9845.85 1693.41 9935.01  1692.7 9963.19 1692.21    9978 1688.95 9990.45 1686.21
10011.48 1686.21 10053.3 1690.2110123.73 1690.2110145.22  1687.510162.51 1686.21
10206.89 1688.2110244.97 1688.21   10254 1689.5610284.66 1694.2110342.46 1696.21
10386.32 1695.6110446.24 1695.3110516.41 1694.21 10575.4 1693.9810655.64 1693.27
10749.27 1696.0110806.19 1696.0110933.46 1695.9310997.29 1696.2111083.48 1696.11
11089.79 1696.3111108.75 1696.7111237.26 1695.8411322.92 1695.01 11408.6 1693.91
11794.13 1694.1111930.31 1694.7812034.58 1695.7112115.02 1696.1112238.17 1695.91
12285.64 1696.1112352.81 1696.6112381.62 1696.1112395.49 1696.8112435.45 1696.29
 12500.3 1696.9112576.83 1698.21 12621.6 1698.41 12621.7    1700

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9493.99    .055 9963.19     .04 10053.3     .0710123.73     .0410284.66    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9963.19 10053.3              610   600.8     510             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   11108 12621.7

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.06
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```
INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10572.12 and 10928.08, 11414.59 and 11790.8,
             12092.7 and 12200.38

4-8-99: RIGHT FW ET CHANGED FROM 10513 TO
             10490, RIGHT FP ET CHANGED FROM 10899 TO 10513, LEFT FP ET CHANGED
             FROM 9451 TO 9533
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9443.14 1694.16 9475.62 1690.21 9497.53 1690.21 9557.26 1688.21 9581.93 1684.21
 9621.41 1682.52 9643.26 1686.21 9763.42 1686.21 9806.79 1684.21 9929.44 1684.21
    9947 1682.89 9963.19 1681.71 9982.51 1680.21 9988.59 1682.21 10002.5 1682.21
10029.28 1678.2110052.12 1678.2110064.34 1684.6910069.46 1686.21   10090 1688.11
10122.23 1689.2110215.28 1689.5110336.61 1688.2110396.62 1688.3110487.99 1688.01
10511.72 1688.2110522.16 1687.6110572.12 1691.1910928.08 1691.1911030.08 1690.75
11081.08 1691.1111116.85 1691.11 11217.9 1690.6111307.94 1690.6111414.59 1690.26
 11790.8 1690.0511846.52 1690.2211921.73 1691.8111976.53 1691.8112032.71 1690.41
12064.67 1690.66 12092.7 1689.4912200.38 1689.6512313.66  1691.612385.08 1691.71
12479.24 1691.2112605.82 1692.31

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9443.14     .07 9557.26     .04 9643.26     .07 9929.44     .04   10090    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9929.44   10090              630     566     440              .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
 11976.512605.82

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 16.96

INPUT
Description: GR DATA FOR SECTIONS 16.96 TO 17.95 IS BASED UPON ONE-FOOT MAPPING
             FROM CARTER-BURGESS DIGITAL TERRAIN MODEL. DATE:2-24-99
GR
             ELEVATIONS FOR SEC 16.96 TO 17.95 ARE BASED UPON CITY OF PHOENIX
             DATUM. MONTGOMERY -WATSON GR DATA ARE BASED UPON NGVD 1927 DATUM.
             THE GR DATA FOR SEC 16.96-17.95 ARE RAISED BY .21FT ON THE X1 CARD
             FOR CONVERSION TO THE NGVD 1927 DATUM
LEFT ET CHANGED FROM
             9889,9506 TO 9914 FOR BOTH FP AND FW
4-8-99: RT FW ET CHANGED
             FROM 10450 TO 10389, RT FP ET CHANGED FROM 11080 TO 10408
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9129.37    1690 9149.96    1688 9170.63    1686 9181.22    1686 9250.38    1686
 9268.83    1684 9340.93    1682 9373.32    1682 9420.61    1682 9430.52    1680
 9497.31    1678 9533.08    1678  9666.5    1678 9733.21    1678 9746.83    1680
 9756.14    1682 9764.36    1684 9771.22    1684 9781.57 1683.06 9807.96 1678.71
 9870.41 1678.21 9902.01 1678.21 9929.31 1684.21    9932 1684.21 9947.83 1684.21
    9966 1678.21 9988.98 1677.9210007.22 1676.2110075.82 1676.2110134.07 1679.61
10257.04 1680.11 10270.3 1682.6510282.57 1683.1210307.33  1684.5   10342 1684.91
10383.59 1685.4110435.94 1685.8110503.13  1684.810601.12 1684.7110660.64 1685.21
 10704.2 1685.3510830.52 1686.06 10864.9 1686.8110909.44 1688.7110920.87 1688.91
10970.87 1688.67 11018.3 1688.4211061.63 1688.6111137.84 1688.1111246.93 1688.11
11567.48 1687.4411645.69 1686.9811668.64 1686.3111730.35 1685.2111795.39 1682.91
 11904.8 1683.3211972.35 1683.8112221.54 1684.9112302.92 1685.5112482.15 1686.41
12553.87 1686.2212583.61 1686.4412619.86 1686.01

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9129.37     .07 9947.83     .0410307.33    .04510435.94    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9947.8310307.33              410   456.2     600              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 9129.37 9942.53  1689.6
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   1108012619.86

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 16.87

INPUT
Description: Bridge deck low chord and channel bed elevations are based on
             survey data by ASL Consulting (12-07-00) and JEFuller (date),
```

respectively.

Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9328.22	1687	9385.7	1685.7	9402.02	1685.5	9468.73	1684.7	9536.14	1683.5
9597.17	1683.4	9654.65	1683.2	9701.49	1683.3	9755.42	1684.5	9832.07	1685.6
9855.48	1685.7	9876.77	1671.37	9890.91	1673.51	9905.05	1673.94	9919.2	1673.14
9933.34	1673.08	9947.48	1672.74	9961.62	1672.71	9975.76	1672.58	9989.91	1672
10004.05	1671.48	10018.19	1671.41	10032.33	1671.16	10046.48	1671.08	10060.62	1670.99
10074.76	1671.22	10088.9	1670.67	10103.04	1670.25	10114.36	1669.95	10152.83	1685.8
10172.7	1685.6	10235.86	1685.2	10311.79	1683.11	10383.46	1681.71	10442.37	1679.9
10503.4	1679.71	10553.78	1679.7	10599.2	1679.51	10664.49	1679.91	10719.84	1679.6
10812.8	1679.91	10863.19	1680.1	10908.61	1679.71	10980.28	1679.21	11031.38	1678.8
11080.34	1678.61	11130.73	1678.1	11189.63	167	811232.92	1677.71	11302.46	1677.8
11363.49	1678.21	11403.23	1678.41	11458.58	1678.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9328.22	.045	9855.48	.041	10152.83	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9855.48	10152.83	146	146	146	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9328.22	9851.87	1685.69	10153.41	11458.58	1685.81

BRIDGE RIVER: RIVER-1
REACH: Reach-1 RS: 16.865

INPUT
Description: Carefree Highway Bridge

Distance from Upstream XS = 1
Deck/Roadway Width = 144
Weir Coefficient = 2.7
Bridge Deck/Roadway Skew = 0
Upstream Deck/Roadway Coordinates
num= 54

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9328.22	1687	1670	9365.2	1686.75	1670	9395.1	1686.19	1670
9430.6	1685.65	1670	9466.1	1685.23	1670	9501.6	1684.93	1670
9537.1	1684.75	1670	9539.9	1684.74	1670	9572.6	1684.7	1670
9608.1	1684.77	1670	9643.6	1684.96	1670	9679.1	1685.27	1670
9714.6	1685.71	1670	9825.3	1687.25	1670	9855.2	1687.64	1670
9857.9	1687.68	1670	9857.9	1687.68	1670	9860.6	1690.18	1670
9860.6	1690.2	1680.84	9893.4	1690.5	1681.16	9928.9	1690.77	1681.23
9964.4	1690.93	1681.33	9999.9	1690.98	1681.26	10002.7	1690.98	1681.27
10035.4	1690.94	1681.13	10070.9	1690.8	1680.84	10106.4	1690.55	1680.57
10141.9	1690.2	1680.12	10141.9	1690.18	1670	10142.1	1687.68	1670
10174.7	1687.25	1670	10272.6	1685.47	1670	10277	1685.39	1670
10312.5	1684.78	1670	10348	1684.21	1670	10383.5	1683.69	1670
10419	1683.21	1670	10454.5	1682.78	1670	10490	1682.4	1670
10505.5	1682.24	1670	10525.5	1682.06	1670	10561	1681.77	1670
10596.5	1681.53	1670	10632	1681.33	1670	10667.5	1681.18	1670
10703	1681.08	1670	10738.5	1681.02	1670	10827	1680.94	1670
10914.3	1680.86	1670	11001.7	1680.34	1670	11059.9	1680	1670
11147.3	1679.48	1670	11234.6	1679.42	167	011458.58	1678.3	1670

Upstream Bridge Cross Section Data
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9328.22	1687	9385.7	1685.7	9402.02	1685.5	9468.73	1684.7	9536.14	1683.5
9597.17	1683.4	9654.65	1683.2	9701.49	1683.3	9755.42	1684.5	9832.07	1685.6
9855.48	1685.7	9876.77	1671.37	9890.91	1673.51	9905.05	1673.94	9919.2	1673.14
9933.34	1673.08	9947.48	1672.74	9961.62	1672.71	9975.76	1672.58	9989.91	1672
10004.05	1671.48	10018.19	1671.41	10032.33	1671.16	10046.48	1671.08	10060.62	1670.99
10074.76	1671.22	10088.9	1670.67	10103.04	1670.25	10114.36	1669.95	10152.83	1685.8
10172.7	1685.6	10235.86	1685.2	10311.79	1683.11	10383.46	1681.71	10442.37	1679.9
10503.4	1679.71	10553.78	1679.7	10599.2	1679.51	10664.49	1679.91	10719.84	1679.6
10812.8	1679.91	10863.19	1680.1	10908.61	1679.71	10980.28	1679.21	11031.38	1678.8
11080.34	1678.61	11130.73	1678.1	11189.63	167	811232.92	1677.71	11302.46	1677.8
11363.49	1678.21	11403.23	1678.41	11458.58	1678.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9328.22	.045	9855.48	.041	10152.83	.045

```
Bank Sta: Left   Right    Coeff Contr.   Expan.
       9855.4810152.83             .3        .5
Ineffective Flow     num=        2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9328.22 9851.87 1685.69 10153.411458.58 1685.81

Downstream  Deck/Roadway Coordinates
    num=      54
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9330.09    1687    1670  9365.2 1686.75    1670  9395.1 1686.19    1670
  9430.6 1685.65    1670  9466.1 1685.23    1670  9501.6 1684.93    1670
  9537.1 1684.75    1670  9539.9 1684.74    1670  9572.6  1684.7    1670
  9608.1 1684.77    1670  9643.6 1684.96    1670  9679.1 1685.27    1670
  9714.6 1685.71    1670  9825.3 1687.25    1670  9855.2 1687.64    1670
  9857.9 1687.68    1670  9857.9 1687.68    1670  9860.6 1690.18    1670
  9860.6  1690.2 1680.84  9893.4  1690.5 1681.16  9928.9 1690.77 1681.23
  9964.4 1690.93 1681.33  9999.9 1690.98 1681.26 10002.7 1690.98 1681.27
 10035.4 1690.94 1681.13 10070.9  1690.8 1680.84 10106.4 1690.55 1680.57
 10141.9  1690.2 1680.12 10141.9 1690.18    1670 10142.1 1687.68    1670
 10174.7 1687.25    1670 10272.6 1685.47    1670   10277 1685.39    1670
 10312.5 1684.78    1670   10348 1684.21    1670 10383.5 1683.69    1670
   10419 1683.21    1670 10454.5 1682.78    1670   10490  1682.4    1670
 10505.5 1682.24    1670 10525.5 1682.06    1670   10561 1681.77    1670
 10596.5 1681.53    1670   10632 1681.33    1670 10667.5 1681.18    1670
   10703 1681.08    1670 10738.5 1681.02    1670   10827 1680.94    1670
 10914.3 1680.86    1670 11001.7 1680.34    1670 11059.9    1680    1670
 11147.3 1679.48    1670 11234.6 1679.42    167011444.85  1678.3    1670

Downstream Bridge Cross Section Data
Station Elevation Data    num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9330.09  1686.9 9398.22  1685.4 9459.25  1684.6  9507.5  1684.1 9571.37  1683.3
 9633.11  1683.3 9680.66  1683.5 9716.85  1684.2 9767.23  1684.9 9809.81  1685.7
 9850.97    1686 9877.23 1671.45 9897.37 1671.29 9905.51 1671.92 9919.66 1671.98
  9933.8 1672.52 9947.94 1672.76 9962.08 1672.81 9976.22 1672.58 9990.37 1672.08
10004.51 1671.4410018.65  1671.310032.79 1671.2810046.94 1670.5410061.08 1671.17
10075.22 1670.7610089.36 1670.59 10103.5 1670.6110116.59 1670.8110118.51  1671.2
10149.03  1685.910202.96  1685.310254.76  1684.310312.25  1683.210371.15  1681.8
10386.76  1681.410439.98  1679.710491.79  1679.5 10544.3  1679.410589.01  1679.4
10643.65  1679.510696.88  1679.710742.29  1679.910792.68  1680.310838.81  1679.8
 10882.8    1680 10948.8  1679.711005.57  1679.411057.38  1679.311106.34    1679
 11161.7  1678.711215.63  1678.411267.43  1678.311325.63  1678.111371.75  1678.4
11444.85  1678.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9330.09    .045 9850.97     .0410149.03    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9850.9710149.03             .3        .5
Ineffective Flow     num=        2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9330.09 9850.97    168610149.0311444.85  1685.9

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         = 1688.08
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Piers =  3

Pier Data
Pier Station     Upstream= 9928.97    Downstream= 9928.97
Upstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78
Downstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78

Pier Data
Pier Station     Upstream=   10000    Downstream=   10000
Upstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78
Downstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78
```

```
Pier Data
Pier Station     Upstream=10071.03    Downstream=10071.03
Upstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78
Downstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum                Cd   =    1.33
       Yarnell                 KVal =    1.05
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =       .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 16.86

INPUT
Description: Bridge deck low chord and channel bed elevations are based on
             survey data by ASL Consulting (12-07-00) and JEFuller (date),
             respectively.
Station Elevation Data     num=       56
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
 9330.09   1686.9 9398.22   1685.4 9459.25   1684.6   9507.5   1684.1 9571.37   1683.3
 9633.11   1683.3 9680.66   1683.5 9716.85   1684.2 9767.23   1684.9 9809.81   1685.7
 9850.97     1686 9877.23 1671.45 9897.37 1671.29 9905.51 1671.92 9919.66 1671.98
  9933.8 1672.52 9947.94 1672.76 9962.08 1672.81 9976.22 1672.58 9990.37 1672.08
10004.51 1671.4410018.65  1671.310032.79 1671.2810046.94 1670.5410061.08 1671.17
10075.22 1670.7610089.36 1670.59 10103.5 1670.6110116.59 1670.8110118.51  1671.2
10149.03  1685.910202.96  1685.310254.76  1684.310312.25  1683.210371.15  1681.8
10386.76  1681.410439.98  1679.710491.79  1679.5 10544.3  1679.410589.01  1679.4
10643.65  1679.510696.88  1679.710742.29  1679.910792.68  1680.310838.81  1679.8
 10882.8     1680 10948.8  1679.711005.57  1679.411057.38  1679.311106.34    1679
 11161.7  1678.711215.63  1678.411267.43  1678.311325.63  1678.111371.75  1678.4
11444.85  1678.2

Manning's n Values         num=        3
     Sta   n Val      Sta   n Val      Sta   n Val
 9330.09    .045 9850.97     .0410149.03    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9850.9710149.03            888.2   879.1   778.2              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9330.09 9850.97    168610149.0311444.85  1685.9

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 16.68

INPUT
Description:
Station Elevation Data     num=       51
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
    9880   1682.1     9916   1676.2     9928   1673.5     9950   1662.9     9956   1662.6
    9964   1666.6     9989   1666.2    10000   1662.3    10009   1662.8    10020   1662.7
   10025   1664.5    10043   1665.2    10076   1665.3    10100   1664.9    10107   1662.9
   10120   1662.9    10135   1661.5    10142   1665.1    10161   1665.4    10168   1664.6
   10183   1664.2    10192   1664.5    10218   1663.7    10230   1662.3    10247   1661.7
   10262   1662.9    10302   1664.5    10308     1664    10353   1663.9    10390     1664
   10437   1663.6    10463   1663.5    10470   1662.9    10479   1663.5    10511   1662.7
   10530   1661.8    10540   1661.3    10553   1661.3    10569   1662.3    10590   1666.8
   10612   1675.2    10641   1674.8    10677   1675.2    10718   1675.4    10765   1675.4
   10821   1675.3    10870   1675.4    10900   1675.6    10938   1675.6    10964     1676
   11005     1676
```

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9880	.07	9989	.04	10025	.045	10100	.04	10142	.055
10218	.045	10302	.055						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9989	10025	940	997.5	1160	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.49

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9520	1667.1	9583	1667.6	9619	1667.4	9661	1665.7	9708	1665.1
9776	1664.9	9808	1664.1	9841	1661.9	9871	1661.5	9888	1659.1
9906	1659.2	9925	1653.7	9933	1653.9	9961	1653.8	10000	1653.3
10018	1654.5	10040	1658.6	10066	1658.9	10073	1658.1	10095	1657.8
10104	1659.1	10130	1659.5	10147	1653.7	10168	1654	10211	1653.7
10224	1655.7	10234	1655.2	10246	1655.3	10253	1656.7	10285	1657.7
10316	1658.8	10335	1659.1	10371	1658.9	10413	1657.8	10420	1656.7
10428	1657.4	10438	1657.6	10446	1656.8	10465	1657.6	10485	1659.8
10512	1662.4	10532	1663.3	10582	1664	10619	1664.5	10669	1664.7
10742	1664.8								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9520	.055	9906	.04	10040	.07	10130	.04	10224	.045
10371	.055								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9906	10040	1190	1153.6	1150	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.27

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9044	1655.1	9106	1655.3	9139	1655.6	9198	1655.9	9247	1656.1
9283	1656.3	9326	1655.9	9357	1654.9	9394	1652.7	9404	1650.9
9443	1650.4	9466	1650.5	9508	1650.7	9529	1648.7	9539	1648.6
9553	1646.7	9572	1648.2	9588	1647.6	9600	1648.6	9623	1647.5
9643	1649	9667	1650.5	9682	1650.2	9700	1650.3	9724	1649.6
9760	1650.2	9771	1648.3	9798	1647.7	9816	1646.1	9835	1647.3
9853	1647.9	9872	1649.6	9892	1649.9	9905	1648.8	9915	1648.9
9923	1648.4	9947	1648.9	9967	1643.5	9990	1642.4	10000	1639.4
10009	1639.8	10032	1640	10045	1654.9	10052	1655.9	10111	1656
10158	1656.2	10207	1656.4	10255	1656.4	10316	1656.5	10391	1656.1

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9044	.045	9508	.055	9667	.045	9872	.055	9947	.04
10045	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9947	10045	400	422.1	425	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.19

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9011	1652	9072	1652.5	9131	1652.6	9193	1652.8	9235	1652.7
9260	1651.8	9281	1649.9	9326	1647.9	9377	1645.6	9385	1644.7
9392	1645.2	9431	1646.1	9457	1646.6	9500	1646.3	9506	1645.4
9515	1646.3	9539	1646.3	9548	1645.2	9556	1645.8	9574	1645.2
9600	1643.7	9613	1641.7	9624	1640.9	9639	1641.8	9652	1641.7
9664	1642.7	9687	1642.9	9695	1642.4	9709	1642.5	9730	1644.9
9760	1646.3	9781	1646.9	9807	1647.2	9817	1646.2	9833	1645.8
9855	1646.5	9881	1646.9	9907	1644.9	9934	1644.4	9950	1643.9
9966	1638.9	9981	1639.7	10000	1637.5	10018	1637.8	10034	1637.9
10048	1639.1	10077	1652	10101	1652.8	10139	1653.2	10192	1653.3
10245	1653	10291	1652.7	10341	1652.4	10389	1652.2		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9011	.045	9600	.055	9730	.045	9950	.04	10077	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10077	540	645.6	660	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.07

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9258	1648.3	9327	1648.3	9384	1648.3	9446	1648.1	9494	1648
9536	1647.3	9578	1646.8	9614	1645.7	9631	1644.4	9648	1641.8
9701	1641.5	9720	1641.1	9734	1638.4	9750	1637.8	9760	1639.7
9781	1637.5	9791	1639.3	9822	1639.5	9854	1638.8	9877	1638.8
9884	1639.4	9902	1640.1	9948	1640.1	9974	1638.8	9986	1634.8
10000	1634.3	10037	1634.7	10044	1635.4	10071	1636.2	10089	1636.3
10105	1635.5	10113	1635.5	10130	1643.3	10166	1644.3	10196	1645.7
10222	1646.5	10267	1646.6	10315	1646.7	10350	1646.2	10392	1645.8
10433	1645.6	10494	1645.5						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9258	.035	9760	.055	9974	.04	10130	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974	10130	980	950.3	840	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.89

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9095	1636.6	9172	1637	9243	1636.9	9312	1637.2	9359	1637.1
9398	1637.6	9428	1638.1	9460	1637.5	9490	1634	9517	1630.6
9522	1631.6	9539	1631.8	9550	1631.4	9571	1631.6	9626	1632.6
9676	1633.3	9714	1633.4	9744	1632.5	9775	1631.7	9809	1630.9
9818	1629.2	9822	1629.2	9831	1630.6	9850	1631.6	9866	1632.4
9887	1632.6	9901	1632.1	9919	1636.5	9934	1635.9	9949	1633.3
9969	1633.2	9981	1632.2	10000	1626.9	10011	1627	10018	1628.2
10035	1627.9	10056	1626.8	10068	1626.8	10096	1630.8	10121	1630.7
10172	1631.1	10182	1630.2	10194	1630.1	10210	1633.5	10224	1635.6
10243	1636.1	10296	1636.9	10337	1637	10370	1637.2	10414	1637.1
10440	1636.4	10469	1636.4	10477	1635.7	10492	1636.7	10535	1636.9
10578	1637.6	10598	1637.2	10621	1637.2				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9095	.045	9969	.04	10096	.055	10224	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969	10096	700	738.4	730	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.75

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9040	1633.1	9098	1633.1	9146	1632.7	9185	1632	9268	1632
9319	1631.5	9364	1630.5	9404	1630.7	9431	1629.9	9467	1626.7
9481	1626.1	9500	1624.3	9515	1624.3	9534	1623.4	9549	1619.5
9557	1619.5	9566	1622.4	9580	1624.1	9602	1624.8	9637	1625.6
9689	1626.1	9712	1626	9736	1625	9751	1625.4	9769	1627.1
9816	1628.7	9835	1628.8	9850	1627.8	9875	1628	9933	1628.6
9944	1627.2	9963	1626.9	9967	1626.1	9977	1625.7	10000	1619.8
10015	1620.1	10027	1621.2	10050	1621.5	10070	1616.7	10079	1616.3
10102	1627.5	10116	1627.9	10121	1627.5	10138	1628.4	10174	1629.3
10210	1630.3	10259	1631.2	10307	1631.4	10370	1631.7	10411	1631.7

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9040	.035	9534	.04	9580	.045	9977	.04	10102	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977	10102	880	1048.4	1030	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.55

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9645	1628	9680	1627.1	9703	1626.7	9731	1626.5	9761	1626.1
9790	1625.3	9822	1623.7	9835	1622.3	9858	1618.7	9869	1619.5
9906	1619.7	9935	1619.5	9954	1618.8	9972	1615.4	9982	1615.3
9991	1613.8	10000	1613.9	10030	1614.7	10057	1615.2	10078	1614.9
10093	1613.4	10104	1614.5	10126	1617.5	10147	1619.4	10184	1620.5
10222	1620.7	10247	1620.5	10266	1620.2	10278	1619.4	10314	1618.9
10326	1619.4	10343	1620	10368	1624.2	10381	1625	10410	1625.1
10453	1625.3	10483	1625.2	10525	1625.1	10531	1625		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9645	.035	9954	.04	10147	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9954	10147	730	755.3	550	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.41

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9542	1618	9643	1618.6	9676	1618.9	9683	1620.7	9694	1619
9751	1619.4	9787	1619.7	9830	1620	9867	1619.2	9907	1619.4
9940	1619.7	9968	1618.7	9979	1615.1	9993	1609.8	10000	1609.2
10009	1608.3	10021	1607.6	10027	1609.7	10043	1610.4	10053	1610.4
10058	1611.1	10070	1612.8	10077	1613.1	10085	1611.8	10096	1612
10106	1610.1	10113	1611.9	10124	1613	10135	1613	10157	1612.5
10178	1611.8	10194	1612	10212	1610.2	10221	1610.9	10245	1610.4
10257	1609.6	10282	1609.4	10297	1608.7	10310	1610.1	10324	1611
10333	1611	10353	1614.7	10383	1618.6	10403	1620.1	10426	1620.5
10440	1621.2	10464	1619.6	10479	1617.9	10496	1618.1	10517	1619.3
10534	1620	10569	1621	10607	1622	10642	1622.6	10678	1622.9
10732	1623	10769	1623.1						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9542	.035	9968	.04	10070	.055	10333	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968	10070	980	968.9	950	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9542	9940	1619.7

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.22

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9749	1612	9816	1611.9	9893	1611.1	9937	1610.5	9977	1609.1
9996	1599.9	10000	1599.4	10022	1599.2	10041	1598.9	10057	1602.7
10077	1605.6	10091	1606.6	10113	1606.1	10126	1606.8	10151	1607.7
10166	1607.9	10191	1606.7	10210	1606	10234	1606.8	10242	1605.9
10249	1606.2	10260	1604.1	10269	1605.4	10282	1605.1	10301	1602
10310	1601.5	10327	1601.9	10348	1607.8	10374	1608.2	10413	1608
10439	1607.9	10461	1604.5	10480	1607.3	10507	1607.9	10527	1609.1
10570	1611	10605	1612.3	10657	1613.6	10672	1613.8	10708	1613.4
10752	1613.6	10797	1614.3	10850	1615.1				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9749	.035	9977	.04	10091	.055	10282	.04	10348	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977	10091	535	553.1	600	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.12

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9503	1606.8	9545	1606.7	9620	1606.5	9665	1606.2	9703	1605.5
9754	1604.5	9762	1603.8	9792	1604.4	9836	1603.5	9865	1603.5
9886	1602.9	9903	1603.3	9928	1603.9	9975	1604.1	10000	1596.3
10009	1596.9	10015	1596.4	10032	1596.7	10059	1595.8	10070	1600.2
10087	1601.3	10109	1601.7	10130	1602.2	10144	1602.4	10156	1601.5
10176	1602.1	10205	1602.1	10213	1601.7	10230	1602.2	10258	1602.8
10282	1595.4	10302	1596.7	10319	1597.2	10351	1601.5	10370	1600.3
10378	1601.1	10387	1601.1	10417	1603.1	10441	1603.4	10480	1603.1
10493	1602.9	10513	1603.8	10532	1604.1	10546	1606.5	10564	1606.1
10587	1607.2	10621	1608.2	10657	1609.1	10716	1609.8	10769	1610.4
10822	1610.7								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9503	.035	9975	.04	10087	.055	10258	.04	10351	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975	10087	255	283.6	330	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.06

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9663	1606.6	9685	1606.5	9707	1605.7	9733	1603	9751	1599.7
9759	1599	9764	1599.5	9782	1600.1	9800	1600.6	9836	1600.6
9872	1601.4	9917	1602.1	9972	1602.2	9988	1597.9	10000	1593
10010	1591.5	10020	1591.3	10043	1594.5	10060	1593.9	10070	1595.3
10089	1597.5	10109	1598	10126	1597.8	10138	1595.7	10152	1596.7
10174	1600.2	10205	1600.1	10229	1593.4	10246	1593.7	10268	1596.4
10283	1596.6	10298	1597.3	10314	1597.8	10323	1597.1	10337	1598.4
10350	1597.4	10367	1600	10390	1601.4	10411	1601.3	10441	1599.6
10453	1595.7	10470	1600.3	10480	1600.7	10495	1602.7	10517	1603.6
10549	1605.1	10581	1606	10621	1606.6	10667	1606.9	10713	1607.1
10776	1607.2								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9663	.045	9972	.04	10089	.055	10205	.04	10268	.045
10441	.04	10470	.035						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10089	670	930.3	950	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.89

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9234	1601.5	9270	1601.3	9318	1599.7	9337	1598.4	9377	1597.4
9406	1597	9434	1596.9	9460	1597.5	9477	1598.4	9494	1598.5
9511	1597	9549	1595.3	9572	1593.2	9577	1593.5	9587	1590.8
9606	1591.2	9626	1591	9633	1592	9659	1593	9671	1592.7
9683	1593.5	9702	1593.6	9714	1592.4	9741	1592.5	9775	1592.4
9804	1592.7	9817	1591.3	9847	1591.4	9869	1591.8	9890	1592.2
9906	1593	9927	1592.5	9938	1591.9	9949	1589.9	9956	1589.9
9979	1587.2	9995	1583.3	10000	1583.2	10013	1583.3	10032	1583.8
10042	1588	10059	1596.4	10087	1597.2	10101	1598.2	10141	1599.3
10186	1599.6	10236	1600.2	10284	1600.4	10319	1600.5		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9234	.035	9577	.055	9633	.045	9938	.04	10059	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9938	10059	700	756.4	760	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.74

INPUT
Description: CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW

Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9253	1594.6	9384	1594.6	9435	1593.5	9495	1592.2	9526	1591.7
9540	1590.5	9564	1589.6	9615	1589.3	9650	1589	9663	1587.4
9705	1587.4	9720	1587	9769	1588.5	9791	1588.3	9809	1587.1
9837	1586.1	9853	1585.5	9871	1585.1	9891	1585.5	9917	1584.9
9952	1585	9976	1587.3	9988	1581.8	10000	1581.8	10024	1582.1
10057	1581.7	10076	1588.3	10095	1588.3	10125	1590.2	10145	1591
10172	1591.6	10203	1591.5	10225	1591.5	10248	1591.6	10375	1591.7
10635	1592	10690	1592.6						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9253	.035	9650	.055	9769	.035	9976	.04	10076	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976	10076	1180	1070.9	970	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.54

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8984	1584.8	9072	1584.8	9160	1584.7	9220	1584.7	9283	1584.9
9355	1584.7	9421	1584.5	9499	1584.2	9525	1583.8	9546	1583.4
9563	1583.7	9621	1583.4	9683	1583.8	9715	1583	9741	1583.4
9767	1582.9	9798	1583.5	9818	1583.9	9845	1584.2	9892	1584
9926	1583.2	9950	1581.9	9970	1574.4	9986	1574	10000	1571.6
10045	1576.7	10066	1574.9	10080	1577.8	10110	1579.5	10136	1577.7
10153	1578.5	10177	1578.1	10199	1576.3	10222	1576.9	10259	1576.6
10273	1577.7	10287	1577.7	10306	1578.9	10354	1578.4	10384	1578.1
10410	1577	10416	1578.1	10428	1578.3	10437	1577.7	10458	1580.1
10480	1583	10495	1583.8	10523	1584.2	10556	1584.8	10588	1585
10623	1584.4	10669	1583.5	10695	1583.4	10738	1583.4	10762	1583.8
10808	1584.1	10821	1583.9	10881	1583.9	10936	1584.2	10999	1584.2
11072	1584.2	11131	1584.3	11205	1584.1	11269	1584.2	11381	1584.9

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8984	.035	9950	.04	10110	.055	10177	.07	10306	.055
10495	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10110	1410	1273.2	1150	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.3

INPUT
Description: The following GR record has been modified as per discussion with the FEMA technical evaluator. From station 8450 to station 9500, the elevations are read from the topographic map. From station 9563 to station station 11361, the elevations remain the same as provided by the Aerial Mapping Company, Inc (AMCI) (March 17, 1998).
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8450	1576.2	8550	1575.9	8650	1574.1	8750	1573.7	8850	1573.5
8950	1573.4	9050	1573.3	9150	1572.5	9250	1572.5	9350	1571.9
9450	1571.9	9500	1573.5	9563	1573.8	9626	1574.2	9652	1573.5
9672	1573.1	9707	1573.8	9731	1573.7	9769	1573.8	9788	1573.2
9836	1573.2	9878	1572.9	9906	1572.4	9923	1571.6	9941	1570.4
9961	1565.1	9967	1565.2	9973	1560	9983	1560.3	10000	1559.6
10011	1566.5	10027	1570	10045	1570.1	10052	1569.4	10062	1570.1
10097	1571	10131	1571.2	10157	1571.1	10191	1572.5	10211	1572.9
10251	1572.6	10297	1572.3	10351	1572.5	10386	1572.2	10410	1571.8
10417	1572.1	10437	1571.7	10448	1571.7	10480	1571.5	10515	1571.6
10552	1572.7	10571	1572.9	10608	1572.7	10642	1572.4	10681	1571.4
10735	1571.6	10765	1571.9	10792	1572	10804	1571.2	10811	1571.8
10852	1573.2	10899	1575.9	10931	1577.1	10967	1577.9	10992	1578.4
11034	1578.7	11096	1578.6	11179	1578.4	11233	1578.2	11273	1577.7
11295	1582.1	11336	1582.8						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8450	.045	9923	.04	10027	.045	10681	.07	10852	.035

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff Contr.	Expan.
	9923	10027		1010	1213.6	1210	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.07

INPUT
Description: CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW

Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8530	1565.4	8652	1564	8685	1562	8705	1560.7	8805	1560.7
8920	1562	9043	1562.4	9116	1562.8	9185	1563.1	9201	1562.8
9250	1562.8	9286	1563.3	9321	1563.7	9353	1563.4	9394	1562.5
9417	1561.5	9462	1561.4	9530	1562.3	9554	1562.4	9566	1562
9614	1562	9680	1562.3	9746	1563.1	9814	1563.6	9855	1564
9879	1564.3	9898	1560.9	9904	1561.4	9924	1558.5	9938	1558.9
9959	1558.9	9972	1557.5	9978	1557.5	10000	1558.5	10020	1562
10040	1562.6	10059	1564.5	10077	1564	10125	1563.5	10151	1563.1
10166	1562.6	10176	1562.7	10201	1562.2	10217	1563.1	10249	1563
10300	1563.1	10338	1563	10381	1563.2	10396	1563.1	10404	1562.3
10408	1563.1	10454	1563.1	10499	1563.1	10516	1564.1	10571	1565.5
10608	1566	10656	1565.9	10710	1565.8	10758	1565.6	10813	1564.7
10848	1564.3	10873	1564.8	10923	1565.1	10950	1570	10989	1570.8

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8530	.045	8705	.07	8805	.045	9879	.04	10059	.045
10396	.07	10499	.035						

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff Contr.	Expan.
	9879	10059		1050	1134.1	1100	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10608	10989	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.86

INPUT
Description: CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW

Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8212	1556	8550	1554	8600	1553	8617	1553.4	8685	1552.4
8708	1551.6	8749	1551.5	8759	1550.6	8767	1551.7	8788	1552.1
8817	1551.5	8863	1554.3	8895	1555.1	8908	1555.4	8935	1555.1
8975	1555	9022	1555.5	9072	1556.1	9125	1556.9	9165	1557.1
9223	1557.3	9242	1556.6	9263	1557.3	9298	1557.4	9319	1557
9330	1556.1	9344	1553.5	9379	1552.5	9393	1551.4	9404	1552.9
9416	1552.7	9420	1551.9	9429	1553.3	9446	1553.2	9464	1549.8
9472	1549.3	9494	1549.8	9513	1553	9535	1553.6	9596	1553.4
9605	1552.9	9613	1553.3	9634	1553.5	9666	1553.4	9716	1553.2
9727	1552.5	9739	1553.4	9770	1552.6	9784	1553.6	9803	1553.4
9819	1551.8	9831	1551.2	9842	1552.5	9855	1551.1	9864	1553.3
9885	1553.3	9919	1551.8	9936	1549	9948	1549	9970	1551.6
9983	1550.4	9991	1547.6	10000	1546.3	10009	1551.6	10023	1554.6
10042	1555.7	10083	1555.6	10149	1554.3	10159	1550.9	10171	1552.6
10197	1554.4	10232	1554.7	10271	1556	10327	1557	10379	1557.5
10433	1557.7	10477	1557.5						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8212	.045	8685	.055	8817	.045	9446	.04	9513	.055
9885	.04	10042	.055	10149	.04	10197	.035		

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff Contr.	Expan.
	9885	10042		1060	1049.1	1050	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.66

INPUT
Description:
Station Elevation Data num= 92

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8244	1548.4	8287	1548.9	8335	1549	8352	1548.3	8399	1548.2

8462	1548.3	8514	1548	8594	1547.5	8663	1546.9	8720	1546
8738	1545.8	8780	1544.9	8828	1544.1	8914	1543.6	8917	1543.1
8921	1543.7	8985	1544	9048	1544.6	9086	1545.1	9138	1545.3
9173	1546.1	9234	1546.5	9275	1546.3	9318	1546	9360	1545.7
9383	1545.3	9436	1545.1	9449	1544.5	9457	1545	9467	1544.1
9477	1545.4	9492	1544.9	9512	1543.5	9528	1540.2	9540	1540.5
9550	1542.2	9572	1546.6	9585	1546.4	9600	1542.7	9619	1542.8
9627	1543.3	9643	1542.4	9655	1543.1	9667	1546	9689	1546.6
9709	1546.7	9717	1546.1	9736	1546	9744	1544.6	9753	1546
9775	1545.3	9791	1546.1	9829	1546.1	9852	1547.5	9878	1547.5
9894	1546.7	9941	1546.7	9956	1545.9	9988	1544.6	10000	1542.1
10006	1542.3	10015	1543.9	10055	1543	10063	1543.5	10083	1546.5
10108	1546.6	10119	1546	10133	1547.2	10145	1546.3	10160	1547.2
10177	1546.2	10193	1546.6	10207	1546.1	10246	1546.4	10280	1546.8
10324	1547.3	10357	1547.3	10379	1546.7	10392	1545.6	10408	1543.2
10430	1543.9	10442	1542.9	10465	1542.6	10486	1548.6	10509	1549.3
10557	1549.5	10592	1549.8	10646	1549.9	10686	1549.4	10727	1549.5
10784	1549.4	10846	1549.5						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8244	.045	8828	.055	8985	.045	9477	.04	9667	.055
9941	.04	10083	.055	10357	.04	10486	.035		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9941	10083	500	549.1	540	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.55

INPUT
Description:
Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8416	1544.6	8496	1544.5	8598	1543.9	8689	1543.5	8797	1542.8
8877	1542.2	8929	1541.9	8950	1541.3	8963	1540.3	8985	1539.6
8993	1540.1	9040	1540.1	9081	1539.8	9104	1540.4	9157	1540
9241	1540.8	9311	1541.2	9346	1540.5	9443	1541	9451	1540.2
9464	1541.2	9477	1541	9510	1541.9	9558	1542.7	9592	1543.1
9645	1543.3	9688	1543.1	9715	1541.9	9736	1539.8	9742	1540.1
9757	1538.2	9776	1537.4	9787	1532.2	9804	1535.6	9828	1540.7
9836	1539.7	9855	1541.7	9877	1541.6	9897	1542	9930	1541.4
9965	1541.8	9988	1535.8	10000	1535.2	10010	1538.4	10031	1540.8
10045	1540.9	10054	1540.5	10065	1541.3	10098	1541.2	10123	1541.8
10132	1541.3	10150	1542.7	10176	1541.1	10191	1539.5	10208	1538.7
10219	1537.7	10233	1539.2	10262	1541.4	10270	1541.1	10283	1542
10307	1542.3	10349	1541.4	10370	1537.3	10380	1537.9	10394	1537
10403	1538.6	10432	1541	10456	1542.6	10494	1543	10550	1544.4
10623	1544.5	10680	1545	10743	1545.2	10802	1544.8	10856	1544.6
10907	1544.2	10973	1544.1	10985	1545.1	10993	1545.3		

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8416	.045	8929	.055	9104	.045	9715	.04	9828	.055
9965	.04	10031	.055	10150	.04	10262	.055	10349	.04
10456	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10031	740	787.3	850	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.4

INPUT
Description: Q100 INCREASED FROM 23300,23300 TO 26700,26700 CFS DUE TO UPSTREAM DEVELOPMENT.
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8520	1540	8940	1538	9105	1536	9155	1535	9197	1536
9202	1536.2	9212	1536	9214.5	1535.9	9217	1536	9287	1536.5
9359	1536	9414	1535.5	9474	1536	9641	1537.5	9670	1537.6
9692	1536.4	9719	1534.6	9732	1527.4	9748	1530.8	9770	1532.1
9782	1530	9800	1534.1	9820	1533.9	9840	1535.3	9849	1534.9
9866	1535.8	9908	1536.5	9939	1537.1	9968	1536.9	9980	1535.2
9994	1529	10000	1528.7	10010	1529.7	10033	1534.5	10063	1534.1
10084	1534.3	10102	1534.3	10133	1536	10164	1536.4	10177	1535
10194	1535.9	10209	1535.2	10246	1526.8	10252	1528.5	10269	1529.1
10289	1537.1	10319	1537.5	10361	1536.6	10379	1535.1	10395	1535.3
10422	1536	10447	1535.1	10465	1535.7	10514	1535.8	10539	1535.1
10600	1535	10653	1535.4	10687	1535.5	10726	1535	10744	1534.3
10772	1534.4	10797	1535.1	10833	1534.7	10874	1535.5	10910	1535.5

10944	1535.1	11001	1534.7	11027	1535.1	11043	1539	11070	1538.8
11080	1537.4	11101	1540.1	11142	1539.6				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8520	.045	9670	.04	9800	.045	9968	.04	10033	.055
10209	.04	10289	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968	10033	650	678.6	590	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.28

INPUT
Description: CROSS-SECTION AT WHICH FLOWS TO CAP OVERCHUTES 1 AND 2 RECOMBINE.
WSEL MATCHES AT THIS CROSS-SECTION

Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8217	1536	8297	1534.9	8552	1534.2	8677	1534.3	8812	1534
8979	1532	9107	1530	9165	1529.3	9205	1530	9255	1532
9337	1532.2	9390	1531.5	9439	1531.5	9484	1530.1	9507	1525.7
9523	1526	9537	1529.8	9605	1530.1	9671	1530.9	9682	1530.2
9709	1530.4	9726	1531.2	9776	1531.3	9840	1530.4	9851	1529.7
9901	1530.9	9962	1531.6	9975	1530.6	9991	1522.9	10000	1522.6
10034	1522.9	10052	1530.4	10083	1530.6	10097	1527.4	10110	1531.2
10143	1531	10169	1531.2	10193	1532.3	10222	1532.9	10250	1532.2
10302	1532.2	10347	1532.2	10363	1531.6	10389	1532	10421	1531.1
10475	1531.1	10529	1531.1	10581	1529.7	10594	1530.3	10634	1530.6
10654	1530	10667	1530.5	10697	1529.9	10727	1531.7	10771	1532.2
10840	1532.9	10884	1533.5	10956	1533.9	10961	1533.3	10969	1534.6
10995	1534.9	11002	1534	11019	1533.5	11025	1534.9	11065	1535.4

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8217	.045	9107	.07	9205	.045	9484	.04	9537	.045
9962	.04	10052	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9962	10052	1260	1471	1485	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8217	9537	

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach-1	13.28	26700.0	1522.6	1533.7	1533.7	1534.9	0.007372	12.7	3992.1	2106.5	0.8
Reach-1	13.28	26700.0	1522.6	1534.7	1533.7	1535.3	0.003203	9.0	5147.1	1265.0	0.5
Reach-1	13.4	26700.0	1528.7	1538.0	1537.0	1538.4	0.004102	7.6	5608.0	2108.7	0.6
Reach-1	13.4	26700.0	1528.7	1537.6	1537.6	1539.1	0.012521	12.8	2819.0	932.0	1.0
Reach-1	13.55	26700.0	1535.2	1542.9	1542.8	1543.9	0.012936	11.7	3484.5	1578.3	1.0
Reach-1	13.55	26700.0	1535.2	1544.3	1543.1	1544.8	0.004575	8.3	4656.9	1334.0	0.6
Reach-1	13.66	26700.0	1542.1	1548.0	1547.1	1548.4	0.006326	7.0	4948.7	1965.7	0.6
Reach-1	13.66	26700.0	1542.1	1547.8	1547.7	1548.8	0.014124	10.2	3298.5	1427.0	1.0
Reach-1	13.86	26700.0	1546.3	1555.8	1555.5	1556.6	0.009373	9.8	4128.0	1741.1	0.8
Reach-1	13.86	26700.0	1546.3	1556.8	1555.7	1557.4	0.005175	8.3	4613.7	1330.1	0.6
Reach-1	14.07	26700.0	1557.5	1565.0	1564.5	1565.5	0.007320	8.8	4905.3	2080.7	0.7
Reach-1	14.07	26700.0	1557.5	1564.7	1564.7	1565.7	0.012089	11.0	3904.6	1724.0	0.9
Reach-1	14.3	26700.0	1559.6	1574.7	1574.7	1575.6	0.004784	11.0	5349.4	2262.8	0.6
Reach-1	14.3	26700.0	1559.6	1575.6	1575.6	1577.1	0.005707	12.7	3559.7	950.0	0.7
Reach-1	14.54	26700.0	1571.6	1582.6	1582.3	1584.6	0.011116	13.9	2736.9	539.0	0.9
Reach-1	14.54	26700.0	1571.6	1583.5	1582.3	1584.9	0.006827	11.7	3205.2	530.0	0.7
Reach-1	14.74	26700.0	1581.7	1591.6	1591.0	1593.2	0.005904	12.0	2938.6	781.4	0.7
Reach-1	14.74	26700.0	1581.7	1591.2	1591.1	1593.6	0.009086	14.4	2211.1	400.0	0.9
Reach-1	14.89	26700.0	1583.2	1596.3	1596.3	1598.5	0.007794	14.1	2664.2	532.6	0.8
Reach-1	14.89	26700.0	1583.2	1597.1	1596.4	1598.9	0.005738	12.8	2846.9	483.6	0.7
Reach-1	15.06	26700.0	1591.3	1603.0	1602.3	1604.3	0.005587	11.1	3362.9	770.8	0.7
Reach-1	15.06	26700.0	1591.3	1602.9	1602.2	1604.8	0.007887	13.0	2541.3	418.0	0.8
Reach-1	15.12	26700.0	1595.8	1605.2	1605.2	1606.9	0.008722	12.7	2827.1	822.4	0.8
Reach-1	15.12	26700.0	1595.8	1605.4	1605.4	1608.2	0.012392	15.3	2082.6	376.0	1.0
Reach-1	15.22	26700.0	1598.9	1610.2	1610.2	1612.2	0.009111	14.1	2582.6	604.7	0.9
Reach-1	15.22	26700.0	1598.9	1611.3	1610.1	1612.6	0.004988	11.2	3096.1	523.0	0.7
Reach-1	15.41	26700.0	1607.6	1618.4	1616.7	1619.9	0.006996	11.8	2863.0	514.2	0.8
Reach-1	15.41	26700.0	1607.6	1617.6	1616.7	1619.5	0.010619	13.7	2471.3	381.6	0.9
Reach-1	15.55	26700.0	1613.4	1623.0	1622.9	1625.0	0.007952	12.8	2482.1	532.2	0.8
Reach-1	15.55	26700.0	1613.4	1623.6	1623.4	1626.6	0.009184	14.4	1976.4	292.0	0.9
Reach-1	15.75	26700.0	1616.3	1630.0	1629.3	1631.2	0.004905	11.2	3333.3	769.7	0.7
Reach-1	15.75	26700.0	1616.3	1630.9	1628.7	1631.8	0.003186	9.6	3712.9	639.0	0.5
Reach-1	15.89	26700.0	1626.8	1635.5	1635.5	1637.3	0.010358	13.7	2900.6	724.5	0.9
Reach-1	15.89	26700.0	1626.8	1636.7	1636.7	1639.4	0.010491	15.4	2300.1	393.0	0.9
Reach-1	16.07	26700.0	1634.3	1644.0	1643.7	1646.0	0.008036	13.3	2657.9	520.5	0.8
Reach-1	16.07	26700.0	1634.3	1645.1	1644.0	1647.1	0.006317	12.8	2669.4	370.0	0.7
Reach-1	16.19	26700.0	1637.5	1648.8	1648.5	1650.3	0.006226	12.5	3315.6	763.8	0.7

Reach-1	16.19	26700.0	1637.5	1649.1	1648.8	1651.2	0.007260	13.8	2699.6	470.6	0.8
Reach-1	16.27	26700.0	1639.4	1652.8	1652.8	1654.8	0.007406	14.2	3012.4	651.5	0.8
Reach-1	16.27	26700.0	1639.4	1653.7	1653.7	1657.0	0.009168	16.6	2064.0	284.0	0.9
Reach-1	16.49	26700.0	1653.3	1661.8	1660.9	1663.1	0.006947	11.5	3055.4	654.6	0.8
Reach-1	16.49	26700.0	1653.3	1663.0	1661.0	1664.1	0.004133	9.7	3396.4	524.0	0.6
Reach-1	16.68	26700.0	1662.3	1669.5	1667.6	1670.3	0.005864	9.4	3701.4	660.6	0.7
Reach-1	16.68	26700.0	1662.3	1669.1	1667.6	1670.1	0.007260	10.0	3451.7	650.0	0.7
Reach-1	16.86	27300.0	1670.5	1678.7	1678.7	1682.2	0.012826	14.9	1829.0	554.7	1.0
Reach-1	16.86	27300.0	1670.5	1678.8	1678.8	1682.2	0.012439	14.8	1846.7	270.2	1.0
Reach-1	16.865	Bridge									
Reach-1	16.87	27300.0	1669.9	1685.3	1679.1	1686.2	0.001538	7.6	3599.2	1921.0	0.4
Reach-1	16.87	27300.0	1669.9	1685.3	1679.1	1686.2	0.001535	7.6	3601.4	295.5	0.4
Reach-1	16.96	27300.0	1676.2	1686.0	1684.8	1687.7	0.006471	10.8	2853.9	1561.0	0.7
Reach-1	16.96	27300.0	1676.2	1685.9	1684.8	1687.8	0.006972	11.1	2514.7	456.0	0.8
Reach-1	17.06	27300.0	1678.2	1690.0	1689.4	1691.3	0.005862	11.3	3827.9	1052.4	0.7
Reach-1	17.06	27300.0	1678.2	1690.2	1690.2	1692.0	0.007506	13.0	3397.7	870.0	0.8
Reach-1	17.18	27300.0	1686.2	1695.3	1695.3	1697.0	0.009207	13.3	2865.4	857.2	0.9
Reach-1	17.18	27300.0	1686.2	1695.2	1695.2	1697.1	0.009533	13.4	2758.9	755.0	0.9
Reach-1	17.3	27300.0	1692.2	1701.3	1701.3	1702.8	0.007557	12.8	3769.1	1035.6	0.8
Reach-1	17.3	27300.0	1692.2	1701.2	1701.2	1702.8	0.007893	13.0	3593.0	922.0	0.8
Reach-1	17.39	27300.0	1696.2	1705.4	1705.4	1707.1	0.008541	12.0	3169.4	1085.5	0.8
Reach-1	17.39	27300.0	1696.2	1705.3	1705.3	1707.2	0.009126	12.3	2926.1	713.0	0.8
Reach-1	17.48	27300.0	1702.2	1709.5	1709.5	1711.0	0.008642	12.0	3309.1	962.9	0.8
Reach-1	17.48	27300.0	1702.2	1709.5	1709.5	1711.1	0.009000	12.3	3127.5	851.1	0.8
Reach-1	17.57	27300.0	1702.2	1714.0	1714.0	1715.7	0.006889	12.5	3383.3	889.9	0.8
Reach-1	17.57	27300.0	1702.2	1714.0	1714.0	1715.8	0.007211	12.8	3160.3	746.5	0.8
Reach-1	17.65	27300.0	1704.2	1717.4	1717.4	1719.0	0.005370	13.2	3639.3	903.7	0.7
Reach-1	17.65	27300.0	1704.2	1717.3	1717.3	1719.0	0.005538	13.4	3531.0	846.3	0.7
Reach-1	17.78	27300.0	1713.4	1721.9	1721.5	1723.1	0.007738	12.0	3590.8	948.9	0.8
Reach-1	17.78	27300.0	1713.4	1721.9	1721.5	1723.1	0.007440	11.8	3624.2	934.8	0.8
Reach-1	17.84	27300.0	1718.2	1724.5	1724.3	1725.9	0.009558	11.6	3116.7	965.8	0.9
Reach-1	17.84	27300.0	1718.2	1724.4	1724.3	1726.0	0.009906	11.8	3021.5	905.0	0.9
Reach-1	17.95	27300.0	1722.2	1730.1	1730.1	1731.8	0.010079	12.9	3058.4	900.3	0.9
Reach-1	17.95	27300.0	1722.2	1730.0	1730.0	1731.8	0.010527	13.1	2983.2	774.7	0.9
Reach-1	18.09	27700.0	1727.4	1734.8	1733.6	1735.5	0.004778	8.8	4967.6	1505.5	0.6
Reach-1	18.09	27700.0	1727.4	1735.0	1733.4	1736.0	0.005689	9.8	3834.4	715.0	0.7
Reach-1	18.16	27700.0	1728.8	1736.8	1736.7	1738.2	0.011086	13.3	3310.4	988.8	0.9
Reach-1	18.16	27700.0	1728.8	1737.3	1736.7	1738.8	0.009725	12.9	3096.2	651.4	0.9
Reach-1	18.23	27700.0	1730.0	1741.9	1741.9	1743.2	0.007537	13.6	4155.7	1317.0	0.8
Reach-1	18.23	27700.0	1730.0	1742.1	1742.1	1744.0	0.009024	15.2	3170.6	700.0	0.9

Reach-1	18.29	27700.0	1733.5	1743.9	1742.2	1744.7	0.004053	9.6	4330.6	1144.3	0.6
Reach-1	18.29	27700.0	1733.5	1744.7	1742.3	1745.4	0.003152	9.0	4223.5	700.0	0.5
Reach-1	18.49	27700.0	1741.7	1750.4	1750.4	1752.2	0.013275	14.9	2942.7	826.2	1.0
Reach-1	18.49	27700.0	1741.7	1751.0	1751.0	1753.0	0.012442	15.3	2790.5	643.0	1.0
Reach-1	18.57	27700.0	1744.4	1754.9	1754.3	1756.3	0.007411	12.6	3830.3	942.5	0.8
Reach-1	18.57	27700.0	1744.4	1755.5	1754.7	1756.8	0.006659	12.5	3719.7	780.0	0.8
Reach-1	18.74	27300.0	1755.0	1761.6	1760.6	1762.5	0.008627	9.1	3672.8	1150.0	0.7
Reach-1	18.74	27300.0	1755.0	1761.8	1760.6	1762.8	0.008591	9.3	3474.8	745.0	0.7
Reach-1	18.84	27300.0	1755.7	1765.8	1764.6	1766.8	0.008925	9.8	3434.9	1098.3	0.7
Reach-1	18.84	27300.0	1755.7	1766.2	1765.4	1767.6	0.011015	11.4	2973.6	564.0	0.8
Reach-1	18.96	27300.0	1762.2	1771.4	1771.4	1772.6	0.010465	12.2	3946.1	1436.9	0.7
Reach-1	18.96	27300.0	1762.2	1772.1	1771.7	1773.3	0.008747	11.8	3632.2	841.0	0.7
Reach-1	19.07	27300.0	1764.8	1776.4	1775.6	1777.0	0.005187	9.0	5067.5	1627.1	0.5
Reach-1	19.07	27300.0	1764.8	1776.7	1775.6	1777.6	0.005674	9.7	4036.5	830.0	0.6
Reach-1	19.18	27300.0	1770.0	1780.8	1780.8	1782.4	0.014737	12.7	3008.3	841.6	0.9
Reach-1	19.18	27300.0	1770.0	1780.9	1780.9	1782.5	0.015205	12.9	2881.1	748.8	0.9
Reach-1	19.26	27300.0	1773.0	1786.3	1785.4	1787.4	0.008109	12.2	3692.5	1603.0	0.7
Reach-1	19.26	27300.0	1773.0	1786.5	1785.4	1787.6	0.008073	12.3	3557.9	635.0	0.7
Reach-1	19.41	27300.0	1783.9	1791.5	1789.7	1792.1	0.005506	7.7	4680.1	1058.7	0.5
Reach-1	19.41	27300.0	1783.9	1791.6	1789.7	1792.2	0.005285	7.6	4629.9	950.0	0.5
Reach-1	19.52	27300.0	1786.2	1795.3	1794.6	1796.6	0.012918	12.4	3104.6	713.8	0.8
Reach-1	19.52	27300.0	1786.2	1795.3	1794.6	1796.6	0.012790	12.4	3108.1	680.0	0.8
Reach-1	19.62	27300.0	1790.3	1800.9	1799.8	1801.9	0.007762	10.2	3512.6	778.6	0.6
Reach-1	19.62	27300.0	1790.3	1800.9	1799.8	1801.9	0.007775	10.2	3508.4	746.8	0.6
Reach-1	19.72	27300.0	1795.1	1805.1	1804.4	1806.3	0.009626	11.0	3297.0	762.2	0.7
Reach-1	19.72	27300.0	1795.1	1805.1	1804.4	1806.3	0.009768	11.1	3226.3	725.0	0.7
Reach-1	19.83	27300.0	1799.3	1810.6	1810.3	1812.2	0.010909	12.7	3091.1	704.0	0.8
Reach-1	19.83	27300.0	1799.3	1810.7	1810.4	1812.3	0.010874	12.7	3025.8	650.0	0.8
Reach-1	19.92	27300.0	1802.0	1815.3	1814.9	1816.2	0.006344	11.3	4243.3	1250.2	0.6
Reach-1	19.92	27300.0	1802.0	1815.6	1814.8	1816.8	0.007266	12.3	3582.5	683.3	0.7
Reach-1	20.05	27300.0	1810.7	1820.0	1818.7	1820.7	0.005351	10.3	4270.9	1030.8	0.7
Reach-1	20.05	27300.0	1810.7	1820.3	1818.7	1821.0	0.004145	9.4	4654.0	1038.3	0.6
Reach-1	20.16	27300.0	1817.7	1824.7	1824.7	1826.1	0.009915	12.1	3210.2	1112.1	0.9
Reach-1	20.16	27300.0	1817.7	1824.7	1824.7	1826.2	0.009985	12.1	3146.3	1068.4	0.9
Reach-1	20.26	27300.0	1825.1	1830.6	1830.4	1831.8	0.011221	10.0	3462.3	1176.7	0.9
Reach-1	20.26	27300.0	1825.1	1830.7	1830.5	1831.9	0.011358	10.1	3381.3	1145.4	0.9
Reach-1	20.38	27300.0	1829.6	1835.9	1834.5	1836.5	0.006485	8.6	4390.4	1251.3	0.7
Reach-1	20.38	27300.0	1829.6	1836.0	1834.5	1836.6	0.006326	8.5	4389.0	1189.8	0.7
Reach-1	20.48	27300.0	1832.8	1841.1	1841.1	1842.3	0.009294	13.1	3721.4	1280.3	0.9
Reach-1	20.48	27300.0	1832.8	1841.6	1841.6	1843.2	0.009161	13.7	3314.1	906.0	0.9

Reach-1	20.62	27300.0	1839.3	1848.5	1848.5	1849.7	0.007795	13.2	3822.2	1226.4	0.8
Reach-1	20.62	27300.0	1839.3	1849.1	1849.1	1850.6	0.007650	13.7	3321.4	885.0	0.8
Reach-1	20.64	27300.0	1842.0	1849.9	1849.1	1850.6	0.005340	9.0	4479.9	1296.3	0.7
Reach-1	20.64	27300.0	1842.0	1850.5	1849.7	1851.5	0.005735	10.0	3702.7	850.0	0.7
Reach-1	20.71	27300.0	1843.0	1853.2	1853.2	1854.4	0.006964	12.2	4191.8	1434.3	0.8
Reach-1	20.71	27300.0	1843.0	1853.8	1853.8	1855.5	0.007745	13.5	3187.8	810.0	0.8
Reach-1	20.79	27300.0	1847.5	1856.7	1856.2	1857.5	0.006480	9.4	4255.0	1505.1	0.7
Reach-1	20.79	27300.0	1847.5	1857.5	1857.0	1858.9	0.007595	11.1	3035.1	660.0	0.8
Reach-1	20.9	27300.0	1852.6	1862.7	1862.7	1864.0	0.006746	11.9	4010.9	1522.8	0.8
Reach-1	20.9	27300.0	1852.6	1863.0	1863.0	1865.0	0.008305	13.6	3025.1	670.0	0.9
Reach-1	20.98	27300.0	1853.2	1866.4	1866.4	1867.8	0.006276	11.8	3864.9	1374.1	0.8
Reach-1	20.98	27300.0	1853.2	1866.4	1866.3	1868.3	0.007334	12.8	3122.4	670.0	0.8
Reach-1	21.05	27300.0	1857.6	1869.7	1869.7	1871.2	0.005743	12.3	3930.8	1303.6	0.7
Reach-1	21.05	27300.0	1857.6	1869.8	1869.8	1871.8	0.006890	13.5	3172.2	695.0	0.8
Reach-1	21.11	27300.0	1860.5	1872.0	1872.0	1873.6	0.006251	12.5	3665.1	1023.3	0.8
Reach-1	21.11	27300.0	1860.5	1872.1	1872.1	1873.9	0.006719	13.0	3303.7	775.0	0.8
Reach-1	21.18	27300.0	1865.0	1876.0	1876.0	1877.5	0.006016	12.3	3962.1	1446.8	0.8
Reach-1	21.18	27300.0	1865.0	1876.0	1876.0	1877.7	0.006886	12.9	3574.3	900.0	0.8
Reach-1	21.25	27300.0	1868.7	1881.1	1881.1	1882.5	0.004140	12.0	4562.2	1474.1	0.6
Reach-1	21.25	27300.0	1868.7	1881.3	1881.3	1883.3	0.005356	13.6	3442.2	745.0	0.7
Reach-1	21.31	27300.0	1870.7	1882.5	1882.0	1883.8	0.005226	12.5	3878.4	947.8	0.7
Reach-1	21.31	27300.0	1870.7	1883.3	1882.4	1884.7	0.004804	12.7	3662.8	650.0	0.7
Reach-1	21.35	27300.0	1871.5	1883.6	1883.6	1885.4	0.007351	16.2	3571.8	848.0	0.9
Reach-1	21.35	27300.0	1871.5	1884.3	1883.8	1885.9	0.005968	15.2	3672.0	705.0	0.8
Reach-1	21.41	27300.0	1874.2	1887.4	1886.6	1888.7	0.007772	16.3	3853.5	856.7	0.9
Reach-1	21.41	27300.0	1874.2	1887.4	1886.4	1888.9	0.008296	16.8	3497.2	600.0	0.9
Reach-1	21.49	27300.0	1882.0	1891.5	1890.1	1892.6	0.008681	10.5	3538.2	731.3	0.7
Reach-1	21.49	27300.0	1882.0	1891.6	1890.1	1892.7	0.007601	10.0	3652.9	700.0	0.7
Reach-1	21.58	27300.0	1888.0	1895.6	1894.9	1896.4	0.008699	8.9	4052.9	1308.9	0.7
Reach-1	21.58	27300.0	1888.0	1895.7	1895.5	1897.2	0.014487	11.6	3038.4	840.0	0.9
Reach-1	21.63	27300.0	1888.5	1898.4	1897.6	1899.4	0.011227	11.8	3929.3	1405.6	0.8
Reach-1	21.63	27300.0	1888.5	1899.3	1898.4	1900.1	0.006563	9.9	4243.5	1055.0	0.6
Reach-1	21.69	27300.0	1895.1	1902.1	1900.8	1902.7	0.006158	8.3	4934.4	1419.9	0.6
Reach-1	21.69	27300.0	1895.1	1902.3	1901.6	1903.0	0.008966	10.2	4306.8	1330.0	0.7
Reach-1	21.77	27300.0	1897.3	1905.5	1905.5	1907.1	0.015058	12.9	2890.2	929.1	0.9
Reach-1	21.77	27300.0	1897.3	1906.2	1905.5	1907.2	0.009710	11.2	3584.1	1357.7	0.8
Reach-1	21.82	27300.0	1900.5	1909.2	1908.7	1910.3	0.010810	11.4	3654.2	1179.4	0.8
Reach-1	21.82	27300.0	1900.5	1909.1	1909.1	1910.4	0.013571	12.6	3303.0	1088.0	0.9
Reach-1	21.91	27300.0	1906.0	1913.8	1913.0	1914.6	0.008475	9.1	3881.6	1122.6	0.7
Reach-1	21.91	27300.0	1906.0	1914.4	1913.5	1915.4	0.008762	9.8	3484.2	1031.0	0.7

Reach-1	21.99	27300.0	1909.9	1917.8	1917.5	1918.8	0.011966	10.4	3632.2	1401.7	0.8
Reach-1	21.99	27300.0	1909.9	1918.3	1917.7	1919.3	0.010909	10.5	3616.2	1219.1	0.8
Reach-1	22.08	27300.0	1915.0	1922.3	1921.5	1923.0	0.007547	8.1	4411.4	1542.9	0.7
Reach-1	22.08	27300.0	1915.0	1922.7	1921.9	1923.6	0.008319	8.9	3660.2	1125.0	0.7
Reach-1	22.15	27300.0	1919.0	1925.2	1924.7	1926.2	0.011201	8.6	3433.7	1189.6	0.8
Reach-1	22.15	27300.0	1919.0	1925.8	1925.3	1927.0	0.011226	9.5	3199.8	968.7	0.8
Reach-1	22.22	27300.0	1921.5	1928.7	1928.3	1930.2	0.012923	10.3	2802.9	773.0	0.8
Reach-1	22.22	27300.0	1921.5	1929.1	1928.5	1930.7	0.011036	9.7	2730.6	668.5	0.8
Reach-1	22.29	27300.0	1925.5	1932.8	1931.6	1933.8	0.007985	8.6	3478.4	1218.8	0.7
Reach-1	22.29	27300.0	1925.5	1933.1	1932.4	1934.3	0.009150	9.7	3119.7	859.3	0.7
Reach-1	22.36	27300.0	1929.0	1936.7	1936.4	1938.2	0.012739	9.9	2837.9	1042.2	0.8
Reach-1	22.36	27300.0	1929.0	1937.2	1936.6	1938.5	0.010541	9.1	2938.7	781.9	0.8
Reach-1	22.43	27300.0	1934.0	1941.4	1940.3	1942.0	0.007262	7.6	4402.4	1320.5	0.6
Reach-1	22.43	27300.0	1934.0	1942.2	1941.8	1943.4	0.013806	11.7	3410.2	918.0	0.9
Reach-1	22.48	27300.0	1936.0	1943.8	1943.8	1945.2	0.019666	11.9	2921.0	1351.1	1.0
Reach-1	22.48	27300.0	1936.0	1945.1	1944.6	1946.5	0.013063	11.5	3006.9	723.0	0.9
Reach-1	22.56	27300.0	1938.6	1948.4	1947.4	1949.3	0.007050	9.7	3648.5	1101.1	0.7
Reach-1	22.56	27300.0	1938.6	1948.9	1947.8	1950.1	0.007677	10.6	3135.2	635.0	0.7
Reach-1	22.67	27300.0	1944.5	1953.9	1953.9	1955.8	0.013689	14.0	2885.0	718.1	0.9
Reach-1	22.67	27300.0	1944.5	1954.4	1954.4	1956.5	0.013857	14.4	2711.7	575.0	0.9
Reach-1	22.73	27300.0	1947.0	1958.2	1958.1	1959.7	0.010913	14.9	3555.5	915.3	0.9
Reach-1	22.73	27300.0	1947.0	1959.0	1959.0	1961.1	0.012507	16.3	2917.2	531.0	0.9
Reach-1	22.79	27300.0	1950.0	1961.2	1960.9	1962.6	0.007922	12.2	3862.0	1007.1	0.7
Reach-1	22.79	27300.0	1950.0	1962.4	1961.5	1963.7	0.005901	11.5	3709.5	660.0	0.7
Reach-1	22.86	24400.0	1953.5	1964.4	1964.4	1965.8	0.009958	14.1	3379.9	970.7	0.8
Reach-1	22.86	24400.0	1953.5	1965.0	1964.6	1966.3	0.008171	13.2	3294.5	742.0	0.8
Reach-1	22.96	24400.0	1959.6	1974.3	1974.3	1975.7	0.007932	13.9	3550.2	914.1	0.7
Reach-1	22.96	24400.0	1959.6	1974.5	1974.5	1976.7	0.010278	16.0	2940.3	514.8	0.8
Reach-1	23.13	24400.0	1969.8	1981.2	1981.2	1983.0	0.009337	13.9	2995.5	790.2	0.8
Reach-1	23.13	24400.0	1969.8	1982.1	1981.7	1983.9	0.007534	13.2	2848.9	561.0	0.7
Reach-1	23.25	24400.0	1977.3	1987.4	1987.3	1989.0	0.009976	13.6	3217.4	745.9	0.8
Reach-1	23.25	24400.0	1977.3	1988.1	1988.1	1991.0	0.013198	16.6	2156.3	334.0	1.0
Reach-1	23.33	24400.0	1981.1	1991.4	1990.7	1993.0	0.009752	13.1	2624.7	600.4	0.8
Reach-1	23.33	24400.0	1981.1	1993.3	1990.9	1994.6	0.005903	11.1	2665.1	331.0	0.6
Reach-1	23.45	24400.0	1991.5	1998.8	1997.5	2000.0	0.013459	13.0	2812.2	616.7	0.9
Reach-1	23.45	24400.0	1991.5	1998.6	1997.6	2000.1	0.014699	13.4	2544.0	465.0	0.9
Reach-1	23.55	24400.0	1997.0	2004.5	2003.7	2005.7	0.009727	10.7	3023.0	782.6	0.8
Reach-1	23.55	24400.0	1997.0	2005.0	2004.3	2006.7	0.011602	12.4	2553.3	467.0	0.9
Reach-1	23.64	11800.0	2000.0	2009.2	2008.7	2010.1	0.006937	10.9	2203.3	756.6	0.7
Reach-1	23.64	11800.0	2000.0	2010.1	2008.7	2010.6	0.003646	8.4	2744.8	662.0	0.5

Reach-1	23.87	11800.0	2008.8	2018.6	2018.6	2020.1	0.008198	11.5	1579.6	542.4	0.7
Reach-1	23.87	11800.0	2008.8	2018.9	2018.9	2020.8	0.009431	12.5	1334.9	353.0	0.8
Reach-1	23.94	11800.0	2010.4	2021.8	2020.6	2022.8	0.005432	8.7	1796.0	623.7	0.6
Reach-1	23.94	11800.0	2010.4	2022.5	2020.7	2023.2	0.004211	8.1	1897.5	500.0	0.5
Reach-1	24.03	11800.0	2017.5	2024.9	2024.3	2025.6	0.007898	8.4	1861.0	646.6	0.7
Reach-1	24.03	11800.0	2017.5	2025.5	2025.5	2027.8	0.018333	13.6	1030.1	223.0	1.0
Reach-1	24.12	11800.0	2020.6	2029.2	2029.2	2030.8	0.008607	10.5	1336.8	448.2	0.7
Reach-1	24.12	11800.0	2020.6	2030.6	2028.6	2031.7	0.005024	9.0	1386.7	207.0	0.6
Reach-1	24.25	9700.0	2024.0	2034.7	2033.1	2035.6	0.005179	8.8	1435.7	510.3	0.6
Reach-1	24.25	9700.0	2024.0	2034.6	2033.4	2035.8	0.006887	10.0	1188.1	248.0	0.6
Reach-1	24.38	9700.0	2031.5	2038.5	2038.0	2039.6	0.008274	9.5	1364.3	413.1	0.7
Reach-1	24.38	9700.0	2031.5	2039.0	2038.0	2040.1	0.006842	9.2	1298.2	266.0	0.6
Reach-1	24.48	9700.0	2036.8	2043.3	2043.3	2044.6	0.012585	10.9	1164.1	455.2	0.8
Reach-1	24.48	9700.0	2036.8	2044.3	2044.3	2046.4	0.013220	12.5	945.6	214.0	0.9
Reach-1	24.61	9700.0	2040.2	2050.0	2049.8	2051.0	0.007093	10.2	1548.2	652.7	0.7
Reach-1	24.61	9700.0	2040.2	2051.8	2050.6	2054.7	0.010851	13.5	715.9	79.0	0.8
Reach-1	24.74	9700.0	2045.8	2056.2	2056.2	2057.2	0.006318	9.2	1533.5	701.7	0.6
Reach-1	24.74	9700.0	2045.8	2058.1	2055.2	2059.4	0.004649	9.0	1077.9	125.0	0.5
Reach-1	24.87	7800.0	2054.6	2062.0	2062.0	2063.2	0.008798	9.6	1089.8	530.9	0.7
Reach-1	24.87	7800.0	2054.6	2062.5	2062.1	2064.4	0.011420	11.5	728.1	151.0	0.8
Reach-1	24.95	7800.0	2057.4	2065.1	2063.7	2065.7	0.005166	7.1	1361.8	361.5	0.5
Reach-1	24.95	7800.0	2057.4	2066.5	2065.1	2067.7	0.005671	8.8	962.8	180.0	0.6
Reach-1	25.12	7800.0	2064.7	2072.9	2072.9	2075.3	0.013809	12.6	668.9	440.8	0.9
Reach-1	25.12	7800.0	2064.7	2072.9	2072.9	2075.3	0.013456	12.5	676.0	153.7	0.9
Reach-1	25.28	7800.0	2071.5	2081.8	2081.1	2082.5	0.004785	8.1	1490.2	579.1	0.5
Reach-1	25.28	7800.0	2071.5	2082.2	2081.1	2083.4	0.006240	9.5	1005.1	190.0	0.6
Reach-1	25.38	7800.0	2079.8	2084.9	2084.1	2085.2	0.006887	5.6	1932.8	1245.2	0.6
Reach-1	25.38	7800.0	2079.8	2085.9	2084.6	2086.2	0.004290	5.3	1943.4	646.0	0.5
Reach-1	25.45	7800.0	2084.8	2088.5	2088.5	2089.3	0.016002	7.2	1060.7	995.1	0.8
Reach-1	25.45	7800.0	2084.8	2089.1	2089.1	2090.0	0.022283	9.9	1130.2	632.0	1.0
Reach-1	25.56	7800.0	2091.6	2095.4	2095.4	2096.2	0.008607	6.1	1193.5	1220.0	0.6
Reach-1	25.56	7800.0	2091.6	2095.7	2095.4	2096.3	0.006137	5.5	1417.8	799.4	0.5
Reach-1	25.63	7800.0	2095.2	2098.9	2098.5	2099.7	0.011564	7.2	1064.6	648.4	0.7
Reach-1	25.63	7800.0	2095.2	2099.5	2099.5	2100.6	0.016692	9.5	929.7	437.3	0.9
Reach-1	25.69	7800.0	2098.0	2101.1	2099.7	2101.4	0.003564	3.4	1914.8	1264.0	0.4
Reach-1	25.69	7800.0	2098.0	2104.3	2104.3	2106.2	0.017672	13.1	773.9	190.0	1.0
Reach-1	25.73	7800.0	2100.0	2103.8	2103.8	2105.6	0.019589	10.6	735.3	1542.7	1.0
Reach-1	25.73	7800.0	2100.0	2107.1	2103.8	2107.6	0.002189	5.5	1429.6	215.0	0.4
Reach-1	25.735	Bridge									

Reach-1	25.74	7800.0	2100.0	2108.9	2103.8	2109.2	0.001008	4.4	1779.9	2042.7	0.3
Reach-1	25.74	7800.0	2100.0	2108.9	2103.8	2109.2	0.001008	4.4	1780.2	215.0	0.3
Reach-1	25.78	7800.0	2100.0	2108.9	2106.6	2109.9	0.005272	7.8	994.9	1865.8	0.6
Reach-1	25.78	7800.0	2100.0	2108.9	2106.6	2109.9	0.005305	7.8	995.3	166.7	0.6
Reach-1	25.83	7800.0	2105.1	2112.5	2112.5	2113.7	0.013111	9.9	1046.3	2108.7	0.8
Reach-1	25.83	7800.0	2105.1	2113.1	2113.1	2115.5	0.017793	12.5	622.4	126.0	1.0
Reach-1	25.95	7800.0	2110.4	2119.1	2119.1	2120.0	0.008205	9.7	1203.3	1968.9	0.7
Reach-1	25.95	7800.0	2110.4	2120.9	2120.3	2122.7	0.007957	11.3	761.7	141.0	0.7
Reach-1	26.17	7800.0	2121.7	2132.4	2132.4	2133.5	0.009610	9.8	1207.7	564.6	0.7
Reach-1	26.17	7800.0	2121.7	2132.9	2132.7	2135.8	0.016873	13.6	575.5	96.0	1.0

ERRORS WARNINGS AND NOTES
Errors Warnings and Notes for Plan : WMP-SC-EX100

River: RIVER-1 Reach: Reach-1 RS: 26.17 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 26.17 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.95 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.95 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.83 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 25.83 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.78 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.78 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.74 Profile: Ex 100-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 25.74 Profile: Ex 100-yr Enc
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Ex 100-yr
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used
for pressure flow.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Ex 100-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Ex 100-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Ex 100-yr Enc
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer
has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used
for pressure flow.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Ex 100-yr Enc Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Ex 100-yr Enc Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 25.73 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 25.73 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 25.69 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.69 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.63 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.63 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.56 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.56 Profile: Ex 100-yr Enc
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.45 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The 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.

River: RIVER-1 Reach: Reach-1 RS: 25.45 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.38 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.38 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.28 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.28 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.12 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.12 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.95 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.95 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.87 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 24.87 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.74 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.74 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.61 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.61 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.48 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated

water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.48 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.38 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 24.38 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.25 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.25 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.12 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.12 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.03 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 24.03 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.94 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.94 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.87 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.87 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.64 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 23.64 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.55 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 23.55 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.45 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

River: RIVER-1 Reach: Reach-1 RS: 23.45 Profile: Ex 100-yr Enc
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.33 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.33 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.25 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.25 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.13 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.13 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.96 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.96 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.86 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.86 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.79 Profile: Ex 100-yr
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.79 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.73 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.73 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.67 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.67 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.56 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.56 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.48 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.48 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.43 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.43 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.36 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.36 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.29 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.29 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.22 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.22 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.15 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.15 Profile: Ex 100-yr Enc

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.
River: RIVER-1 Reach: Reach-1 RS: 22.08 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.08 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.99 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.99 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 21.91 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.91 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.82 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.82 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.77 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The 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.
River: RIVER-1 Reach: Reach-1 RS: 21.77 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.69 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.69 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.63 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.63 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.58 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.58 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.49 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.49 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.41 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.41 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.35 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.35 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.31 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.31 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.25 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.25 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.18 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.18 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.11 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.11 Profile: Ex 100-yr Enc
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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.05 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 21.05 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.98 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 20.98 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.9 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 20.9 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.79 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.79 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.71 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated

water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.71 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.64 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.64 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.62 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.62 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.48 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.48 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.38 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.

Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.38 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.26 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 20.26 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 20.16 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.16 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.05 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 20.05 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.92 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.92 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.83 Profile: Ex 100-yr

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.83 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.72 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.72 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.62 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 19.62 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.52 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.52 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.41 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.41 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.26 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.26 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.18 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 19.18 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 19.07 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.07 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.96 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.96 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.84 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 18.84 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.74 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.74 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.57 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.57 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.49 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The 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.
River: RIVER-1 Reach: Reach-1 RS: 18.49 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.29 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.29 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.23 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.23 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.16 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.

Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.16 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.09 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.09 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.95 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 17.95 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.84 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.84 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.78 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.78 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.65 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.65 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.57 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.57 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.48 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.48 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.39 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.

River: RIVER-1 Reach: Reach-1 RS: 17.39 Profile: Ex 100-yr Enc
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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.3 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.3 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.18 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 17.18 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.06 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.06 Profile: Ex 100-yr Enc
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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The

program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 16.96 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: RIVER-1 Reach: Reach-1 RS: 16.96 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.87 Profile: Ex 100-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.87 Profile: Ex 100-yr Enc
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer
has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used
for pressure flow.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr Enc
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer
has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used
for pressure flow.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr Enc Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr Enc Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.86 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The 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, energy was used.

River: RIVER-1 Reach: Reach-1 RS: 16.86 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.68 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.68 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.49 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.49 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.27 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 16.27 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 16.19 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.19 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.07 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.07 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.89 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 15.89 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 15.75 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.75 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.55 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.55 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.41 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was

used.
River: RIVER-1 Reach: Reach-1 RS: 15.41 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.22 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 15.22 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.12 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 15.12 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 15.06 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.06 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.89 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated

water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 14.89 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.74 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.74 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.54 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.54 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.3 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 14.3 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 14.07 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 14.07 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 13.86 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 13.86 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 13.66 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.66 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.55 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.55 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.4 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.4 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.28 Profile: Ex 100-yr
Warning:User specified water surface is not possible for the specified flow regime. The program used critical depth as the
starting water surface.
Warning:Divided flow computed for this cross-section.
River: RIVER-1 Reach: Reach-1 RS: 13.28 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.

HEC-RAS Base Controlling Condition 100-year Peak Discharge Alternative Model

HEC-RAS September 1998 Version 2.2
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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

PROJECT DATA
Project Title: Watercourse Master Plan - Skunk Creek
Project File : WMP_SC.prj
Run Date and Time: 7/1/01 9:07:02 AM

Project in English units

Project Description:
Skunk Creek Watercourse Master Plan. Prepared for Skunk Creek from the CAP Canal to north of New River Road
by Stantec Consulting Inc. for ASL Consulting
and the Flood Control District of Maricopa County
FCD: 99-23

Project Start Date:October 1999

This
HEC-RAS model is based on HEC-2 models prepared by Montgomery Watson , Erie and Associates, and Hoskin Engineering Consultants. Montgomery Watson and Erie and Associates models reffect the FIS effective model for FEMA. Hoskins Engineering Counsultants model reflect a CLOMR submiital to FEMA (Case No. 99-09-592R, date of submittal responce 6/2/99).

PLAN DATA

Plan Title: WMP Model for E 100yr Controlling Q
Plan File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.p03

Geometry Title: Updated geometry, n values and CHBsurvey
Geometry File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.g04

Flow Title : 100-yr Controlling Q's
Flow File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.f11

Plan Description:
Skunk Creek Watercourse Master Plan
Skunk Creek Model
Geometry is the same as
the original HEC-2 model except for the cross sections at New River Bridge and Carefree Highway Bridge.
The discharges are for the controlling conditions.

Plan Summary Information:
Number of: Cross Sections = 122 Mulitple Openings = 0

Culverts = 0 Inline Weirs = 0
Bridges = 2

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

Computation Options
Critical depth computed at all cross sections
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

Encroachment Data
Equal Conveyance = True
Left Offset = 0
Right Offset = 0

River = RIVER-1 Reach = Reach-1

RS	Profile	Method	Value1	Value2
26.17	Cont. 100-yr Enc	1	9967	10063
25.95	Cont. 100-yr Enc	1	9923	10064
25.83	Cont. 100-yr Enc	1	9914	10040
25.78	Cont. 100-yr Enc	1	9938	10110
25.74	Cont. 100-yr Enc	1	9900	10115
25.73	Cont. 100-yr Enc	1	9900	10115
25.69	Cont. 100-yr Enc	1	9970	10160
25.63	Cont. 100-yr Enc	1	9931	10477
25.56	Cont. 100-yr Enc	1	9686	10511
25.45	Cont. 100-yr Enc	1	9966	10598
25.38	Cont. 100-yr Enc	1	9650	10296
25.28	Cont. 100-yr Enc	1	9849	10052
25.12	Cont. 100-yr Enc	1	9949	10105
24.95	Cont. 100-yr Enc	1	9920	10100
24.87	Cont. 100-yr Enc	1	9929	10080
24.74	Cont. 100-yr Enc	1	9961	10086
24.61	Cont. 100-yr Enc	1	9944	10023
24.48	Cont. 100-yr Enc	1	9834	10048
24.38	Cont. 100-yr Enc	1	9811	10077
24.25	Cont. 100-yr Enc	1	9951	10199
24.12	Cont. 100-yr Enc	1	9860	10067
24.03	Cont. 100-yr Enc	1	9900	10123
23.94	Cont. 100-yr Enc	1	9542	10042
23.87	Cont. 100-yr Enc	1	9668	10021
23.64	Cont. 100-yr Enc	1	9435	10097
23.55	Cont. 100-yr Enc	1	9766	10233
23.45	Cont. 100-yr Enc	1	9867	10332
23.33	Cont. 100-yr Enc	1	9963	10294
23.25	Cont. 100-yr Enc	1	9874	10208
23.13	Cont. 100-yr Enc	1	9595	10156
22.96	Cont. 100-yr Enc	1	9500	10016
22.86	Cont. 100-yr Enc	1	9450	10192
22.79	Cont. 100-yr Enc	1	9490	10150
22.73	Cont. 100-yr Enc	1	9499	10030
22.67	Cont. 100-yr Enc	1	9475	10050
22.56	Cont. 100-yr Enc	1	9470	10105
22.48	Cont. 100-yr Enc	1	9372	10095
22.43	Cont. 100-yr Enc	1	9192	10110
22.36	Cont. 100-yr Enc	1	9100	10080
22.29	Cont. 100-yr Enc	1	9000	10100
22.22	Cont. 100-yr Enc	1	8918	10067
22.15	Cont. 100-yr Enc	1	8700	10070
22.08	Cont. 100-yr Enc	1	9050	10175
21.99	Cont. 100-yr Enc	1	8765	10090
21.91	Cont. 100-yr Enc	1	8900	10040
21.82	Cont. 100-yr Enc	1	8750	10200
21.77	Cont. 100-yr Enc	1	8694	10165
21.69	Cont. 100-yr Enc	1	8970	10300
21.63	Cont. 100-yr Enc	1	9265	10320
21.58	Cont. 100-yr Enc	1	9415	10255
21.49	Cont. 100-yr Enc	1	9617	10317
21.41	Cont. 100-yr Enc	1	9500	10100
21.35	Cont. 100-yr Enc	1	9400	10105
21.31	Cont. 100-yr Enc	1	9450	10100
21.25	Cont. 100-yr Enc	1	9310	10055
21.18	Cont. 100-yr Enc	1	9200	10100
21.11	Cont. 100-yr Enc	1	9350	10125
21.05	Cont. 100-yr Enc	1	9380	10075

20.98	Cont. 100-yr Enc	1	9390	10060
20.9	Cont. 100-yr Enc	1	9550	10220
20.79	Cont. 100-yr Enc	1	9500	10160
20.71	Cont. 100-yr Enc	1	9500	10310
20.64	Cont. 100-yr Enc	1	9500	10350
20.62	Cont. 100-yr Enc	1	9485	10370
20.48	Cont. 100-yr Enc	1	9424	10330
20.38	Cont. 100-yr Enc	1	9209	10415
20.26	Cont. 100-yr Enc	1	9190	10395
20.16	Cont. 100-yr Enc	1	9202	10489.7
20.05	Cont. 100-yr Enc	1	9420	10473.12
19.92	Cont. 100-yr Enc	1	9710	10393.31
19.83	Cont. 100-yr Enc	1	9770	10420
19.72	Cont. 100-yr Enc	1	9825	10550
19.62	Cont. 100-yr Enc	1	9966	10730.51
19.52	Cont. 100-yr Enc	1	9901	10581
19.41	Cont. 100-yr Enc	1	9660	10610
19.26	Cont. 100-yr Enc	1	9430	10065
19.18	Cont. 100-yr Enc	1	9330	10080
19.07	Cont. 100-yr Enc	1	9485	10315
18.96	Cont. 100-yr Enc	1	9639	10480
18.84	Cont. 100-yr Enc	1	9576	10140
18.74	Cont. 100-yr Enc	1	9380	10125
18.57	Cont. 100-yr Enc	1	9700	10480
18.49	Cont. 100-yr Enc	1	9832	10475
18.29	Cont. 100-yr Enc	1	9630	10330
18.23	Cont. 100-yr Enc	1	9630	10330
18.16	Cont. 100-yr Enc	1	9752	10425
18.09	Cont. 100-yr Enc	1	9895	10610
17.95	Cont. 100-yr Enc	1	9818.68	10595
17.84	Cont. 100-yr Enc	1	9760	10665
17.78	Cont. 100-yr Enc	1	9642.06	10578
17.65	Cont. 100-yr Enc	1	9423.7	10270
17.57	Cont. 100-yr Enc	1	9516.45	10263
17.48	Cont. 100-yr Enc	1	9488.92	10340
17.39	Cont. 100-yr Enc	1	9758	10471
17.3	Cont. 100-yr Enc	1	9628	10550
17.18	Cont. 100-yr Enc	1	9788	10680
17.06	Cont. 100-yr Enc	1	9650	10520
16.96	Cont. 100-yr Enc	1	9914	10370
16.87	Cont. 100-yr Enc	1	9855.48	10152.83
16.86	Cont. 100-yr Enc	1	9850.97	10149.03
16.68	Cont. 100-yr Enc	1	9940	10590
16.49	Cont. 100-yr Enc	1	9906	10430
16.27	Cont. 100-yr Enc	1	9760	10045
16.19	Cont. 100-yr Enc	1	9600	10077
16.07	Cont. 100-yr Enc	1	9760	10130
15.89	Cont. 100-yr Enc	1	9817	10210
15.75	Cont. 100-yr Enc	1	9477	10116
15.55	Cont. 100-yr Enc	1	9890	10182
15.41	Cont. 100-yr Enc	1	9968	10353
15.22	Cont. 100-yr Enc	1	9977	10500
15.12	Cont. 100-yr Enc	1	9975	10351
15.06	Cont. 100-yr Enc	1	9972	10390
14.89	Cont. 100-yr Enc	1	9600	10100
14.74	Cont. 100-yr Enc	1	9700	10100
14.54	Cont. 100-yr Enc	1	9950	10480
14.3	Cont. 100-yr Enc	1	9210	10160
14.07	Cont. 100-yr Enc	1	8805	10529
13.86	Cont. 100-yr Enc	1	8708	10232
13.66	Cont. 100-yr Enc	1	9055	10482
13.55	Cont. 100-yr Enc	1	9160	10494
13.4	Cont. 100-yr Enc	1	9670	10602
13.28	Cont. 100-yr Enc	1	9537	10802
13.16	Cont. 100-yr Enc	1		
13.08	Cont. 100-yr Enc	1		
13.04	Cont. 100-yr Enc	1		
13.02	Cont. 100-yr Enc	1		
13	Cont. 100-yr Enc	1		

FLOW DATA

Flow Title: 100-yr Controlling Q's
Flow File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.f11

Flow Data (cfs)

River	Reach	RS	Cont. 100-yr	Cont. 100-yr Enc

RIVER-1	Reach-1	26.17	8811	8811
RIVER-1	Reach-1	24.74	11837	11837
RIVER-1	Reach-1	24.12	12587	12587
RIVER-1	Reach-1	23.55	24400	24400
RIVER-1	Reach-1	22.79	27300	27300
RIVER-1	Reach-1	18.57	27700	27700
RIVER-1	Reach-1	17.95	27300	27300
RIVER-1	Reach-1	16.68	26700	26700

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
RIVER-1	Reach-1	Cont. 100-yr		Known WS = 1533.7
RIVER-1	Reach-1	Cont. 100-yr Enc		Known WS = 1534.7

GEOMETRY DATA

Geometry Title: Updated geometry, n values and CHBsurvey
Geometry File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.g04

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 26.17

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9940	2138.3	9957	2136.6	9967	2132.3	9980	2122.5	9988	2121.9
10000	2121.7	10020	2128.2	10039	2129.9	10063	2131.5	10085	2131.2
10098	2131.5	10122	2130.8	10141	2129.5	10155	2130.1	10165	2130.2
10194	2131.5	10227	2131.8	10274	2131.3	10286	2130.2	10302	2128.2
10313	2129.3	10335	2130.8	10373	2131.2	10391	2129.7	10403	2128.3
10418	2129.7	10448	2132.6	10472	2131.9	10501	2132.9	10535	2133.3
10566	2133.4	10609	2132.5	10640	2131.9	10651	2131.7	10668	2132.7
10720	2134.4	10759	2135.1	10820	2136.1	10860	2136.5	10933	2136
10948	2136.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9940	.045	9967	.045	10063	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967	10063	1225	1132	1040	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10472	10948	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.95

INPUT
Description:
Station Elevation Data num= 81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9254	2123.2	9297	2119.8	9322	2117.2	9353	2116.1	9368	2116.6
9416	2115.7	9426	2115.9	9474	2115.4	9487	2112.1	9494	2114.1
9507	2113.7	9517	2111.4	9520	2111.4	9529	2115	9568	2116.1
9609	2115.2	9623	2114	9634	2115.1	9657	2115.8	9681	2116.6
9694	2115.6	9727	2116.5	9777	2117.5	9802	2117.4	9841	2117.8
9912	2117.6	9923	2119	9936	2118.9	9941	2117.6	9969	2117.5
9986	2118.1	10000	2110.8	10020	2110.4	10032	2113.5	10046	2114.2
10057	2117.7	10072	2119.5	10096	2119.9	10103	2119.4	10132	2119.1
10144	2117.6	10154	2117.5	10169	2119.2	10217	2119.1	10258	2118.1
10282	2118.8	10315	2118.9	10363	2118.6	10380	2116.5	10387	2116.4
10398	2117.4	10425	2117.6	10461	2117.2	10490	2116.9	10512	2116
10538	2116.2	10580	2115.9	10593	2116.3	10616	2116.8	10644	2116.5
10658	2116.2	10680	2116.1	10729	2116.1	10781	2115.9	10829	2115.7
10882	2115.5	10993	2115.9	11030	2115.8	11108	2115	11161	2114.4
11189	2113.5	11205	2110.3	11222	2110.5	11235	2112.9	11242	2109.1
11249	2109.1	11264	2112.8	11290	2114.5	11327	2117	11367	2118.6
11510	2123.3								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9254	.045	9681	.035	9986	.045	10057	.055	10363	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986	10057	600	620.6	625	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9254	9923		10616	11510	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.83

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9211	2114.5	9263	2109.9	9290	2108.9	9328	2107.8	9372	2106.5
9395	2103.6	9420	2106.3	9450	2108.1	9502	2109.1	9536	2108.8
9569	2109.2	9592	2108.7	9604	2107.9	9618	2108.9	9668	2109.6
9705	2110.4	9758	2110.5	9812	2111	9853	2110.6	9906	2110.8
9914	2111.8	9938	2110.2	9966	2108.1	10000	2106	10012	2105.1
10025	2105.3	10040	2112.7	10048	2111	10092	2111.1	10157	2110.8
10190	2109.6	10217	2110.4	10245	2109.9	10299	2110.7	10312	2113
10327	2113.3	10343	2113.7	10361	2113.6	10375	2113.1	10387	2111.3
10441	2111.1	10482	2110.5	10503	2110.8	10535	2111.1	10556	2110.7
10612	2110	10639	2108.4	10665	2109.7	10700	2110.1	10738	2109.5
10759	2108.4	10779	2108.1	10805	2108.8	10831	2109.2	10856	2108.6
10900	2109.7	10946	2110.1	10987	2109.6	11018	2109.2	11025	2109.6
11062	2109	11099	2108.7	11124	2108.2	11135	2106.6	11149	2108.1
11202	2106.3	11211	2104.6	11220	2104.6	11228	2107	11262	2108
11305	2109.4	11347	2110.1	11359	2110.5	11456	2114		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9211	.055	9502	.045	9914	.045	10040	.055	10299	.035
10387	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9914	10040	220	250	350	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9211	9914		10327	11456	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.78

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9155	2110	9185	2108	9215	2106	9245	2104	9275	2102
9290	2102	9325	2104	9380	2105	9435	2104	9493	2105
9558	2104.5	9580	2106	9660	2107.5	9765	2107	9795	2108
9938	2108	9960	2106	9965	2104	9975	2102	10025	2100
10045	2100	10070	2102	10075	2104	10085	2106	10100	2108
10110	2110	10139	2111.77	10158	2112.14	10177	2111.84	10200	2110
10210	2108	10370	2106	10625	2106	10720	2104	10775	2104
10800	2102	10821	2102	10839	2103	10858	2102	10868	2102
10915	2104	10955	2102	10970	2100	10980	2100	11015	2102
11040	2104	11075	2106	11105	2108	11175	2110		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9155	.055	9380	.045	9938	.045	10110	.035	10210	.045
10625	.055	10915	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9938	10110	195	195	195	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9155	9938		10158	11175	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.74

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9107.45	2110	9146.66	2108	9182.75	2106	9220	2104	9270	2102
9295	2100	9350	2100	9385	2098	9400	2096	9425	2098
9440	2100	9470	2102	9545	2104	9685	2103	9850	2104
9900	2104	9915	2102	9925	2100	10100	2100	10105	2102
10115	2104	10235	2104	10255	2103	10315	2104	10332	2102

```
   10362  2103.5   10422    2102   10442    2102   10547  2102.8   10595    2102
   10665    2100   10735    2098   10750    2098   10760    2100   10835    2102
   10845    2102   10915    2100   10935    2098   10945    2098   10950    2100
   10960    210210965.92 2102.2611011.96    210411057.85    2106   11135    2108
 11219.6    2110

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9107.45    .055    9440    .045    9545    .035    9900    .045   10115    .055
   10595    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9900   10115                 84      84      84              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9107.45 9903.58 2109.6710111.11 11219.6  2109.6

BRIDGE                  RIVER: RIVER-1
REACH: Reach-1             RS: 25.735

INPUT
Description: New River Bridge
Distance from Upstream XS =       1
Deck/Roadway Width        =      82
Weir Coefficient          =     2.6
Bridge Deck/Roadway Skew  =       0
Upstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  9877.9 2109.73    2100 9888.38 2109.82    2100 9888.38 2111.64    2100
  9927.1 2111.83    2100  9927.1 2111.83 2105.84 10072.9 2113.27 2107.28
 10072.9 2113.27    210010111.62 2113.46    210010111.62 2111.64    2100
 10122.1 2111.73    2100

Upstream Bridge Cross Section Data
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9107.45    2110 9146.66    2108 9182.75    2106    9220    2104    9270    2102
    9295    2100    9350    2100    9385    2098    9400    2096    9425    2098
    9440    2100    9470    2102    9545    2104    9685    2103    9850    2104
    9900    2104    9915    2102    9925    2100   10100    2100   10105    2102
   10115    2104   10235    2104   10255    2103   10315    2104   10332    2102
   10362  2103.5   10422    2102   10442    2102   10547  2102.8   10595    2102
   10665    2100   10735    2098   10750    2098   10760    2100   10835    2102
   10845    2102   10915    2100   10935    2098   10945    2098   10950    2100
   10960    210210965.92 2102.2611011.96    210411057.85    2106   11135    2108
 11219.6    2110

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9107.45    .055    9440    .045    9545    .035    9900    .045   10115    .055
   10595    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
          9900   10115              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9107.45 9903.58 2109.6710111.11 11219.6  2109.6

Downstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  9877.9 2109.73    2100 9888.38 2109.82    2100 9888.38 2111.64    2100
  9927.1 2111.83    2100  9927.1 2111.83 2105.84 10072.9 2113.27 2107.28
 10072.9 2113.27    210010111.62 2113.46    210010111.62 2111.64    2100
 10122.1 2111.73    2100

Downstream Bridge Cross Section Data
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9107.45    2110 9146.66    2108 9182.75    2106    9220    2104    9270    2102
    9295    2100    9350    2100    9385    2098    9400    2096    9425    2098
    9440    2100    9470    2102    9545    2104    9685    2103    9850    2104
    9900    2104    9915    2102    9925    2100   10100    2100   10105    2102
   10115    2104   10235    2104   10255    2103   10315    2104   10332    2102
   10362  2103.5   10422    2102   10442    2102   10547  2102.8   10595    2102
   10665    2100   10735    2098   10750    2098   10760    2100   10835    2102
   10845    2102   10915    2100   10935    2098   10945    2098   10950    2100
   10960    210210965.92 2102.2611011.96    210411057.85    2106   11135    2108
 11219.6    2110
```

```
Manning's n Values          num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9107.45    .055    9440    .045    9545    .035    9900    .045   10115    .055
   10595    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
          9900   10115            .3        .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9107.45 9903.58 2107.94 10117.5 11219.6    2108

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 Piers =  2

Pier Data
Pier Station     Upstream=  9975.7    Downstream=  9975.7
Upstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109
Downstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109

Pier Data
Pier Station     Upstream= 10024.3    Downstream= 10024.3
Upstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109
Downstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum                Cd   =     1.2
       Yarnell                 KVal =      .9
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.73

INPUT
Description:
Station Elevation Data     num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9107.45    2110 9146.66    2108 9182.75    2106    9220    2104    9270    2102
    9295    2100    9350    2100    9385    2098    9400    2096    9425    2098
    9440    2100    9470    2102    9545    2104    9685    2103    9850    2104
    9900    2104    9915    2102    9925    2100   10100    2100   10105    2102
   10115    2104   10235    2104   10255    2103   10315    2104   10332    2102
   10362  2103.5   10422    2102   10442    2102   10547  2102.8   10595    2102
   10665    2100   10735    2098   10750    2098   10760    2100   10835    2102
   10845    2102   10915    2100   10935    2098   10945    2098   10950    2100
   10960    210210965.92 2102.2611011.96    210411057.85    2106   11135    2108
 11219.6    2110

Manning's n Values          num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9107.45    .055    9440    .045    9545    .035    9900    .045   10115    .055
```

```
   10595     .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9900   10115              200     200     200             .3       .5
Ineffective Flow     num=        2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9107.45 9903.58 2107.94 10117.5 11219.6    2108

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.69

INPUT
Description:
Station Elevation Data    num=      45
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
    9130     2104    9180     2102    9225     2100    9280     2098    9290     2096
    9300     2094    9320     2094    9330     2096    9340     2098    9460     2100
    9630     2100    9660     2102    9720     2104    9730     2106    9795     2108
    9801  2109.08    9820  2109.48    9839  2109.21    9865     2108    9875     2106
    9880     2104    9885     2102    9890     2100    9970     2100    9990     2098
   10010     2098   10020     2100   10025     2101   10105     2100   10135     2102
   10160     2102   10340     2100   10430     2098   10515     2096   10550     2096
   10575     2098   10650     2099   10670     2098   10685     2096   10710     2096
   10765     2098   10810     2100   10835     2102   10880     2104   10890     2104

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9130    .055    9460    .045    9630    .035    9885    .045   10025    .055
   10430    .045   10765    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9970   10025              250     250     250             .3       .5
Ineffective Flow     num=        1
   Sta L   Sta R    Elev
    9130    9820

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.63

INPUT
Description:
Station Elevation Data    num=      62
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
    9056   2104.7    9103   2102.4    9143   2100.5    9174   2098.6    9198   2095.5
    9214   2092.8    9227   2089.7    9244   2090.3    9261   2093.5    9275   2094.7
    9289   2095.8    9335   2097.9    9384   2099.1    9438   2099.6    9493   2099.9
    9543   2100.2    9596   2100.5    9624   2100.9    9647   2106.9    9662   2107.2
    9693   2106.8    9707   2106.2    9728   2102.4    9762   2101.7    9788   2101.2
    9832   2101.2    9886   2101.1    9904   2100.3    9919   2098.8    9934   2098.6
    9939     2101    9948     2096    9954   2095.4    9965   2095.2    9979     2096
   10000   2095.7   10007   2099.2   10040   2099.2   10042   2098.1   10065   2098.2
   10088   2099.2   10155   2099.8   10209   2099.6   10251   2099.2   10299     2098
   10317   2096.3   10334   2097.8   10367   2097.6   10381     2097   10417   2096.4
   10431     2093   10444     2093   10458   2094.6   10468   2094.7   10477   2095.1
   10487   2096.5   10508   2096.8   10530   2093.2   10540   2093.3   10570   2096.9
   10603   2101.2   10627   2104.4

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9056    .055    9335    .045    9624    .035    9939    .045   10007    .055
   10417    .045   10570    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9939   10007              375   365.7     350             .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev
    9056    9707

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.56

INPUT
Description:
Station Elevation Data    num=      69
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
    8984   2100.4    9019   2098.8    9059     2098    9098     2096    9131     2094
    9168     2093    9193   2092.3    9224   2089.6    9237   2086.1    9256   2085.5
    9268   2087.2    9288   2092.9    9307   2094.5    9336   2095.3    9368   2095.4
    9413   2095.2    9460     2095    9487     2095    9519   2094.8    9538   2094.4
    9554   2098.2    9566   2098.6    9595   2098.5    9608   2097.9    9624     2095
    9642   2094.1    9652   2095.3    9680   2096.3    9687   2095.9    9706   2096.2
```

9716	2095.4	9745	2095.2	9777	2094.6	9800	2094.9	9817	2094.6
9823	2093.7	9842	2094.9	9883	2094.8	9898	2095.2	9927	2095.2
9952	2094.7	9968	2092.3	9977	2091.6	9996	2091.8	10000	2091.9
10010	2095.6	10048	2095.6	10094	2095.1	10121	2093.8	10134	2094.6
10169	2094.8	10215	2094	10221	2093.5	10231	2094.1	10277	2094.3
10298	2094.6	10305	2094	10315	2094.7	10348	2094.9	10375	2094.8
10390	2092.6	10406	2086	10413	2085.6	10422	2086.2	10446	2091
10478	2093	10511	2094.8	10542	2096.6	10564	2097.9		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8984	.055	9307	.045	9538	.035	9680	.055	9952	.045
10010	.055	10390	.045	10446	.035				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9952	10010	535	583.5	600	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8984	9608	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.45

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9124	2092.6	9188	2091	9236	2089.7	9290	2088.1	9314	2086.9
9329	2085.1	9367	2084.6	9383	2081	9394	2081	9412	2083.6
9434	2085.2	9464	2086.6	9517	2087.6	9557	2088.1	9570	2088
9600	2088.4	9633	2089.3	9650	2088.7	9679	2088.5	9715	2088.2
9731	2088.9	9761	2089.3	9775	2089.8	9813	2090.2	9861	2090.2
9909	2089.6	9941	2088.8	9966	2088.8	9975	2085.1	10000	2084.8
10010	2086.9	10026	2086.9	10038	2088.5	10053	2086.9	10072	2087.9
10093	2088.3	10113	2088.1	10127	2084.7	10132	2084.6	10148	2087.4
10182	2088	10230	2088.5	10266	2088.2	10301	2087.8	10312	2085.6
10322	2087.2	10347	2087.7	10374	2087.3	10388	2086.2	10394	2086.2
10414	2087.9	10440	2088.5	10488	2089	10513	2088.4	10533	2086.7
10551	2086.8	10575	2085.6	10598	2082	10615	2081.7	10641	2082.7
10653	2087.7	10679	2089.2	10705	2089.8	10742	2090.3	10771	2091.5
10780	2090.5	10793	2092.7						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9124	.055	9434	.045	9517	.035	9861	.045	9966	.045
10038	.055	10575	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9966	10038	375	362.2	375	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9124	9861	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.38

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8816	2090.3	8849	2088.6	8903	2087.3	8954	2085.3	9005	2083.9
9032	2082.6	9045	2082.1	9053	2082.7	9066	2082.1	9076	2080.1
9083	2080	9098	2081.8	9126	2081.8	9174	2083.8	9211	2084.9
9235	2085.4	9244	2085.7	9247	2084.8	9262	2085.9	9276	2086
9287	2085.7	9308	2085	9333	2084.6	9379	2084.1	9415	2083.9
9447	2083.6	9487	2082.2	9510	2081.2	9523	2081.6	9549	2082
9565	2081.8	9571	2082.4	9601	2082.5	9624	2082.8	9672	2083.3
9697	2083.3	9725	2082.4	9760	2083.4	9775	2084.1	9795	2084
9810	2083.4	9830	2084.8	9865	2084.7	9873	2081.6	9883	2081.7
9892	2082.7	9910	2083.3	9940	2082.8	9952	2080.6	9967	2082.1
9984	2080.3	10000	2079.8	10012	2083.8	10026	2083.2	10037	2083.3
10071	2081.7	10085	2081.5	10094	2084	10109	2084.6	10140	2084.3
10152	2082.2	10162	2084.6	10174	2084	10194	2080.9	10203	2084.5
10236	2084.5	10262	2078.2	10281	2078.9	10296	2084.1	10336	2085.8
10404	2087	10466	2089.1	10498	2089.3	10528	2090.7	10546	2091.2

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8816	.055	9174	.045	9244	.035	9287	.055	9697	.07
9865	.045	10012	.07	10236	.045	10296	.055		

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9865 10012 255 538.7 760 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev
8816	9287	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.28

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8848	2089.8	8893	2088.3	8943	2087.1	8997	2086.2	9033	2085
9077	2083.4	9099	2081.8	9134	2081.2	9154	2080.2	9166	2078.5
9174	2078	9181	2080.2	9199	2080.4	9222	2081.1	9234	2082.1
9269	2082.8	9292	2084.1	9320	2085	9323	2084.5	9330	2084.8
9337	2085.5	9360	2085.8	9378	2085.7	9386	2084.3	9409	2084
9433	2083.4	9450	2082.5	9487	2082	9498	2082.2	9523	2082.7
9552	2082.6	9577	2082.3	9606	2081.3	9632	2079.8	9648	2079.1
9657	2079.9	9675	2080.1	9687	2078.5	9707	2079.9	9725	2079.3
9767	2079.4	9791	2079.5	9807	2079	9838	2079.3	9849	2078.9
9887	2078.6	9899	2077.3	9919	2078.7	9954	2078.7	9965	2077.8
9978	2075.1	9995	2072.6	10000	2072.3	10014	2071.5	10024	2074
10052	2089.4	10060	2090.5						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8848	.055	9320	.035	9378	.055	9954	.045	10052	.045

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9954 10052 950 867.5 715 .3 .5
Ineffective Flow num= 1

Sta L	Sta R	Elev
8848	9552	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.12

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9560	2078.3	9570	2077.5	9586	2077.5	9612	2076.9	9632	2076.2
9637	2077.3	9654	2074.7	9667	2074.1	9676	2075.1	9703	2074.3
9721	2072.5	9740	2071.6	9774	2069.4	9798	2066.9	9819	2069.4
9826	2068.6	9836	2069.9	9855	2071	9872	2071.7	9903	2074.9
9928	2074.9	9949	2073.5	9976	2066.7	9985	2066.2	10000	2064.7
10008	2065.2	10033	2065	10053	2070.6	10079	2072.1	10092	2071.5
10104	2072.4	10113	2075.3	10125	2075	10138	2071.2	10173	2073
10184	2072.5	10211	2072	10240	2072.3	10242	2077.9	10253	2072.5
10267	2072.4	10289	2075.6	10312	2082.4				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9560	.055	9949	.045	10053	.07

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9949 10053 900 867.7 800 .1 .3
Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9560	9928		10113	10312	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.95

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9846	2075.2	9874	2073.3	9901	2070	9920	2064.7	9939	2064.6
9953	2064.3	9975	2063.7	9989	2057.4	10000	2057.7	10007	2059.4
10018	2059.9	10024	2059.3	10033	2060.4	10069	2060.5	10086	2059.2
10097	2060.5	10121	2060.3	10135	2061.5	10159	2062.9	10173	2062.7
10185	2062.2	10201	2060.8	10204	2061.1	10226	2060.5	10236	2061.2
10248	2061.2	10258	2060.2	10266	2060	10275	2063.2	10296	2070.9

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9846	.07	9920	.045	9975	.045	10097	.055

```
Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          9975   10097              485   405.6     285              .1       .3

CROSS SECTION           RIVER: RIVER-1
REACH: Reach-1             RS: 24.87

INPUT
Description:
Station Elevation Data     num=      24
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9592  2071.9    9602  2067.9    9659  2061.1    9754  2061.7    9770  2061.3
    9816  2061.2    9870  2061.7    9911  2061.6    9917  2059.7    9929  2061.1
    9962  2060.7    9978    2055   10000  2054.6   10012  2056.3   10042  2056.4
   10057  2057.8   10071  2059.1   10100  2058.6   10124  2057.2   10135  2060.1
   10157  2060.8   10172  2061.5   10198  2062.8   10237    2071

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9592    .055    9659    .045    9911    .055    9962    .045   10071    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          9962   10071              775   732.8     685              .1       .3

CROSS SECTION           RIVER: RIVER-1
REACH: Reach-1             RS: 24.74

INPUT
Description:
Station Elevation Data     num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9431  2065.3    9450  2062.9    9482  2060.4    9498  2058.1    9511  2057.8
    9536    2057    9547  2056.2    9561  2055.2    9579  2054.7    9591  2055.9
    9620  2055.8    9659  2055.4    9701  2055.4    9721  2055.2    9748  2055.4
    9770  2055.3    9802  2055.6    9824  2054.7    9841  2055.2    9891  2055.4
    9906  2055.2    9937  2055.1    9961    2055    9981  2045.8   10000  2046.1
   10011  2048.3   10036  2049.5   10065  2051.2   10086  2053.8   10124  2053.9
   10146  2054.1   10180  2053.1   10189    2052   10200    2052   10217  2055.6
   10239  2055.5   10273  2057.7   10328  2062.1   10369  2063.9   10394  2065.4
   10436  2065.9

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9431    .035    9961    .045   10086     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          9961   10086              615   668.8     615              .1       .3

CROSS SECTION           RIVER: RIVER-1
REACH: Reach-1             RS: 24.61

INPUT
Description:
Station Elevation Data     num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9419  2052.5    9428  2050.4    9460  2049.9    9502  2049.7    9538  2049.3
    9575  2049.2    9619  2048.9    9675  2048.8    9704  2048.7    9738  2048.4
    9755  2044.8    9775  2044.9    9782  2046.7    9798  2047.7    9821  2048.5
    9858  2048.6    9893    2048    9915    2046    9921  2046.2    9934  2045.9
    9944  2046.1    9959  2042.9    9984  2040.7   10000  2040.2   10012  2045.3
   10023  2046.5   10037  2045.5   10050    2047   10074  2048.1   10086  2049.2
   10096  2049.8   10130  2050.2   10157  2050.7   10182    2051   10196  2051.4
   10219  2051.6   10244  2051.8   10250  2052.4   10264  2052.8   10291  2054.9
   10312  2056.3

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9419    .035    9738    .045    9798     .07    9944    .045   10023     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          9944   10023              730   668.9     725              .1       .3

CROSS SECTION           RIVER: RIVER-1
REACH: Reach-1             RS: 24.48

INPUT
Description:
Station Elevation Data     num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9589    2047    9620  2043.8    9644  2042.3    9664  2042.4    9675  2039.1
    9685  2039.4    9706  2039.2    9717  2038.5    9726  2040.8    9753  2042.6
    9785  2043.3    9802  2040.4    9842  2040.4    9882  2041.8    9921  2041.7
```

9951	2041.5	9962	2037.2	10000	2036.8	10008	2038.7	10037	2037.8
10048	2042.9	10072	2042.5	10105	2044.3	10138	2046.9	10176	2048.9

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9589	.055	9675	.035	9717	.055	9951	.045	10048	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10048	385	501.7	550	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.38

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9708	2051.6	9743	2042	9780	2037.7	9794	2036	9811	2035.7
9834	2035.6	9863	2035.8	9875	2033.7	9888	2033.6	9897	2031.6
9911	2032.7	9930	2032.8	9944	2031.5	9954	2033.6	9974	2034
9981	2032.9	10000	2032.7	10004	2034	10038	2035.1	10077	2036.3
10089	2035.5	10095	2036.1	10138	2037.2	10160	2043	10176	2037.4
10193	2038	10210	2037.8	10223	2039.4	10290	2039.9	10329	2039.4
10377	2039.7	10388	2041	10437	2041.6	10478	2044	10503	2045.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9708	.055	9888	.045	10004	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9888	10004	640	708.8	450	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10160	10503	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.25

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9735	2047.9	9770	2040.4	9798	2037.4	9809	2035.3	9832	2034.2
9842	2033.9	9867	2034.4	9901	2033.8	9951	2034.6	9968	2025.5
9981	2024.8	10000	2024.2	10004	2024	10018	2034.5	10045	2032.8
10052	2033.1	10070	2031.6	10114	2032	10129	2031	10144	2031
10162	2027.1	10175	2027.4	10199	2027.2	10247	2035.8	10261	2034.3
10281	2033.5	10295	2034.3	10311	2033.9	10361	2035	10407	2035.5
10444	2036	10491	2037.1	10532	2038.2	10565	2038.8	10589	2040.1

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9735	.055	9809	.045	9951	.045	10018	.055	10144	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10018	765	708.6	665	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10247	10589	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.12

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9627	2040	9648	2033.7	9664	2033.1	9693	2033.6	9726	2033.9
9737	2028.6	9750	2028.2	9778	2028.8	9813	2028.5	9838	2028
9859	2027.8	9911	2026.6	9920	2024.1	9941	2023.5	9944	2020.6
9956	2020.7	9961	2021.2	9986	2021.6	10000	2021.8	10027	2022.2
10043	2023.4	10067	2027.2	10094	2028.1	10126	2027.9	10153	2028.3
10187	2029.3	10228	2029.8	10272	2030.5	10330	2032.1	10374	2033.3
10393	2034.3	10430	2035.9	10455	2036.7	10506	2038	10545	2039.2
10570	2040.1								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9627	.045	9911	.045	10067	.035

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

	9911	10067		450	451.7	440	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.03

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9750	2028	9768	2019.6	9783	2023.4	9793	2023.5	9806	2021.3
9819	2018.8	9824	2018.8	9838	2022.7	9872	2024.3	9889	2024.4
9903	2023.6	9917	2022.7	9932	2025.1	9958	2021.5	9976	2017.5
10000	2017.6	10003	2017.8	10023	2022.1	10063	2021	10077	2021.8
10095	2021.2	10109	2017.8	10123	2017.9	10134	2019.5	10146	2019.9
10165	2018.6	10194	2023.3	10218	2024	10256	2022.9	10289	2023.4
10362	2024.1	10370	2023.3	10375	2024.5	10405	2024.9	10435	2026.5
10485	2026.3	10501	2027.5	10536	2029.8				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9750	.045	9932	.045	10023	.055	10194	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9932	10023	585	457.8	300	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.94

INPUT
Description: THE PRESENCE OF INNER-CHANNEL ISLANDS AT THIS CROSS-SECTION CAUSE FLOODWAY TOPWID TO EXCEED FLOODPLAIN TOPWID HOWEVER, FLOODWAY IS WITHIN BOUNDARIES OF FLOODPLAIN
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9516	2027.1	9533	2017.8	9551	2016	9572	2015.9	9596	2019.4
9626	2019.8	9671	2020.8	9700	2021	9725	2021.4	9769	2021
9789	2020.7	9809	2021.5	9827	2020.9	9848	2021	9880	2020.6
9894	2017.4	9919	2016.4	9946	2015.4	9968	2013.2	9979	2011.7
10000	2010.6	10002	2010.4	10020	2020.1	10036	2020.1	10042	2015.1
10055	2020.1	10073	2020.4	10100	2020.9	10118	2020.8	10131	2021.6
10153	2021.9	10190	2023.1	10226	2025.2	10261	2026.9	10293	2029.9

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9516	.045	9596	.055	9880	.045	10020	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9880	10020	340	403.2	435	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.87

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9487	2023.3	9499	2022.3	9550	2020.6	9575	2020.9	9594	2019.9
9628	2018	9648	2013.9	9662	2013.6	9669	2013.8	9681	2013.5
9700	2015.5	9728	2016.7	9769	2017	9804	2016.9	9825	2016.1
9842	2017	9875	2017.1	9907	2017.7	9934	2016.7	9951	2010.1
9969	2009.9	9975	2009.2	10000	2008.8	10006	2009	10021	2016.7
10039	2017	10054	2016.6	10083	2016.7	10098	2017.3	10134	2018
10166	2018.8	10207	2020.4	10234	2020.9	10273	2023.6	10306	2025.8

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9487	.045	9628	.045	9728	.07	9934	.045	10021	.1
10098	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9934	10021	1125	1179.6	1200	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.64

INPUT
Description:
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9081	2012	9109	2009.1	9138	2010.9	9200	2010.6	9231	2010.6
9271	2010	9295	2008.5	9317	2009.8	9349	2009.9	9387	2008.2

9404	2009.2	9421	2009.5	9435	2008.6	9458	2008.8	9510	2007.8
9517	2007.1	9528	2007	9537	2007.6	9556	2007.1	9572	2008.1
9599	2007.9	9630	2007.7	9658	2006.6	9671	2006.6	9677	2005.6
9691	2005.5	9701	2007.7	9715	2007.4	9720	2008.3	9732	2008.1
9747	2006.4	9767	2007.3	9799	2006.7	9846	2004.9	9855	2003.6
9863	2002.8	9877	2004.4	9889	2003	9912	2002.9	9925	2004.6
9941	2003.7	9970	2003.6	9978	2000.1	10000	2000	10005	2000.5
10019	2005.1	10032	2004.9	10039	2003.1	10054	2006	10071	2006.1
10078	2005.8	10097	2007	10114	2009.5	10136	2012.2	10155	2015.7

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9081	.055	9846	.07	9970	.045	10019	.1

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970	10019	525	500.2	460	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9081	9421	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.55

INPUT
Description: Cross Section 23.55 Lengthened 44 feet At Right Overbank Using Topographic Maps

Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9263	2009.4	9315	2008.5	9335	2008.3	9375	2007.2	9405	2006.5
9440	2005.9	9466	2005.3	9486	2004.5	9531	2003.7	9555	2003.9
9559	2004.9	9569	2003.2	9588	2003.1	9594	2003.9	9603	2003.2
9647	2002.1	9661	2001.6	9696	2002.5	9730	2001.9	9743	1996.9
9766	1996.7	9781	1999.4	9791	1999	9801	1999.7	9809	1999.5
9835	2000.3	9840	1999.1	9849	1999.5	9869	1999.2	9882	2000.3
9905	2000.6	9916	2001.2	9945	2000.5	9959	1997.4	9976	1997
10000	1997.7	10014	1997.9	10028	1999.2	10062	1999.6	10069	1999.4
10076	1997.9	10081	1997.7	10091	1998.5	10102	2001.1	10131	2001.7
10157	2001.3	10184	2000.2	10202	1998.8	10213	1999.1	10233	1998.6
10242	1997.8	10248	1997.9	10264	2003.1	10289	2006	10308	2010

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9263	.045	9730	.045	9781	.055	9945	.045	10102	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945	10102	325	545.1	595	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9263	9559	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.45

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9460	2004	9576	2001.8	9590	2001.7	9623	2000.8	9662	1999.9
9712	1999.2	9731	1998.8	9753	1998	9787	1997.6	9817	1998.1
9850	1997.8	9874	1993.1	9888	1991.8	9909	1991.4	9927	1993.8
9951	1994.2	9959	1995.1	9979	1994.8	9985	1991.5	9991	1991.5
10000	1991.8	10005	1992	10020	1993.9	10039	1993.4	10058	1994.5
10103	1995.7	10137	1994.5	10151	1994.5	10157	1993.7	10172	1994.8
10236	1994.3	10252	1989.9	10260	1991.7	10270	1991.5	10279	1988.5
10305	1988.4	10314	1989.5	10328	1989.5	10352	2000.1		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9460	.045	9787	.045	9927	.1	9979	.045	10020	.1
10270	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979	10020	530	623.5	630	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.33

INPUT

Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9541	1997.8	9565	1998	9582	1997.1	9646	1995.9	9703	1994.4
9741	1992.7	9769	1990.4	9809	1989.2	9819	1988.3	9835	1989.6
9858	1990.8	9896	1990.9	9924	1989.9	9942	1990.4	9963	1989
9981	1981.3	10000	1981.1	10004	1981.1	10017	1985.3	10026	1985.4
10038	1981.8	10048	1979.5	10057	1979.9	10065	1982	10082	1983.8
10100	1983.9	10111	1985.4	10129	1985.6	10146	1987.8	10164	1988.1
10182	1986.2	10202	1986.4	10222	1988.2	10253	1988.1	10269	1987.4
10289	1985.8	10314	1986.7	10333	1985.1	10339	1984.6	10352	1988.4
10368	1997.3	10386	2000.4						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9541	.055	9963	.045	10017	.045	10065	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9963	10017	490	432.6	375	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.25

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9293	1995.4	9364	1994.8	9421	1994	9518	1993.5	9602	1992.6
9609	1991.5	9613	1991.8	9632	1991.8	9639	1991.3	9660	1989.2
9694	1985	9713	1984.5	9766	1983.9	9801	1985.6	9827	1985.9
9861	1983.8	9874	1983.5	9900	1984	9928	1983.4	9945	1980.3
9954	1977.5	9973	1977.8	10000	1977.3	10025	1981.3	10054	1981.3
10078	1981.9	10105	1982.1	10118	1982.9	10150	1983.4	10165	1982.6
10181	1984.1	10208	1983	10226	1984.4	10257	1984.9	10299	1984.8
10332	1983	10353	1983	10361	1981.5	10374	1982.6	10385	1980.9
10400	1983	10408	1983.2	10424	1988.6				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9293	.055	9928	.045	10025	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9928	10025	675	619.4	550	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.13

INPUT
Description: Cross Section 23.12 Lengthened 138 feet At Left Overbank Using Topographic Maps

Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9370	1982	9508	1980.4	9530	1979.3	9541	1978.8	9554	1976.9
9580	1975.8	9638	1976.1	9690	1978	9720	1979.4	9787	1979.7
9868	1980	9895	1978.3	9917	1976.9	9932	1970.6	9945	1970.6
9951	1972	9965	1972.1	9979	1971	10000	1969.8	10011	1977.2
10035	1976.9	10067	1978	10101	1977.4	10129	1976.4	10151	1976.3
10162	1974.6	10170	1975.4	10183	1974.1	10212	1979.6	10262	1984.6
10301	1987.7	10311	1989.9	10332	1990.6				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9370	.035	9720	.055	9917	.045	10011	.1	10212	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9917	10011	730	880.2	900	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.96

INPUT
Description: Beginning of Montgomery Watson's Analysis Cross Section 22.96 Lengthened 339 feet At left overbank using topographic maps
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8982	1976	9119	1974	9307	1972	9320	1972.6	9386	1972.3
9440	1971.4	9470	1970.3	9513	1970	9589	1970.3	9618	1970.5
9642	1969.4	9660	1968	9669	1968.3	9686	1969.4	9718	1970

9775	1970.9	9827	1970.6	9844	1969.3	9876	1969.6	9900	1968.6
9951	1966	9963	1962.9	9977	1960.8	10000	1959.6	10016	1975.7
10023	1976.9	10050	1976.7	10090	1978	10124	1979.7	10128	1979.9

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8982	.055	9307	.035	9513	.07	9844	.1	9951	.045
10016	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10016	1025	1033	1031.3	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.86

INPUT
Description:

Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8772	1970	8806	1969	8932	1968	9108	1966	9274	1964
9360	1962	9434	1960	9442	1959.5	9452	1960	9480	1961
9530	1962	9585	1962.5	9636	1962	9646	1960	9651	1961
9660	1960	9672	1960.5	9686	1960	9690	1958	9702	1958
9718	1960	9834	1962	9888	1962.5	9912	1962	9968	1960
9976	1958	10000	1953.5	10024	1954	10030	1956	10034	1958
10078	1960	10108	1960.5	10124	1960	10192	1962	10202	1964
10232	1966	10262	1968	10300	1970	10440	1972		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8772	.055	9672	.045	9718	.055	9834	.035	9912	.1
9968	.045	10034	.1	10108	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968	10034	370	370	370	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.79

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9140	1962	9195	1961	9240	1960	9270	1959	9310	1958
9380	1957	9390	1956	9410	1955.5	9420	1956	9440	1957
9510	1958	9550	1957	9590	1956.7	9660	1956	9690	1956
9700	1958	9720	1958.2	9785	1959.8	9830	1958	9880	1959
9900	1958	9930	1956	9940	1954	9965	1952	9985	1950
10000	1950	10010	1952	10040	1954	10060	1956	10100	1958
10125	1960	10165	1961	10295	1962				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9140	.055	9880	.1	9930	.045	10060	.1	10125	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10060	295	316.8	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.73

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9200	1960	9300	1955.5	9310	1955	9357	1954	9390	1953
9410	1953	9435	1954	9450	1954.2	9460	1954	9480	1953
9510	1952	9520	1952.5	9530	1952	9540	1954	9570	1953
9580	1952	9580.5	1953	9590	1953	9600	1954	9620	1954
9670	1954	9690	1956	9720	1957	9750	1956	9780	1954.8
9810	1956	9840	1956.2	9870	1956	9880	1954	9900	1952
9965	1950	9980	1948	9985	1947	10010	1947	10010	1948
10020	1950	10025	1954	10030	1956	10085	1957.5	10125	1958
10450	1960								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9200	.055	9870	.1	9965	.045	10030	.045

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9965   10030              330   316.8     310             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 22.67

INPUT
Description:
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9165    1960    9230    1957    9290    1956    9400    1954    9430    1952
    9440    1950    9450    1948    9460    1945    9480    1948    9540    1949
    9560    1950    9610  1950.7    9665    1950    9680    1949    9690    1949
    9700    1950    9730    1951    9785    1951    9800  1950.3    9850    1952
    9930    1952    9950    1950    9980    1946   10000  1944.5   10020  1944.5
   10040    1946   10050    1950   10070    1950   10087    1952   10120    1954
   10195  1954.6   10275    1956

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9165    .045    9480    .055    9930    .045   10050    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9930   10050              620     528     450             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 22.56

INPUT
Description:
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9125    1952    9340    1950    9420    1945    9455    1940    9525    1940
    9530  1938.5    9550    1940    9565    1942    9610    1944    9660    1945
    9750    1946    9770    1946    9790    1946    9905  1946.5    9970    1946
    9980    1940    9990  1938.6   10010  1938.6   10020    1940   10055    1942
   10060    1944   10095    1946   10180    1946   10190    1944   10200    1944
   10240    1946   10255    1948   10300  1947.5   10400    1948   10475  1948.4
   10600    1950   10740    1952

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9125    .045    9610    .055    9970    .045   10095     .07   10180    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9970   10095             335.4   422.4     390             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10255   10740

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 22.48

INPUT
Description:
Station Elevation Data    num=      59
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    8700    1946    8780    1944    8990    1942    9025    1938    9040    1937
    9070    1936    9080    1935    9095    1937    9115    1938    9133    1940
    9178    1945    9230    1945    9268    1943    9310    1940    9338    1938
    9350  1937.5    9395    1938    9415    1939    9440    1940    9460    1940
    9485    1940    9503    1940    9515  1940.7    9565    1940    9578  1939.6
    9583    1940    9645    1941    9670    1942    9690  1942.6    9705    1942
    9720    1941    9730  1940.4    9745    1942    9765    1942    9805    1943
    9900    1944    9932    1944    9952    1942    9967    1940    9980    1936
   10013    1936   10045    1940   10055    1942   10072    1942   10085    1942
   10095    1944   10113    1944   10140    1942   10155    1942   10172  1942.5
   10185    1942   10212    1940   10225    1938   10237    1938   10245    1940
   10255    1942   10330    1944   10420  1944.8   10650    1946

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    8700    .055    8990    .045    9440    .055    9932    .045   10095     .07
   10212    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9932   10095             210.7     264     220             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    8700    9230
```

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.43

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8745	1944	8955	1942	9000	1936	9020	1934	9060	1935
9070	1933.4	9080	1935	9098	1936.8	9140	1936	9163	1935
9173	1934	9180	1935	9185	1936	9287	1938	9295	1939
9340	1939	9367	1938	9375	1937	9400	1936	9415	1935
9425	1935	9440	1937	9452	1935	9535	1940	9570	1937.5
9630	1939.3	9665	1939	9690	1939	9745	1940	9827	1940
9880	1941.5	9915	1940	9950	1940	9960	1938	9970	1934
9980	1936.2	10000	1936.2	10010	1934	10025	1938	10050	1940
10065	1939.8	10080	1940	10110	1941.5	10135	1940	10165	1940
10175	1936	10190	1936	10210	1934	10223	1936	10225	1938
10240	1940	10310	1942	10825	1942	10965	1944		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8745	.055	9000	.045	9080	.055	9140	.045	9185	.055
9950	.045	10050	.07	10165	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10050	410	369.6	340	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.36

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9050	1940	9110	1930	9150	1928	9172	1927	9185	1926
9200	1929	9210	1925	9220	1926	9236	1930	9250	1932
9305	1933	9333	1934	9365	1935	9402	1936	9460	1937
9525	1937.8	9605	1937	9630	1936	9632	1934	9635	1934
9650	1933.3	9660	1934	9675	1934.7	9735	1936	9750	1937
9765	1936	9787	1934	9800	1932.5	9822	1936	9850	1935
9860	1936	9890	1938	9940	1938	9975	1930	9985	1929
10000	1929	10010	1930	10025	1934	10040	1936	10070	1938
10110	1938	10140	1936	10155	1934	10180	1932.2	10195	1934
10202	1936	10232	1938	10285	1938.8	10345	1938	10420	1937.3
10485	1936	10490	1935	10525	1936	10650	1936	10655	1935
10670	1936	10710	1938	10805	1940	10845	1940.7		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9050	.055	9110	.045	9402	.035	9630	.07	9940	.045
10070	.07	10110	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10070	435.7	369.6	370	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10284	10845	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.29

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8908	1935	8955	1930	8960	1925	8965	1924.5	8985	1924
9005	1923.5	9015	1924	9050	1923	9055	1923.5	9065	1924
9085	1924.5	9100	1926.5	9110	1927	9120	1927.2	9140	1927.8
9175	1928.5	9250	1929.5	9300	1931	9350	1932.5	9400	1933.2
9465	1934	9491	1934	9630	1932	9640	1930	9652	1925
9672	1926	9710	1928	9740	1930	9770	1932	9860	1932
9880	1931	9890	1932	9908	1934	9930	1934	9972	1932
9980	1930	9982	1928	9984	1926	9990	1925.5	10010	1925.5
10020	1926	10030	1930	10040	1932	10060	1934	10072	1934
10100	1932	10110	1931.9	10115	1932	10155	1932.4	10205	1932
10240	1931.6	10273	1932	10320	1932.4	10380	1931.7	10410	1932
10534	1934	10678	1936						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

8908	.055	8955	.045	9350	.035	9630	.045	9770	.07
9972	.045	10040	.07	10155	.045	10320	.07		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10040	358.9	369.6	280	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.22

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8685	1930	8800	1928	8895	1925	8907	1924	8920	1923
8935	1920	8970	1918	8990	1923	9058	1924	9105	1924
9125	1925	9138	1927	9210	1929	9410	1929.8	9510	1928
9530	1922	9533	1920	9552	1919.6	9565	1920	9577	1922
9585	1924	9590	1926	9600	1928	9648	1928	9657	1926
9662	1925.6	9670	1926	9680	1928	9712	1930	9795	1929.5
9915	1930	9935	1930.2	9955	1930	9975	1928	9985	1922
10000	1921.5	10020	1921.5	10055	1928	10067	1930	10080	1930.2
10097	1930	10117	1930	10145	1930.2	10170	1930	10205	1928
10240	1930	10305	1932	10455	1932.5	10555	1933		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8685	.045	9210	.035	9510	.045	9600	.055	9955	.045
10067	.07								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9935	10080	312.4	369.6	473.3	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.15

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8312	1926	8385	1925	8520	1923	8540	1918	8550	1916
8560	1918	8565	1920	8579	1923	8585	1923.3	8615	1923
8680	1922	8705	1921	8722	1922	8756	1922.8	8822	1922
8840	1921	8853	1920	8867	1918	8885	1916	8895	1915
8905	1916	8915	1920	9030	1922	9045	1924	9075	1925
9105	1926	9170	1927	9308	1926	9325	1924	9350	1922
9360	1920	9385	1918.4	9410	1920	9430	1922	9445	1924
9456	1926	9515	1926	9535	1923	9550	1926	9575	1927.2
9662	1926	9786	1924	9800	1924	9815	1925.3	9825	1924
9853	1924	9870	1923.3	9917	1926	9960	1924	9972	1922
9985	1920	9990	1919	10010	1919	10015	1920	10022	1922
10050	1924	10075	1926	10135	1927.4	10160	1926	10185	1925.8
10210	1926	10265	1926.4	10295	1926	10325	1926	10376	1928

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8312	.055	8520	.045	9105	.035	9308	.045	9575	.055
9815	.07	9960	.045	10050	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960	10050	330.7	369.6	378.9	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.08

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8620	1930	8660	1925	8700	1930	8720	1919	8765	1920
8785	1920	8835	1915	8850	1919	8875	1919	8895	1916
8910	1919	8950	1921	9090	1921	9120	1920	9150	1918
9170	1918	9180	1916	9200	1915	9210	1913	9235	1915
9250	1918	9260	1918	9270	1917	9280	1916	9290	1915.8
9315	1918	9345	1920	9360	1918	9390	1916.2	9450	1918
9465	1920	9480	1921.2	9515	1920	9525	1918.5	9555	1920
9565	1920.3	9575	1920	9585	1918.6	9605	1920	9635	1922
9655	1922.7	9770	1922	9870	1921	9905	1922	9915	1922.2
9930	1922	9950	1920	9970	1917	9975	1916	9990	1915
10010	1915	10020	1916	10040	1918	10055	1922	10080	1922
10110	1920	10130	1920	10155	1918.3	10175	1920	10220	1922
10270	1920	10305	1922	10420	1924	10545	1926		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8620	.055	8950	.045	9480	.045	9930	.045	10055	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10055	450.7	475.2	300	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.99

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8660	1925	8675	1910	8740	1915	8765	1916	8835	1918
8895	1914	9025	1918	9095	1917	9105	1912	9130	1910
9147	1911	9175	1912	9218	1913	9272	1916	9320	1916
9390	1914	9445	1914	9485	1916	9500	1916	9518	1914
9550	1916	9603	1916	9700	1917.8	9740	1916.6	9800	1918
9850	1919	9960	1918	9975	1912	9985	1910	10000	1909.9
10008	1910	10022	1912	10090	1916	10160	1918	10185	1918
10195	1916	10210	1916	10235	1917.2	10255	1916	10260	1914
10270	1913.4	10275	1914	10285	1916	10320	1918	10362	1920
10435	1922								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8660	.055	8675	.045	8765	.055	9105	.045	9800	.035
9960	.045	10090	.055	10320	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960	10090	400	422.4	470	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.91

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8740	1925	8780	1920	8805	1915	8826	1910	8835	1907
8850	1906	8863	1906	8883	1906	8895	1905	8915	1902
8935	1905	8945	1909	8990	1910	9030	1912	9070	1912.5
9125	1912	9190	1910	9250	1911.1	9320	1910	9370	1908
9380	1910	9410	1908	9425	1910	9460	1912	9490	1910
9500	1912	9525	1914	9730	1914.6	9830	1914	9878	1912
9940	1910	9975	1908	9990	1906	10000	1906	10020	1910
10040	1912	10060	1912.5	10080	1912	10120	1912.5	10150	1912
10180	1910.6	10210	1912	10250	1914	10370	1916		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8740	.055	8883	.045	9500	.035	9830	.07	9940	.045
10040	.07	10250	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10040	450.3	475.2	450.3	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.82

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8655	1920	8700	1906	8720	1906	8740	1904	8750	1903
8760	1902	8790	1901	8805	1900	8830	1901	8850	1905
8860	1907	8935	1908	8970	1908	9025	1908.7	9080	1908.2
9110	1908.9	9135	1908	9185	1906	9195	1905	9210	1906
9240	1905.2	9250	1906	9260	1906.5	9285	1906	9300	1904
9310	1902.3	9340	1904	9355	1906	9375	1908	9475	1909.4
9605	1909.3	9805	1909.6	9830	1908	9855	1906	9865	1904.3
9885	1905.8	9915	1906	9950	1906	9965	1904	9970	1902
9980	1900.5	10000	1900.5	10015	1902	10040	1904.5	10070	1906
10150	1906.7	10180	1908	10250	1910	10350	1911		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8655	.055	8720	.045	9475	.035	9805	.07	9855	.045
9885	.07	9950	.045	10070	.055				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10070	240.7	264	297.2	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.77

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8630	1915	8652	1910	8680	1909	8697	1905	8705	1900
8720	1895	8745	1899	8815	1900	8837	1904	8850	1905
8876	1905	8952	1905	9005	1906	9075	1906	9115	1906
9180	1904	9205	1902	9240	1902	9255	1900	9270	1902
9290	1904	9320	1904	9325	1902	9340	1902	9355	1906
9395	1906	9445	1906	9535	1906	9565	1905.3	9620	1906
9740	1906.5	9785	1906	9795	1904	9830	1902	9850	1900
9885	1900	9910	1900	9955	1902	9965	1900	9970	1898
9975	1898	10000	1897.3	10005	1898	10015	1900	10030	1902
10045	1904	10115	1904	10130	1903.1	10150	1904	10205	1906

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8630	.055	8697	.045	9355	.035	9785	.07	9830	.045
9955	.045	10045	.055						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9955	10045	442.2	422.4	422.4	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.69

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8860	1910	8878	1900	8900	1890	8932	1890	8960	1896
8970	1898	9020	1900	9060	1900.9	9070	1900	9080	1899.3
9110	1900	9145	1900	9180	1900.8	9230	1900.8	9290	1900
9310	1898	9365	1896	9380	1894	9390	1896	9415	1898
9480	1899.9	9505	1898	9510	1897.3	9515	1898	9575	1900
9660	1901.6	9685	1901.8	9755	1900.8	9780	1900	9815	1898
9907	1896.1	9940	1898	9982	1896	10000	1895.1	10015	1896
10025	1898	10085	1900	10157	1898	10160	1897.1	10175	1898
10265	1900	10280	1902	10300	1902.2	10615	1904		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8860	.055	8878	.045	9780	.07	9940	.045	10025	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10025	408	422.4	320	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.63

INPUT
Description:
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9060	1910	9130	1908	9140	1906	9180	1900	9212	1900
9220	1888	9230	1888	9250	1890	9260	1892	9290	1894
9320	1896	9375	1894.9	9435	1897.6	9480	1898	9560	1898
9585	1896	9605	1894	9625	1892	9633	1898.6	9645	1892
9660	1894	9695	1896	9725	1896	9785	1894	9800	1892.6
9805	1894	9830	1896	9930	1898	9980	1896	9990	1890
10000	1888.5	10007	1890	10025	1892	10085	1894	10140	1895.3
10185	1894	10190	1892	10205	1892	10220	1894	10240	1894.8
10255	1894	10270	1893.8	10275	1894	10300	1896	10400	1897.7
10530	1898	10565	1898.3	10585	1898	10600	1898	10705	1900
10840	1902	10950	1904	11015	1906	11085	1908	11175	1910

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9060	.055	9212	.045	9633	.055	9980	.045	10085	.07
10185	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980	10085	280	264	370	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.58

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9220	1906	9250	1904	9320	1900	9365	1886.8	9395	1886.8
9400	1888	9415	1890	9430	1892	9465	1892	9510	1894
9565	1894	9590	1892	9615	1888	9640	1892	9670	1894
9725	1894.7	9750	1894	9780	1893.3	9815	1894	9890	1892
9910	1890.1	9940	1892	9965	1890	10000	1888	10025	1890
10050	1892	10090	1893.8	10155	1890	10170	1888	10185	1890
10235	1892	10255	1894	10310	1894.3	10355	1894	10425	1892.2
10482	1894	10525	1894.8	10630	1895.5	10800	1897		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9220	.035	9320	.045	9430	.07	9590	.045	9640	.055
9940	.045	10090	.055	10155	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10090	525	475.2	250	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.49

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9565	1892.5	9585	1892	9640	1890	9690	1888	9695	1884
9710	1882	9715	1884	9730	1884.5	9755	1884	9770	1883.3
9780	1886	9840	1887	9900	1887.7	9925	1886	9940	1885.3
9950	1886	9990	1886	9995	1884	10000	1883	10010	1884
10035	1885	10040	1884	10060	1882	10070	1884	10080	1888
10130	1889.4	10155	1888	10175	1884	10195	1882.5	10210	1884
10220	1884	10240	1886	10270	1888	10295	1890	10345	1892
10390	1891.5	10515	1894.1						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9565	.045	9690	.07	9780	.1	9900	.045	10080	.1
10155	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9900	10080	475	475	475	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.41

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9110	1890	9250	1888	9330	1886	9510	1885	9575	1884
9590	1880	9600	1879	9620	1880	9630	1882	9670	1882.5
9720	1882	9765	1880	9795	1877.5	9805	1880	9830	1881
9845	1880	9855	1879	9865	1880	9910	1882	9930	1880
9980	1878	10000	1874.2	10010	1880	10020	1882	10030	1884
10060	1886	10165	1888	10290	1889				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9110	.055	9575	.038	9630	.1	9765	.038	9805	.1
9980	.038	10010	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980	10010	422	422	422	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.35

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8755	1888	9110	1886	9225	1884	9320	1882	9330	1880
9350	1879.2	9400	1880	9490	1881.5	9620	1881	9750	1880
9755	1878	9760	1876	9770	1874.2	9800	1876	9810	1878
9895	1878	9915	1876	9970	1874	9980	1872	10000	1871.5

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8740	1864	8790	1862.7	8845	1863.2	8915	1862	8950	1861.5
8965	1862	9090	1863.2	9200	1862	9360	1862	9425	1862
9560	1858	9625	1858	9810	1860.7	9830	1860	9850	1858
9865	1857.5	9875	1858	9885	1858.2	9900	1858	9950	1856
9965	1854	10000	1852.6	10030	1854	10042	1858	10050	1860
10090	1860.9	10210	1860.5	10275	1860	10330	1858.5	10385	1860
10475	1861	10520	1864	10545	1866				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8740	.045	9425	.055	9810	.07	9885	.038	10050	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9885	10050	570	580.8	480	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8740	9090	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.79

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8860	1859	8895	1858	8925	1857.4	8980	1857.2	9030	1857
9070	1856	9240	1855	9300	1854	9350	1854	9385	1853
9415	1852	9440	1851	9450	1852	9585	1853	9907	1855
9937	1854	9950	1852	9980	1850	9990	1848	10000	1847.5
10027	1848	10070	1850	10083	1852	10118	1854	10160	1855.3
10205	1854.3	10300	1855	10350	1854	10385	1853	10465	1854
10530	1856	10645	1860						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
8860	.045	9907	.038	10160	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9907	10160	460	422.4	575	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8860	9240	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.71

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9055	1855	9060	1854	9095	1853	9122	1852.9	9212	1852
9265	1851	9290	1850.8	9350	1851	9430	1851	9455	1850
9460	1849	9480	1848	9490	1848	9550	1849	9625	1850
9720	1850	9750	1850	9810	1851	9910	1852	9960	1851
9990	1844	9995	1843	10020	1844	10040	1846	10075	1847
10085	1850	10140	1850	10160	1851	10170	1852	10230	1852
10270	1851	10370	1850	10390	1849	10470	1850	10534	1854
10610	1856								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9055	.045	9625	.035	9750	.055	9960	.038	10085	.055
10470	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960	10085	475	369.6	320	.3	.5

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.64

INPUT
Description: Beginning of Castro Fleet's Analysis (Del Webb Area) Cross Section Identification Numbers Were Increased by a factor ranging from 0.25 to 0.14 miles for consistency with Montgomery Watson Modeling. For example, Castro Fleet cross section 20.39 becomes Montgomery Watson cross section 20.64
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9140	1860	9220	1848	9300	1846.5	9430	1847	9500	1845
9660	1847	9940	1847	9950	1844	9970	1842	10000	1842
10020	1842	10030	1844	10110	1848	10210	1848	10310	1844
10340	1844	10360	1843	10370	1844	10420	1848	10600	1852
10830	1856	11100	1860						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9140	.055	9220	.045	9660	.035	9940	.038	10110	.055
10420	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10110	112.5	135	137.5	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.62

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9218	1854	9257	1848.4	9269	1846.4	9297	1845.8	9324	1844.7
9340	1845.8	9381	1846	9417	1846.6	9438	1845.7	9464	1845.2
9486	1844.5	9511	1843.9	9518	1842.5	9526	1844.1	9552	1844.7
9592	1845.3	9629	1845.8	9687	1846	9735	1846.1	9789	1846.1
9840	1846.5	9863	1847.1	9868	1846.5	9913	1846.9	9953	1846.8
9969	1845.6	9996	1839.7	10000	1839.8	10019	1840	10042	1839.3
10053	1843.3	10074	1844.3	10092	1844	10110	1845.1	10134	1846.7
10182	1847.1	10229	1846.7	10275	1846.6	10310	1845.6	10333	1844.5
10344	1842.9	10354	1844.2	10366	1844	10373	1840.3	10384	1843.4
10407	1844.1	10429	1844.2	10479	1848.4	10531	1849.6	10591	1850.8
10631	1851.3	10692	1851.9	10742	1853.1	10786	1853.8	10840	1854.5
10898	1855.5								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9218	.055	9269	.045	9526	.035	9969	.038	10053	.055
10429	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969	10053	915	788.9	580	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.48

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9183	1846.5	9221	1842.4	9262	1839.1	9283	1838	9345	1837.3
9355	1836.5	9361	1837.5	9412	1837.6	9460	1837.7	9516	1838.6
9572	1839	9640	1839.4	9704	1839.7	9740	1838.6	9768	1834.9
9779	1836.7	9799	1838.1	9823	1838.7	9831	1837.9	9847	1839.3
9864	1838.7	9896	1838.4	9916	1839.8	9931	1840.7	9972	1840.6
9986	1833.9	10000	1834	10014	1833.9	10023	1832.8	10050	1833
10065	1838.6	10087	1838.2	10112	1839	10139	1839.5	10187	1838.8
10195	1838.7	10224	1839.2	10238	1838.6	10261	1835.2	10282	1832.4
10309	1833.4	10327	1838.4	10350	1839	10390	1838.5	10422	1838.9
10485	1840	10529	1841.4	10561	1842.6	10597	1843.7	10655	1844.6
10697	1845.6	10752	1847.1						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9183	.055	9283	.045	9704	.07	9972	.038	10065	.07
10238	.038	10327	.055	10529	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10065	600	526.7	520	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.38

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9126	1840.6	9160	1836.4	9184	1834	9192	1832.5	9230	1830.6
9246	1829.9	9254	1830.6	9288	1830.9	9338	1831.8	9368	1832.3
9434	1832.4	9490	1831.3	9519	1826.9	9537	1827.2	9545	1829.2
9576	1830	9589	1831.6	9612	1831.4	9643	1830.9	9666	1832.2

10015	1872	10025	1878	10030	1880	10040	1882	10105	1884
10310	1886	10430	1886.8	10500	1887				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8755	.035	9320	.055	9750	.038	9810	.1	9970	.038
10025	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970	10025	205	211.2	220	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.31

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8660	1887.3	8740	1886	8930	1884.3	9040	1885	9125	1884
9200	1882	9275	1880	9280	1878	9290	1876.4	9310	1878
9410	1880	9500	1880.7	9570	1880	9640	1878.8	9700	1879.8
9825	1878	9855	1872	9870	1871.2	9880	1872	9890	1874
9900	1876	9920	1876.5	9940	1876	9950	1874	9965	1872
10000	1870.7	10015	1872	10050	1878	10065	1880	10105	1882
10190	1883.5	10230	1883.9	10585	1884				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8660	.035	9410	.055	9825	.07	9940	.038	10050	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10050	230	316.8	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.25

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8610	1887	8650	1886	8723	1885.2	8857	1884	8890	1883.2
9025	1884	9125	1882	9220	1880	9225	1878	9260	1875.3
9275	1876	9310	1878	9365	1879	9410	1878.4	9500	1879.8
9515	1879.8	9655	1878	9685	1877	9730	1877.6	9820	1876.5
9860	1876.6	9880	1876	9910	1875	9935	1874	9965	1870
10000	1868.7	10045	1870	10055	1878	10090	1880	10120	1880
10365	1880	10400	1878.3	10430	1878.4	10490	1879.5	10540	1880
10600	1880.7	10715	1882	10850	1884				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8610	.035	9220	.055	9935	.038	10055	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9935	10055	420	369.6	370	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.18

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8610	1880	8650	1878	8800	1875.2	8940	1875	9050	1876
9155	1874	9225	1872	9240	1870	9250	1869.7	9260	1870
9300	1872	9330	1874	9420	1874.4	9490	1874	9650	1872.5
9845	1872.9	9950	1872	9970	1870	9980	1868	9988	1866
10000	1865	10010	1866	10080	1868	10090	1870	10100	1872
10120	1874	10200	1876	10270	1878	10365	1878	10480	1877.3
10535	1878	10700	1880						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8610	.035	9225	.055	9950	.038	10100	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10100	360	369.6	355.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8610	9050	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.11

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8410	1880	8480	1876	8535	1874	8595	1872.3	8735	1872
8910	1874	9025	1874	9160	1872	9280	1870	9325	1868
9365	1866.5	9410	1868	9450	1869.7	9555	1868	9675	1869.3
9715	1869.1	9770	1870	9850	1870	9910	1868	9930	1866
9945	1864	9960	1862	9990	1860.5	10020	1862	10035	1864
10055	1866	10080	1868	10125	1870	10185	1872	10420	1874
10580	1876								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8410	.045	9280	.055	9910	.038	10080	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9910	10080	260	316.8	370	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8410	8950	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.05

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8540	1870	8560	1869.5	8605	1870	8670	1870	8730	1869.5
8750	1870	8825	1872	8875	1872.3	8975	1872	9080	1870
9220	1868	9345	1866	9400	1864.8	9430	1866	9475	1866.4
9520	1866	9545	1865.5	9560	1866	9610	1867	9670	1866.3
9775	1867.4	9830	1866	9892	1866	9920	1864	9930	1862
9960	1860	9990	1858	10000	1857.6	10012	1858	10022	1860
10045	1866	10075	1868	10095	1869.2	10145	1868.3	10375	1870
10475	1872								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8540	.045	9345	.055	9892	.038	10045	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9892	10045	340	369.6	380	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8540	8875	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.98

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8490	1870	8540	1868	8580	1866.2	8660	1866.7	8800	1866.2
8955	1868	9145	1866	9330	1864	9380	1862.8	9390	1863.2
9425	1862	9440	1861	9465	1862	9500	1861.3	9520	1862
9580	1863.6	9615	1863.3	9645	1864	9695	1864.2	9730	1864
9870	1862	9880	1861	9920	1860	9945	1858	9965	1856
9995	1854	10000	1853.2	10005	1854	10020	1860	10060	1864.7
10125	1866	10165	1866.2	10220	1866	10280	1864	10315	1864
10390	1866	10470	1870	10480	1872	10505	1874	10565	1876
10605	1878								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8490	.045	9330	.055	9870	.038	10060	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9870	10060	400	422.4	430.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8490	8955	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.9

9709	1833.5	9741	1834.1	9771	1834.7	9813	1835.2	9881	1835.5
9895	1834.7	9900	1835	9927	1834.2	9951	1837.5	9968	1832.6
9990	1830.2	10000	1829.6	10026	1829.6	10043	1835.9	10087	1835.6
10133	1835.6	10164	1834.5	10195	1833.5	10216	1832.2	10229	1830.5
10256	1828.9	10293	1833.1	10312	1833.2	10335	1832.1	10376	1828.9
10386	1826.6	10405	1825.9	10419	1835.3	10447	1836.4	10512	1838.3
10570	1840.2								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9126	.055	9184	.045	9490	.055	9951	.038	10043	.07
10335	.038	10419	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10043	475	622.3	650	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.26

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9079	1841.1	9115	1837.6	9151	1832.2	9182	1823.3	9191	1825.3
9208	1825.4	9218	1824.1	9224	1825.7	9253	1825.2	9307	1826
9342	1826.8	9363	1828.1	9404	1828.4	9465	1829.1	9507	1829.6
9540	1829.5	9622	1830.4	9632	1824.8	9639	1825	9650	1826.2
9664	1826.5	9675	1828.9	9699	1829.6	9705	1828.5	9715	1830.4
9758	1831.4	9814	1830.1	9837	1829.7	9846	1828.3	9865	1829.5
9879	1830.1	9920	1828.2	9945	1828.4	9956	1827.2	9972	1827.2
9988	1826.1	10000	1825.2	10010	1827.3	10026	1827.9	10054	1828.2
10064	1825.5	10080	1825.1	10088	1825.8	10096	1828.7	10154	1828.6
10194	1828.6	10234	1828.5	10252	1828.5	10286	1827.7	10319	1825.4
10332	1822.4	10351	1821.9	10362	1822	10376	1823.4	10399	1831.1
10430	1831.8	10506	1832	10517	1833.5	10529	1830.7	10537	1831.7
10569	1832.9	10610	1833.5	10643	1834.2	10700	1834.9	10737	1835.9

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9079	.07	9307	.045	9622	.038	9675	.07	9945	.038
10096	.055	10319	.038	10399	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945	10096	460	531.6	585	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.16

INPUT
Description: THE PRESENCE OF INNER-CHANNEL ISLANDS AT THIS CROSS-SECTION CAUSE FLOODWAY TOPWID TO EXCEED FLOODPLAIN TOPWID HOWEVER, FLOODWAY IS WITHIN BOUNDARIES OF FLOODPLAIN
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9031	1830.2	9108	1826.4	9139	1826	9167	1823.8	9194	1822
9200	1820.4	9212	1822.2	9232	1824.2	9258	1825	9304	1825.2
9319	1825	9350	1825.2	9361	1824.4	9371	1825.6	9392	1825.3
9406	1821.1	9412	1821.4	9419	1822.9	9425	1823	9445	1825.8
9480	1825.2	9525	1824.7	9578	1823.3	9589	1820.9	9606	1821.7
9622	1821.1	9642	1819.3	9654	1822.4	9666	1823.6	9722	1823.3
9744	1823.1	9757	1822	9772	1822.7	9783	1821.3	9792	1821.3
9801	1822.8	9815	1822.3	9843	1823.3	9868	1823.6	9878	1821.8
9915	1821.9	9922	1821.2	9937	1821.6	9953	1821.5	9966	1818.5
9969	1818.4	10000	1817.7	10015	1823.9	10071	1823.6	10096	1822.5
10118	1818.7	10139	1819	10178	1818.8	10195	1818.4	10208	1822
10255	1822	10284	1823.5	10336	1823.1	10362	1818.5	10374	1816.2
10399	1815.5	10419	1821.2	10433	1823.5	10460	1821.4	10473	1821.3
10501	1827.1	10517	1828.7						

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9031	.035	9167	.07	9232	.055	9392	.038	9445	.055
9578	.038	9666	.055	9953	.038	10015	.055	10096	.038
10208	.055	10336	.038	10433	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9953	10015	450	555.7	635	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.05

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9039	1828	9079	1825.1	9125	1823.7	9157	1823.8	9204	1823.6
9253	1822.6	9335	1821.4	9358	1820.6	9370	1821.5	9394	1820.6
9416	1819.6	9455	1820.6	9477	1815.6	9503	1815.4	9517	1813.8
9541	1818.4	9582	1817.8	9602	1817.2	9625	1819.1	9637	1814.9
9646	1815.6	9655	1815.7	9688	1815.9	9702	1815.5	9716	1820.9
9721	1819.4	9750	1818.7	9760	1814.4	9772	1813.5	9786	1813.8
9802	1816.1	9837	1814.9	9849	1815.8	9857	1815.7	9864	1814.1
9878	1816	9903	1816.9	9916	1816.5	9935	1812.5	9942	1812.6
9954	1814.4	9967	1813	9974	1813.9	9980	1813.9	9996	1810.7
10000	1811.1	10011	1814.9	10032	1816	10064	1816.4	10113	1815.2
10133	1813.6	10143	1813.6	10156	1816.9	10212	1816.8	10230	1815.5
10241	1816.3	10307	1817.1	10334	1817.5	10363	1815.2	10382	1815.1
10416	1811.9	10447	1811.2	10476	1821.5	10491	1823.1	10529	1824.4
10579	1825.4	10625	1825.5	10672	1826.7				

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9039	.035	9455	.038	9541	.055	9625	.038	9716	.07
9954	.038	10011	.055	10113	.038	10156	.055	10334	.038
10476	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9954	10011	815	700	770	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.92

INPUT
Description: CROSS SECTION 19.92 LENGTHENED 865 FEET AT LEFT OVERBANK USING TOPOGRAPHIC MAP

Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8928	1820	8966	1818	8991	1816	9091	1816	9241	1814
9365	1813.1	9529	1814	9617	1814	9667	1814	9705	1812
9718	1810	9793	1810.2	9827	1811.6	9863	1813.4	9879	1813.8
9909	1813.7	9948	1812.6	9959	1814.2	9974	1809.7	9985	1810.5
10000	1803.6	10014	1802	10024	1802	10044	1805.4	10057	1808.1
10066	1806	10082	1809.4	10097	1810.4	10133	1811	10180	1811.4
10199	1809	10220	1808.9	10230	1809	10241	1809.9	10268	1809.5
10283	1809.7	10305	1812	10320	1811.8	10343	1811.7	10358	1811
10373	1808.8	10399	1816.5	10413	1817.6	10433	1818.3	10462	1819.8
10505	1820.5	10531	1820.8						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8928	.035	9718	.055	9985	.05	10057	.07	10180	.05
10305	.055	10399	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985	10057	250	492	660	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.83

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8883	1815.8	8943	1814.6	8997	1814	9054	1813.4	9125	1812.8
9179	1811.8	9223	1811.7	9270	1811.4	9332	1811.3	9390	1811.2
9457	1811.4	9547	1811.3	9602	1811.4	9651	1811.6	9681	1812
9711	1811.8	9736	1810.3	9751	1807.2	9761	1806.9	9770	1807.3
9804	1807.1	9826	1806	9836	1807	9862	1806.3	9881	1807.6
9908	1807.7	9929	1805.3	9943	1805.5	9960	1805.8	9974	1802.8
10000	1801.2	10018	1800.7	10035	1799.3	10045	1801.9	10074	1806.6
10121	1806.2	10150	1808.3	10184	1807.5	10206	1803.9	10222	1804.5
10263	1805.7	10301	1806.9	10333	1807.9	10372	1808.1	10398	1808.7
10429	1810.5	10487	1812						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8883	.035	9751	.055	9960	.05	10074	.07	10184	.045

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

9960	10074			500	567.8	600		.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.72

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8917	1812.3	8958	1810.8	9008	1809.5	9064	1809.2	9129	1808.4
9196	1808.3	9243	1807.8	9298	1807.2	9350	1806.8	9423	1806.7
9474	1806.8	9534	1807.4	9576	1807.5	9623	1807.2	9677	1808
9715	1808.6	9793	1808.4	9812	1801.9	9822	1800.9	9847	1801.3
9871	1802	9884	1797.2	9893	1796.5	9905	1799.8	9926	1801.6
9948	1800.7	9961	1798.3	9973	1798.4	9989	1797.8	10000	1796.5
10018	1795.1	10030	1796.9	10043	1801.8	10064	1803.5	10089	1802.9
10108	1802.3	10129	1802.7	10160	1801.7	10187	1801.7	10225	1800.4
10241	1797.4	10261	1797.5	10275	1799.5	10300	1802.1	10326	1803.1
10359	1802.7	10408	1801.2	10465	1799.9	10483	1798.3	10498	1798.4
10513	1799.1	10533	1803.1	10563	1805	10592	1806.4	10641	1808.2
10680	1809.5								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8917	.035	9793	.055	9871	.05	9905	.055	9948	.05
10043	.055	10225	.05	10300	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9948	10043	500	509.9	500	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.62

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9000	1808	9035	1806.3	9083	1805	9143	1804.4	9224	1804.3
9276	1803.1	9354	1802.8	9437	1802.3	9491	1802.2	9563	1802.1
9653	1801.6	9716	1801.3	9737	1800.7	9753	1800.7	9783	1801.4
9834	1801.1	9879	1801.3	9924	1802.7	9966	1803.9	9981	1802.5
10000	1791.1	10025	1790.3	10036	1792.4	10046	1796	10077	1797.5
10120	1798.2	10180	1797.8	10221	1796.4	10241	1795.6	10293	1795
10309	1793.1	10317	1793.9	10323	1792.4	10343	1793.3	10361	1795.7
10375	1796.4	10398	1794.9	10417	1797.1	10448	1797.6	10494	1797.1
10535	1796.2	10581	1795.1	10609	1795.3	10632	1794.6	10650	1795.2
10677	1798.6	10708	1799.9	10742	1801.3	10788	1802.6	10840	1803.7
10901	1804.6	10961	1805.9	11026	1806.4	11080	1807.4	11145	1808.6
11200	1810								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9000	.035	9966	.05	10046	.055	10293	.05	10361	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9966	10046	515	528	530	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9000	9966	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.52

INPUT
Description:
Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9196	1800	9242	1799.2	9307	1798.6	9367	1797.5	9417	1797
9474	1796.1	9482	1794.8	9489	1795.5	9517	1795.5	9524	1796.3
9528	1795.4	9590	1795.8	9657	1796.2	9718	1796.5	9795	1796.5
9871	1795.5	9916	1794.5	9936	1788.8	9952	1791.3	9972	1790.6
9983	1788.7	10000	1787	10005	1786.4	10022	1786.2	10038	1793
10055	1793.4	10095	1793.6	10134	1792.6	10156	1788.1	10164	1788.2
10177	1789.7	10189	1788.7	10215	1791.3	10222	1790.4	10238	1791.5
10251	1790.6	10265	1791.5	10294	1791.3	10300	1790.4	10325	1791.2
10345	1791.4	10354	1790.3	10387	1791.8	10411	1791.6	10436	1791.2
10472	1790.4	10488	1787.7	10502	1791	10518	1790.8	10539	1787.9
10559	1786.8	10582	1795.2	10617	1796.4	10679	1797	10746	1797.5
10814	1797.8	10893	1797.8	10903	1796.5	10910	1797.5	11010	1797.7
11097	1797.3	11187	1797.8	11237	1798.4				

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9196	.035	9916	.05	9972	.05	10038	.07	10134	.055
10387	.07	10518	.05	10582	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10038	700	606.3	485	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9196	9795	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.41

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9475	1802.7	9548	1794.3	9613	1789.7	9658	1787.9	9675	1786.2
9681	1787.1	9715	1788.2	9764	1788.1	9796	1787.7	9830	1788.3
9859	1790.3	9880	1791	9908	1790.6	9928	1789.4	9948	1786.8
9965	1787.6	9979	1783.9	10000	1784	10039	1784.6	10052	1785
10072	1788.6	10110	1788.5	10139	1788.6	10171	1787.5	10183	1786.6
10193	1783.2	10209	1783.3	10225	1786.1	10246	1786.6	10263	1785.9
10284	1786.5	10328	1787.3	10353	1785.2	10365	1783.2	10374	1782.6
10383	1783.1	10403	1785.8	10415	1785.7	10425	1784	10446	1787.3
10480	1786.7	10495	1787.3	10521	1787	10545	1783.5	10561	1783.8
10587	1783	10616	1790.3	10654	1791.8	10698	1792.3	10763	1792.8
10803	1793.2	10811	1792.6	10823	1793.2	10878	1793.3	10925	1793.4
10979	1793.3	11038	1793.4	11100	1793.5	11160	1793	11213	1793.2
11254	1793.8	11307	1794	11380	1794.5	11443	1795.1	11509	1795.9
11572	1796.6	11647	1798.4	11735	1800.1				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9475	.045	9965	.05	10072	.055	10183	.05	10225	.07
10521	.05	10616	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10072	600	769.4	790	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.26

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9258	1798	9307	1793.5	9361	1787.2	9382	1785.3	9425	1783
9434	1781.7	9446	1783.4	9458	1783.2	9466	1780.8	9478	1781
9490	1783.2	9541	1784.1	9573	1782.4	9594	1782.3	9602	1783.1
9634	1782.2	9645	1782.9	9675	1782.2	9708	1781.9	9715	1779.9
9723	1780.1	9740	1779.1	9759	1780.5	9812	1780	9819	1780.5
9849	1780.3	9900	1779.9	9923	1777.9	9934	1779.6	9955	1779.5
9981	1778.2	10000	1775.4	10018	1773	10024	1780.7	10035	1782
10061	1782.7	10070	1781.9	10085	1783.4	10129	1784.6	10176	1785.5
10243	1785.6	10331	1785.1	10394	1785.2	10452	1784.9	10511	1784.7
10595	1784.7	10657	1784.5	10707	1784.8	10777	1785.4	10836	1786
10871	1785.9	10904	1785.3	10948	1785.7	10995	1786.9	11037	1788.1
11072	1789	11162	1789.7	11215	1790.1				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9258	.055	9425	.07	9541	.045	9759	.07	9981	.05
10024	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981	10024	500	416.4	300	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10110	11215	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.18

INPUT
Description: From Cross section 19.18 to Cross section 20.62, the floodplain and the floodway boundaries are made coincident on the right overbank only. As per discussion with the FEMA technical evaluator, this is done to include, the low flow channel on the right overbank of the Skunk Creek Wash, within the floodway

boundary (March 17, 1998)

Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9114	1791.3	9152	1788	9213	1782.9	9246	1780	9281	1778.8
9312	1778.2	9367	1777.6	9382	1776.3	9399	1775.6	9415	1773.5
9430	1778.7	9442	1776.1	9452	1776.5	9465	1778.7	9479	1778.8
9493	1774.7	9514	1775.1	9534	1777	9568	1777.6	9625	1778
9638	1776.9	9649	1777	9672	1779	9722	1779.1	9764	1779
9774	1778.2	9813	1778.8	9834	1778.5	9854	1779.4	9874	1779.4
9906	1777.1	9918	1777	9926	1774.7	9943	1775.9	9980	1773.9
10000	1771.2	10006	1770	10025	1770.1	10040	1775.5	10055	1775.8
10080	1781.1	10135	1781.4	10202	1782.1	10254	1782.2	10305	1781.8
10344	1781.8	10403	1781.6	10410	1781.1	10438	1781.3	10534	1781.4
10600	1781.9	10659	1783	10688	1783.1	10727	1783.2	10758	1783.6
10796	1784.1	10857	1784.4	10925	1785.3	10969	1786	11042	1787.5
11098	1788.4	11158	1788.4	11224	1788.6				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9114	.045	9367	.05	9430	.055	9479	.05	9534	.055
9943	.05	10080	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9943	10080	460	598.7	720	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.07

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9213	1782.6	9244	1779.1	9266	1776.5	9296	1775.1	9326	1775.1
9352	1775	9406	1775	9426	1774.8	9467	1773.3	9515	1772
9537	1770.3	9556	1769.6	9569	1768.1	9586	1770.4	9614	1771.6
9641	1772	9656	1773.6	9691	1773.2	9711	1772	9724	1769.5
9748	1771.8	9783	1772.9	9806	1772.1	9842	1772.2	9876	1772.3
9909	1772.6	9928	1771.9	9952	1770.5	9969	1771.6	9985	1768
10000	1764.8	10007	1764.8	10022	1766.5	10047	1767	10068	1773.1
10092	1773.7	10141	1773.3	10157	1772.6	10164	1773.2	10198	1773.6
10246	1773.9	10274	1775.1	10315	1775.3	10361	1775	10402	1774.5
10441	1774	10485	1773.4	10509	1773.6	10558	1773.5	10573	1773.8
10632	1774.1	10679	1774.4	10711	1775.2	10731	1775.1	10750	1775.4
10774	1775.7	10827	1775.7	10882	1776	10923	1777.1	10971	1777.8
11014	1778.3	11069	1779.1	11099	1779.6	11110	1779.4	11128	1780
11163	1780.4	11196	1781.1						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9213	.07	9296	.055	9515	.05	9614	.055	9969	.05
10068	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969	10068	680	601	500	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.96

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9326	1779.1	9377	1778.7	9418	1776	9427	1774.9	9442	1773.9
9458	1769	9482	1767.7	9489	1766	9496	1767.1	9514	1767.3
9536	1767	9545	1768	9570	1768.8	9607	1768.6	9640	1768.1
9649	1767.9	9687	1767.8	9714	1767.3	9726	1767.7	9764	1767.9
9796	1767.6	9809	1768.2	9837	1768.3	9862	1768.6	9894	1768.2
9924	1768	9931	1762.2	9938	1762.6	9959	1762.6	10000	1762.9
10007	1763.3	10021	1766.3	10035	1767.2	10043	1767.2	10055	1766
10069	1766.9	10100	1765.7	10107	1766.7	10125	1766.3	10137	1764.5
10159	1769.4	10193	1771	10235	1770.9	10281	1770.5	10317	1769
10347	1768.7	10358	1767.5	10370	1768.8	10401	1768.8	10408	1767.4
10414	1768.5	10436	1769	10455	1769.7	10515	1770.2	10574	1770.5
10644	1770.6	10686	1770.7	10731	1770.9	10781	1771	10818	1771.3
10877	1771.2	10930	1772.4	10975	1773.1	11027	1773.1	11087	1773.4
11135	1773.8	11195	1773.9	11217	1774.3	11277	1774.5	11298	1774.6

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9326	.055	9924	.05	10021	.07	10159	.045

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9924   10021              525   631.7    600              .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 18.84

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9450  1770.8    9475  1764.5    9503  1756.9    9512  1757.6    9522  1758.4
    9531  1758.5    9538  1757.4    9557  1759.8    9576  1759.9    9586  1758.7
    9597  1759.6    9604  1759.6    9612  1758.6    9620    1760    9649  1760.6
    9679  1760.6    9702    1761    9721  1759.8    9732  1760.5    9768  1760.6
    9784  1759.8    9797  1759.8    9818  1761.3    9848  1763.1    9888  1763.4
    9915  1763.2    9942  1759.9    9987    1758   10000  1755.9   10008  1755.7
   10036  1762.6   10051  1763.3   10101  1762.5   10107  1760.8   10115  1762.3
   10145  1764.2   10182  1765.5   10209    1766   10231    1765   10258    1765
   10308  1765.5   10357  1764.9   10413  1765.4   10417  1765.4   10685    1766
10808.04    1768

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9450    .055    9915     .05   10036    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9915   10036              500   497.1    325              .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev
   1016510808.04

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 18.74

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9245    1770    9249  1770.1    9269  1763.2    9291  1763.1    9321  1762.2
    9332  1760.3    9362    1758    9377  1757.6    9388    1752    9404  1754.6
    9417  1753.8    9437  1750.4    9454  1750.7    9479  1754.9    9493  1756.6
    9528  1756.7    9552  1756.7    9583  1757.1    9616  1757.8    9656  1758.2
    9692  1758.9    9729    1760    9750  1759.4    9767  1759.8    9791  1758.1
    9814  1758.5    9851  1759.2    9883    1759    9908  1758.5    9924    1757
    9938  1757.7    9975  1757.7    9986  1755.1   10000    1755   10018  1755.2
   10042  1755.3   10056  1757.7   10111  1758.5   10142  1758.7   10163  1759.6
   10198  1760.5   10244  1760.9   10281  1760.1   10318  1759.2   10336  1759.3
   10361  1759.6   10381  1759.5   10434  1759.2   10471  1761.4   10502  1763.1
   10533  1763.6   10581  1763.5   10628  1763.1   10660  1763.7   10706  1763.7
   10752  1763.6   10796  1763.6   10855  1763.9   10889  1763.8   10896  1761.9
   10910  1763.9   10932    1764   10947  1766.7   10962    1766   10991    1764
   11003  1762.8   11018  1766.7   11036  1768.5

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9245    .055    9377     .05    9479    .055    9975     .05   10056    .055
   10502    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9975   10056              750   917.8    650              .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev
   10244   11036

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 18.57

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9578  1785.6    9624  1759.3    9644  1751.3    9663  1748.8    9671  1748.5
    9703    1746    9714  1743.7    9735  1743.5    9747  1746.6    9772  1749.2
    9819  1750.4    9829  1750.1    9832  1750.3    9879  1751.1    9926  1752.5
    9947  1752.5    9969  1745.1   10000  1744.4   10001  1744.4   10006  1745.5
   10014  1745.9   10041  1751.5   10062  1749.2   10076  1751.5   10102  1751.5
   10116  1750.9   10146  1751.2   10170  1752.4   10224  1752.3   10247  1751.4
   10263  1752.2   10302  1753.1   10332  1753.6   10360  1753.3   10386  1753.7
   10400    1751   10416  1753.4   10452  1752.6   10474  1752.5   10490  1751.8
   10507  1752.7   10528  1752.8   10560  1754.2   10585  1755.2   10600  1756.5
   10645    1757   10678  1757.7   10717  1757.9   10766  1758.1   10820  1758.8
```

10862	1759.2	10915	1760.1	10941	1760.2	10950	1760.5	10964	1760.8
10993	1760.4	11007	1760.2	11021	1761.1	11048	1761.8	11082	1765.7
11111	1770.4	11148	1776.8						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9578	.07	9703	.04	9747	.07	9947	.04	10041	.07
10600	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9947	10041	275	389	675	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.49

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9699	1762.2	9727	1754.7	9755	1746.3	9766	1747.1	9792	1747.4
9832	1747.4	9853	1745.9	9867	1742.7	9895	1743.3	9909	1744.9
9930	1744.8	9965	1744.6	9985	1741.7	10000	1741.9	10015	1745.2
10037	1746.9	10052	1746.9	10060	1746.2	10072	1745.8	10082	1747.3
10111	1747.8	10142	1748.7	10167	1748.9	10202	1749	10243	1748.9
10282	1748.7	10327	1748.2	10379	1748	10394	1747.8	10406	1746.5
10417	1747.4	10434	1743.7	10445	1744	10464	1746.9	10481	1742.3
10497	1746.3	10522	1748.9	10562	1750.3	10602	1751.2	10637	1751.4
10676	1751.9	10727	1752.2	10780	1752.5	10817	1752.7	10834	1753.1
10873	1753.7	10897	1754.2	10951	1754.5	10998	1754.9	11036	1755.3
11087	1755.7	11131	1757.1	11137	1757.6	11163	1757.6	11194	1759.2
11230	1759	11254	1759.4						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9699	.07	9853	.04	9909	.07	9965	.04	10037	.07
10202	.055	10417	.04	10497	.07	10562	.045		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10037	1162.5	1099.7	850	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.29

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9535	1750.9	9583	1741.6	9597	1737.2	9608	1739.5	9634	1739.1
9647	1737.5	9660	1732.6	9678	1737.5	9712	1739.3	9758	1740.2
9788	1740.1	9800	1739.1	9812	1739.7	9832	1738.7	9852	1735.8
9872	1737.4	9914	1738.3	9932	1737	9949	1735.5	9968	1735
9976	1734	9984	1734.6	10000	1734.3	10009	1735.5	10020	1735.3
10029	1733.5	10049	1739.9	10076	1740.5	10115	1740	10130	1736.1
10144	1734.7	10160	1736.9	10185	1738.4	10213	1742	10244	1742.5
10266	1742.8	10270	1742.2	10286	1742.8	10318	1742.8	10349	1742.7
10388	1742.8	10395	1742.5	10429	1742.5	10468	1742.2	10472	1742.6
10553	1742.5	10565	1741.1	10574	1742.8	10607	1743.2	10634	1743
10693	1743.3	10746	1744.6	10795	1744.9	10858	1745.6	10899	1746
10970	1747.1	11035	1747.8						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9535	.055	9634	.04	9678	.055	9914	.04	10049	.07
10115	.04	10185	.055	10244	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9914	10049	200	300	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.23

INPUT
Description: NEW CROSS SECTION: GR CARD DATA FOR 18.20 DEVELOPED FROM TOPOGRAPHIC MAPS. CROSS SECTION ADDED TO MODEL FLOW OVER CLOUD ROAD. CAPACITY OF 3-60" CMPS IGNORED
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9510	1750	9550	1740	9640	1736	9650	1734	9660	1736
9690	1736	9700	1735	9710	1736	9780	1738	9800	1738
9930	1736	9950	1734	9965	1732	10000	1730	10010	1738.8
10240	1740	10480	1740	10730	1740	10870	1742		

```
Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9510    .055    9930     .04   10010    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9930   10010              370     370     400            .1        .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 18.16

INPUT
Description:
Station Elevation Data     num=      34
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9687  1755.1    9711  1739.9    9724  1736.1    9754    1734    9768  1730.7
    9775  1730.5    9788  1733.9    9810  1735.2    9836  1735.2    9860  1734.7
    9877  1733.3    9892  1732.7    9911  1732.9    9951  1732.5    9981  1732.5
    9996  1729.6   10000  1729.6   10020  1729.6   10050  1728.8   10075    1739
   10078  1737.8   10095  1737.2   10124  1735.8   10139  1734.7   10155    1734
   10199  1733.5   10330    1730   10380    1730   10430    1734   10650    1736
   10750  1736.9   10930    1738   11040    1738   11130    1740

Manning's n Values          num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9687     .07    9754     .04    9788     .07    9981     .04   10075    .055
   10330     .04   10430    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9981   10075              345   377.6     360            .1        .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 18.09

INPUT
Description: END OF CARTER-BURGESS ONE-FOOT CONTOUR MAPPING. MONTGOMERY-WATSON
             TWO-FOOT INTERVAL CONTOUR MAPPING RESUMES. ENCROACHMENT INSERTED
             AT SECTION 18.09 TO CONTAIN FLOODPLAIN
Station Elevation Data     num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9828  1748.2    9855  1733.9    9862  1732.7    9872  1729.9    9880  1729.7
    9885  1731.3    9900  1730.9    9919  1727.3    9936  1730.5    9951  1727.5
    9971  1728.2    9991  1728.2   10000  1727.4   10006  1727.8   10065  1728.8
   10076  1729.6   10090  1731.3   10119  1731.8   10178  1731.7   10226  1730.9
   10264  1729.9   10280  1726.2   10290  1725.9   10310    1733   10333  1732.9
   10380  1731.3   10407  1730.4   10447  1729.1   10497  1728.6   10522  1729.1
   10540  1723.5   10556  1723.7   10573  1728.6   10597  1731.4   10633  1733.6
   10663  1734.3   10717  1734.2   10772  1733.5   10799  1732.5   10847  1732.3
   10899  1732.4   10935  1732.3   10974  1733.1   11013    1733   11076  1732.8
   11132  1733.3   11210  1733.7   11263    1734   11349  1734.7   11423  1735.8
   11479  1736.6   11538  1737.7   11570    1738   11595  1738.6   11632  1739.1
   11661  1739.7

Manning's n Values          num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9828     .07    9936     .04   10090     .07   10310    .055   10522     .04
   10573    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9936   10090            712.5   705.8     375            .1        .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.95

INPUT
Description: CLOUD ROAD CROSSES THROUGH THIS CROSS-SECTION. 3-60" CMPS:
             CAPACITY IGNORED REMOVED LEFT ET 9845
Station Elevation Data     num=      35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9755.02 1740.51 9818.34 1730.21  9852.1 1726.85    9867 1726.36 9873.24 1726.15
 9879.76 1724.21  9941.9 1724.2110021.83 1722.2110042.15 1722.21   10047 1723.51
10058.87 1726.7110131.78 1726.2110166.46 1727.0110219.74 1727.0710281.54 1728.21
10340.58 1728.2110351.82 1726.2110391.92 1724.2110410.16 1724.4310440.86 1728.21
10470.78 1728.2110517.06 1726.7110529.03 1726.2110545.77 1723.0610569.84 1728.36
10647.71 1730.2110713.11 1730.3110858.38 1730.2110888.71 1729.96 11036.4 1730.21
11046.39 1731.3111060.67 1734.2111064.15 1732.1111068.55 1734.9511081.31 1752.83

Manning's n Values          num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9755.02    .055 9873.24    .0410058.87    .0710340.58    .0410440.86    .055
10529.03    .0410569.84    .055
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Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9873.2410058.87              500   563.8     520             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.84

INPUT
Description: Change elevation of 10533.75 and 10579.92 to 1718 to match topo,
             Modified geometry to include changes by Tramonto development
             between station 1072 and 10867.86

REMOVED LEFT ET 9770

4-8-99: ADDED RIGHT FP ET AT 10706
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9670.69 1730.91 9713.32 1728.97 9753.84 1724.21 9772.54 1720.21 9790.38 1720.65
  9800.9 1722.31 9834.61 1724.21 9909.89 1724.21    9925 1723.21 9940.13 1722.21
 9955.16 1719.61 10029.4 1718.2110048.88 1718.2110133.86 1718.21 10164.5 1720.21
   10219 1720.3110230.85 1722.2110374.53 1722.21 10440.3 1723.3410487.83 1722.59
10533.75    171810579.92    171810616.26 1722.2110663.58 1722.2110716.91 1724.21
   10720  1725.510867.86 1725.5110903.95 1725.5711049.41 1726.58

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9670.69    .055 9753.84     .04 9834.61    .055 9940.13     .04 10164.5    .055
10487.83     .0410616.26    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9940.13 10164.5              310   341.7     310             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.78

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10585.51 and 10800

REMOVED LEFT ET
             9615
4-8-99: RIGHT EP ET CHANGED FROM 10607 TO 10610
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9599.65 1732.21 9627.65 1721.39  9684.5 1716.21 9717.21 1718.21 9765.64 1718.48
  9841.5 1720.21    9931 1720.21 9955.49 1720.21 9973.26 1714.21 9988.08 1714.21
   10026 1713.3810070.76 1716.2110151.26 1716.4410235.37 1716.0110282.17 1718.21
10309.14 1720.2110385.19 1720.21 10409.4 1716.2110447.79 1716.2110488.02 1720.21
10527.03 1720.2110585.51 1722.21 10585.6  1723.3   10800  1723.3 10884.8 1723.81
10986.97 1724.2111024.28  1724.9

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9599.65    .045 9955.49     .0410070.76    .05510385.19     .0410488.02    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9955.4910070.76              490   661.3     720             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.65

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10358.37 and 10903.11

4-8-99: ADDED RIGHT FP ET
             10314


Station Elevation Data    num=      24
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9382.74 1726.21 9413.87 1716.21 9475.55 1714.21  9482.6 1712.21 9493.88 1712.71
 9550.02 1713.98 9594.24 1713.48  9630.3 1714.21 9665.77 1713.31 9812.95 1714.21
 9899.02  1712.1 9912.78 1708.21    9924 1707.25 9959.39 1704.21 9984.01 1704.21
 9992.68 1708.3110000.49 1710.21   10021 1711.2810077.36 1714.2110133.98 1715.41
10205.53 1716.11   10314 1716.11 10314.1    171910903.11    1719

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9382.74    .045 9899.02     .0410000.49    .055
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9899.0210000.49              370   460.8     500              .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.57

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10401.97 and 11289.4, raised elevation to
             1715

4-8-99: ADDED RIGHT FP ET AT 10302, ADDED LEFT FP ET AT
             9440
Station Elevation Data    num=      23
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9303.56 1717.16 9335.15 1715.35 9428.56  1714.3 9471.01 1714.57  9508.1 1710.21
 9548.25 1711.34 9576.05 1712.21 9686.77 1712.21 9871.91 1708.21  9897.5 1706.21
    9923 1706.21 9930.23 1702.21 9971.46  1703.610007.46 1706.3810020.08 1708.91
   10040 1710.2110114.97 1708.53 10161.6  1711.510169.27 1712.21   10302 1712.21
10401.97    171511225.31    1715 11289.4 1715.39

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9303.56    .045 9576.05    .055 9871.91     .04   10040    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9871.91   10040              365   474.4     500              .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.48

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10455.69 and 11616.42, raised elevations to
             1710.5.

4-8-99: RT FP ET CHANGED FROM 11597 TO 10383, LEFT FP
             ET CHANGED FROM 9404 TO 9478
APPROX. 3,600CFS DIVERTS INTO RIGHT
             OVERBANK FROM THIS CROSS-SECTION DOWNSTREAM. REFER TO SPLIT FLOW
             MODEL FOR RIGHT OVERBANK ANALYSIS. FLOODWAY ANALYSIS USES ENTIRE
             FLOW AND IS STRICTLY FOR MAIN CHANNEL.
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9372.88 1716.21 9458.51 1711.05 9485.84 1708.21 9544.18 1708.21  9597.5 1707.46
 9679.17 1706.81 9739.84 1706.21 9877.04 1706.21    9893 1702.89 9936.69 1702.21
 10037.7 1702.2110047.62 1704.6110063.16 1706.21   10073 1706.2110247.95 1706.21
10301.08 1706.71   10383 1706.7110455.69  1710.511541.69  1710.511616.42 1710.65
11696.98 1712.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9372.88    .045 9877.04     .04   10073    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9877.04   10073              429   429.4     429              .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.39

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10621.24 and 11645.05 by raising the elevation to
             1706.11.  This elevation is from the cross section profiles,
             rather than the grading drawing.  The grading drawing shows the
             elevatio

4-8-99: RIGHT FP ET CHANGED FROM 11369 TO 10508


Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9116.73 1711.31 9167.22 1710.21    9190 1710.21 9326.23 1707.99 9403.55 1706.21
 9430.65 1706.21  9471.2 1705.33 9555.58 1704.95  9664.9  1705.2 9710.74 1705.61
 9779.45 1704.11 9887.09 1702.21    9893 1698.05 9898.69 1698.21 9920.72 1698.21
 9928.58 1700.21 9951.05 1696.21  9973.4 1696.21 9991.02 1698.2110057.52 1700.21
10099.04 1700.2110111.87 1698.2110131.69 1698.2110144.53 1702.2110170.78 1702.21
   10179 1701.5110195.61 1700.21 10231.6 1702.2110316.97 1702.3710463.14 1702.98
   10508 1702.9810621.24 1706.1111622.56 1706.1111645.05 1706.1111673.91 1705.15
```

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11732.23  1705.1 11786.9 1705.6111887.47 1705.1111960.19 1705.4112035.23 1704.99
12058.85 1704.39

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9116.73    .055 9326.23    .045 9887.09     .0410144.53    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9887.0910144.53               465     500     530             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9116.73    9731           1136912058.85
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
11637.2912088.76 1706.26

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.3

INPUT
Description: Modified geometry to include changes by Tramonto development. To
             the right on station 10584.84 raised elevations to
             1702.4

4-8-99: RIGHT FP ET CHANGED FROM 11686 TO 10590, LEFT FP
             ET CHANGED FROM 9451 TO 9568
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9322.93 1704.81 9419.22 1704.21 9448.82 1704.11 9534.19 1701.51 9566.96 1700.21
 9598.26 1700.21 9656.94 1698.21 9720.94 1698.21 9761.09 1697.56 9881.54 1698.21
 9933.98 1697.23 9946.95 1696.21 9962.55 1692.21    9970 1692.2110031.21 1692.21
10063.76 1694.2110074.95 1696.2110119.18 1696.21   10156 1697.4110169.28 1697.91
10277.48 1698.2110295.67 1696.2110308.57 1696.3110327.84 1698.2110437.49 1698.21
10523.21 1700.2110569.87 1700.5110584.84  1702.412183.66  1702.4

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9322.93    .045 9933.98     .0410074.95     .0710437.49    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9933.9810074.95               630   644.4     580             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.18

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10749.27 elevatio from 1694.71 to 1696.01, 11408.6
             and 11794.13, and 12285.64 and 12352.81, added vertical wall on
             RHS

4-8-99: RIGHT FW ET CHANGED FROM 10672 TO 10668, RIGHT FP
             ET CHANGED FROM 10839 TO 10710, LEFT FP ET CHANGED FROM 9590 TO
             9746
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9493.99 1700.01 9664.32 1697.27 9715.97 1695.77 9779.51 1694.21 9808.56 1692.26
 9845.85 1693.41 9935.01  1692.7 9963.19 1692.21    9978 1688.95 9990.45 1686.21
10011.48 1686.21 10053.3 1690.2110123.73 1690.2110145.22  1687.510162.51 1686.21
10206.89 1688.2110244.97 1688.21   10254 1689.5610284.66 1694.2110342.46 1696.21
10386.32 1695.6110446.24 1695.3110516.41 1694.21 10575.4 1693.9810655.64 1693.27
10749.27 1696.0110806.19 1696.0110933.46 1695.9310997.29 1696.2111083.48 1696.11
11089.79 1696.3111108.75 1696.7111237.26 1695.8411322.92 1695.01 11408.6 1693.91
11794.13 1694.1111930.31 1694.7812034.58 1695.7112115.02 1696.1112238.17 1695.91
12285.64 1696.1112352.81 1696.6112381.62 1696.1112395.49 1696.8112435.45 1696.29
 12500.3 1696.9112576.83 1698.21 12621.6 1698.41 12621.7    1700

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9493.99    .055 9963.19     .04 10053.3     .0710123.73     .0410284.66    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9963.19 10053.3               610   600.8     510             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   11108 12621.7

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.06

INPUT
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Description: Modified geometry to include changes by Tramonto development
             between station 10572.12 and 10928.08, 11414.59 and 11790.8,
             12092.7 and 12200.38

4-8-99: RIGHT FW ET CHANGED FROM 10513 TO
             10490, RIGHT FP ET CHANGED FROM 10899 TO 10513, LEFT FP ET CHANGED
             FROM 9451 TO 9533
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9443.14 1694.16 9475.62 1690.21 9497.53 1690.21 9557.26 1688.21 9581.93 1684.21
 9621.41 1682.52 9643.26 1686.21 9763.42 1686.21 9806.79 1684.21 9929.44 1684.21
    9947 1682.89 9963.19 1681.71 9982.51 1680.21 9988.59 1682.21 10002.5 1682.21
10029.28 1678.2110052.12 1678.2110064.34 1684.6910069.46 1686.21   10090 1688.11
10122.23 1689.2110215.28 1689.5110336.61 1688.2110396.62 1688.3110487.99 1688.01
10511.72 1688.2110522.16 1687.6110572.12 1691.1910928.08 1691.1911030.08 1690.75
11081.08 1691.1111116.85 1691.11 11217.9 1690.6111307.94 1690.6111414.59 1690.26
 11790.8 1690.0511846.52 1690.2211921.73 1691.8111976.53 1691.8112032.71 1690.41
12064.67 1690.66 12092.7 1689.4912200.38 1689.6512313.66  1691.612385.08 1691.71
12479.24 1691.2112605.82 1692.31

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9443.14     .07 9557.26     .04 9643.26     .07 9929.44     .04   10090    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9929.44   10090             630     566     440             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
 11976.512605.82

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 16.96

INPUT
Description: GR DATA FOR SECTIONS 16.96 TO 17.95 IS BASED UPON ONE-FOOT MAPPING
             FROM CARTER-BURGESS DIGITAL TERRAIN MODEL. DATE:2-24-99
GR
             ELEVATIONS FOR SEC 16.96 TO 17.95 ARE BASED UPON CITY OF PHOENIX
             DATUM. MONTGOMERY -WATSON GR DATA ARE BASED UPON NGVD 1927 DATUM.
             THE GR DATA FOR SEC 16.96-17.95 ARE RAISED BY .21FT ON THE X1 CARD
             FOR CONVERSION TO THE NGVD 1927 DATUM
LEFT ET CHANGED FROM
             9889,9506 TO 9914 FOR BOTH FP AND FW
4-8-99: RT FW ET CHANGED
             FROM 10450 TO 10389, RT FP ET CHANGED FROM 11080 TO 10408
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9129.37    1690 9149.96    1688 9170.63    1686 9181.22    1686 9250.38    1686
 9268.83    1684 9340.93    1682 9373.32    1682 9420.61    1682 9430.52    1680
 9497.31    1678 9533.08    1678  9666.5    1678 9733.21    1678 9746.83    1680
 9756.14    1682 9764.36    1684 9771.22    1684 9781.57 1683.06 9807.96 1678.71
 9870.41 1678.21 9902.01 1678.21 9929.31 1684.21    9932 1684.21 9947.83 1684.21
    9966 1678.21 9988.98 1677.9210007.22 1676.2110075.82 1676.2110134.07 1679.61
10257.04 1680.11 10270.3 1682.6510282.57 1683.1210307.33  1684.5   10342 1684.91
10383.59 1685.4110435.94 1685.8110503.13  1684.810601.12 1684.7110660.64 1685.21
 10704.2 1685.3510830.52 1686.06 10864.9 1686.8110909.44 1688.7110920.87 1688.91
10970.87 1688.67 11018.3 1688.4211061.63 1688.6111137.84 1688.1111246.93 1688.11
11567.48 1687.4411645.69 1686.9811668.64 1686.3111730.35 1685.2111795.39 1682.91
 11904.8 1683.3211972.35 1683.8112221.54 1684.9112302.92 1685.5112482.15 1686.41
12553.87 1686.2212583.61 1686.4412619.86 1686.01

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9129.37     .07 9947.83     .0410307.33    .04510435.94    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9947.8310307.33             410   456.2     600             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 9129.37 9942.53  1689.6
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   1108012619.86

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 16.87

INPUT
Description: Bridge deck low chord and channel bed elevations are based on
             survey data by ASL Consulting (12-07-00) and JEFuller (date),
             respectively.
```

Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9328.22	1687	9385.7	1685.7	9402.02	1685.5	9468.73	1684.7	9536.14	1683.5
9597.17	1683.4	9654.65	1683.2	9701.49	1683.3	9755.42	1684.5	9832.07	1685.6
9855.48	1685.7	9876.77	1671.37	9890.91	1673.51	9905.05	1673.94	9919.2	1673.14
9933.34	1673.08	9947.48	1672.74	9961.62	1672.71	9975.76	1672.58	9989.91	1672
10004.05	1671.48	10018.19	1671.41	10032.33	1671.16	10046.48	1671.08	10060.62	1670.99
10074.76	1671.22	10088.9	1670.67	10103.04	1670.25	10114.36	1669.95	10152.83	1685.8
10172.7	1685.6	10235.86	1685.2	10311.79	1683.11	10383.46	1681.71	10442.37	1679.9
10503.4	1679.71	10553.78	1679.7	10599.2	1679.51	10664.49	1679.91	10719.84	1679.6
10812.8	1679.91	10863.19	1680.11	10908.61	1679.71	10980.28	1679.21	11031.38	1678.8
11080.34	1678.61	11130.73	1678.11	11189.63	167	811232.92	1677.71	11302.46	1677.8
11363.49	1678.21	11403.23	1678.41	11458.58	1678.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9328.22	.045	9855.48	.041	10152.83	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9855.48	10152.83	146	146	146	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9328.22	9851.87	1685.69	10153.41	11458.58	1685.81

BRIDGE RIVER: RIVER-1
REACH: Reach-1 RS: 16.865

INPUT
Description: Carefree Highway Bridge

Distance from Upstream XS = 1
Deck/Roadway Width = 144
Weir Coefficient = 2.7
Bridge Deck/Roadway Skew = 0
Upstream Deck/Roadway Coordinates
num= 54

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9328.22	1687	1670	9365.2	1686.75	1670	9395.1	1686.19	1670
9430.6	1685.65	1670	9466.1	1685.23	1670	9501.6	1684.93	1670
9537.1	1684.75	1670	9539.9	1684.74	1670	9572.6	1684.7	1670
9608.1	1684.77	1670	9643.6	1684.96	1670	9679.1	1685.27	1670
9714.6	1685.71	1670	9825.3	1687.25	1670	9855.2	1687.64	1670
9857.9	1687.68	1670	9857.9	1687.68	1670	9860.6	1690.18	1670
9860.6	1690.2	1680.84	9893.4	1690.5	1681.16	9928.9	1690.77	1681.23
9964.4	1690.93	1681.33	9999.9	1690.98	1681.26	10002.7	1690.98	1681.27
10035.4	1690.94	1681.13	10070.9	1690.8	1680.84	10106.4	1690.55	1680.57
10141.9	1690.2	1680.12	10141.9	1690.18	1670	10142.1	1687.68	1670
10174.7	1687.25	1670	10272.6	1685.47	1670	10277	1685.39	1670
10312.5	1684.78	1670	10348	1684.21	1670	10383.5	1683.69	1670
10419	1683.21	1670	10454.5	1682.78	1670	10490	1682.4	1670
10505.5	1682.24	1670	10525.5	1682.06	1670	10561	1681.77	1670
10596.5	1681.53	1670	10632	1681.33	1670	10667.5	1681.18	1670
10703	1681.08	1670	10738.5	1681.02	1670	10827	1680.94	1670
10914.3	1680.86	1670	11001.7	1680.34	1670	11059.9	1680	1670
11147.3	1679.48	1670	11234.6	1679.42	167011458.58		1678.3	1670

Upstream Bridge Cross Section Data
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9328.22	1687	9385.7	1685.7	9402.02	1685.5	9468.73	1684.7	9536.14	1683.5
9597.17	1683.4	9654.65	1683.2	9701.49	1683.3	9755.42	1684.5	9832.07	1685.6
9855.48	1685.7	9876.77	1671.37	9890.91	1673.51	9905.05	1673.94	9919.2	1673.14
9933.34	1673.08	9947.48	1672.74	9961.62	1672.71	9975.76	1672.58	9989.91	1672
10004.05	1671.48	10018.19	1671.41	10032.33	1671.16	10046.48	1671.08	10060.62	1670.99
10074.76	1671.22	10088.9	1670.67	10103.04	1670.25	10114.36	1669.95	10152.83	1685.8
10172.7	1685.6	10235.86	1685.2	10311.79	1683.11	10383.46	1681.71	10442.37	1679.9
10503.4	1679.71	10553.78	1679.7	10599.2	1679.51	10664.49	1679.91	10719.84	1679.6
10812.8	1679.91	10863.19	1680.11	10908.61	1679.71	10980.28	1679.21	11031.38	1678.8
11080.34	1678.61	11130.73	1678.11	11189.63	167	811232.92	1677.71	11302.46	1677.8
11363.49	1678.21	11403.23	1678.41	11458.58	1678.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9328.22	.045	9855.48	.041	10152.83	.045

Bank Sta: Left Right Coeff Contr. Expan.

```
       9855.4810152.83              .3        .5
Ineffective Flow     num=        2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9328.22 9851.87 1685.69 10153.411458.58 1685.81

Downstream  Deck/Roadway Coordinates
    num=      54
     Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
 9330.09    1687    1670   9365.2 1686.75    1670   9395.1 1686.19    1670
  9430.6 1685.65    1670   9466.1 1685.23    1670   9501.6 1684.93    1670
  9537.1 1684.75    1670   9539.9 1684.74    1670   9572.6  1684.7    1670
  9608.1 1684.77    1670   9643.6 1684.96    1670   9679.1 1685.27    1670
  9714.6 1685.71    1670   9825.3 1687.25    1670   9855.2 1687.64    1670
  9857.9 1687.68    1670   9857.9 1687.68    1670   9860.6 1690.18    1670
  9860.6  1690.2 1680.84   9893.4  1690.5 1681.16   9928.9 1690.77 1681.23
  9964.4 1690.93 1681.33   9999.9 1690.98 1681.26 10002.7 1690.98 1681.27
 10035.4 1690.94 1681.13 10070.9  1690.8 1680.84 10106.4 1690.55 1680.57
 10141.9  1690.2 1680.12 10141.9 1690.18    1670 10142.1 1687.68    1670
 10174.7 1687.25    1670 10272.6 1685.47    1670   10277 1685.39    1670
 10312.5 1684.78    1670   10348 1684.21    1670 10383.5 1683.69    1670
   10419 1683.21    1670 10454.5 1682.78    1670   10490  1682.4    1670
 10505.5 1682.24    1670 10525.5 1682.06    1670   10561 1681.77    1670
 10596.5 1681.53    1670   10632 1681.33    1670 10667.5 1681.18    1670
   10703 1681.08    1670 10738.5 1681.02    1670   10827 1680.94    1670
 10914.3 1680.86    1670 11001.7 1680.34    1670 11059.9    1680    1670
 11147.3 1679.48    1670 11234.6 1679.42    167011444.85  1678.3    1670

Downstream Bridge Cross Section Data
Station Elevation Data    num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9330.09  1686.9 9398.22  1685.4 9459.25  1684.6  9507.5  1684.1 9571.37  1683.3
 9633.11  1683.3 9680.66  1683.5 9716.85  1684.2 9767.23  1684.9 9809.81  1685.7
 9850.97    1686 9877.23 1671.45 9897.37 1671.29 9905.51 1671.92 9919.66 1671.98
  9933.8 1672.52 9947.94 1672.76 9962.08 1672.81 9976.22 1672.58 9990.37 1672.08
10004.51 1671.4410018.65  1671.310032.79 1671.2810046.94 1670.5410061.08 1671.17
10075.22 1670.7610089.36 1670.59 10103.5 1670.6110116.59 1670.8110118.51  1671.2
10149.03  1685.910202.96  1685.310254.76  1684.310312.25  1683.210371.15  1681.8
10386.76  1681.410439.98  1679.710491.79  1679.5 10544.3  1679.410589.01  1679.4
10643.65  1679.510696.88  1679.710742.29  1679.910792.68  1680.310838.81  1679.8
 10882.8    1680 10948.8  1679.711005.57  1679.411057.38  1679.311106.34    1679
 11161.7  1678.711215.63  1678.411267.43  1678.311325.63  1678.111371.75  1678.4
11444.85  1678.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9330.09    .045 9850.97     .0410149.03    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9850.9710149.03              .3        .5
Ineffective Flow     num=        2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9330.09 9850.97    168610149.0311444.85  1685.9

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         = 1688.08
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Piers =  3

Pier Data
Pier Station     Upstream= 9928.97    Downstream= 9928.97
Upstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78
Downstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78

Pier Data
Pier Station     Upstream=   10000    Downstream=   10000
Upstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78
Downstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78
```

```
Pier Data
Pier Station     Upstream=10071.03    Downstream=10071.03
Upstream     num=        2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78
Downstream     num=        2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum                Cd   =    1.33
       Yarnell                 KVal =    1.05
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =       .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 16.86

INPUT
Description: Bridge deck low chord and channel bed elevations are based on
             survey data by ASL Consulting (12-07-00) and JEFuller (date),
             respectively.
Station Elevation Data     num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9330.09  1686.9 9398.22  1685.4 9459.25  1684.6  9507.5  1684.1 9571.37  1683.3
 9633.11  1683.3 9680.66  1683.5 9716.85  1684.2 9767.23  1684.9 9809.81  1685.7
 9850.97    1686 9877.23 1671.45 9897.37 1671.29 9905.51 1671.92 9919.66 1671.98
  9933.8 1672.52 9947.94 1672.76 9962.08 1672.81 9976.22 1672.58 9990.37 1672.08
10004.51 1671.4410018.65  1671.310032.79 1671.2810046.94 1670.5410061.08 1671.17
10075.22 1670.7610089.36 1670.59 10103.5 1670.6110116.59 1670.8110118.51  1671.2
10149.03  1685.910202.96  1685.310254.76  1684.310312.25  1683.210371.15  1681.8
10386.76  1681.410439.98  1679.710491.79  1679.5 10544.3  1679.410589.01  1679.4
10643.65  1679.510696.88  1679.710742.29  1679.910792.68  1680.310838.81  1679.8
 10882.8    1680 10948.8  1679.711005.57  1679.411057.38  1679.311106.34    1679
 11161.7  1678.711215.63  1678.411267.43  1678.311325.63  1678.111371.75  1678.4
11444.85  1678.2

Manning's n Values         num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
 9330.09    .045 9850.97     .0410149.03    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9850.9710149.03            888.2   879.1   778.2              .3       .5
Ineffective Flow     num=        2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9330.09 9850.97    168610149.0311444.85  1685.9

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 16.68

INPUT
Description:
Station Elevation Data     num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9880  1682.1    9916  1676.2    9928  1673.5    9950  1662.9    9956  1662.6
    9964  1666.6    9989  1666.2   10000  1662.3   10009  1662.8   10020  1662.7
   10025  1664.5   10043  1665.2   10076  1665.3   10100  1664.9   10107  1662.9
   10120  1662.9   10135  1661.5   10142  1665.1   10161  1665.4   10168  1664.6
   10183  1664.2   10192  1664.5   10218  1663.7   10230  1662.3   10247  1661.7
   10262  1662.9   10302  1664.5   10308    1664   10353  1663.9   10390    1664
   10437  1663.6   10463  1663.5   10470  1662.9   10479  1663.5   10511  1662.7
   10530  1661.8   10540  1661.3   10553  1661.3   10569  1662.3   10590  1666.8
   10612  1675.2   10641  1674.8   10677  1675.2   10718  1675.4   10765  1675.4
   10821  1675.3   10870  1675.4   10900  1675.6   10938  1675.6   10964    1676
   11005    1676
```

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9880	.07	9989	.04	10025	.045	10100	.04	10142	.055
10218	.045	10302	.055						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9989	10025	940	997.5	1160	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.49

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9520	1667.1	9583	1667.6	9619	1667.4	9661	1665.7	9708	1665.1
9776	1664.9	9808	1664.1	9841	1661.9	9871	1661.5	9888	1659.1
9906	1659.2	9925	1653.7	9933	1653.9	9961	1653.8	10000	1653.3
10018	1654.5	10040	1658.6	10066	1658.9	10073	1658.1	10095	1657.8
10104	1659.1	10130	1659.5	10147	1653.7	10168	1654	10211	1653.7
10224	1655.7	10234	1655.2	10246	1655.3	10253	1656.7	10285	1657.7
10316	1658.8	10335	1659.1	10371	1658.9	10413	1657.8	10420	1656.7
10428	1657.4	10438	1657.6	10446	1656.8	10465	1657.6	10485	1659.8
10512	1662.4	10532	1663.3	10582	1664	10619	1664.5	10669	1664.7
10742	1664.8								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9520	.055	9906	.04	10040	.07	10130	.04	10224	.045
10371	.055								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9906	10040	1190	1153.6	1150	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.27

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9044	1655.1	9106	1655.3	9139	1655.6	9198	1655.9	9247	1656.1
9283	1656.3	9326	1655.9	9357	1654.9	9394	1652.7	9404	1650.9
9443	1650.4	9466	1650.5	9508	1650.7	9529	1648.7	9539	1648.6
9553	1646.7	9572	1648.2	9588	1647.6	9600	1648.6	9623	1647.5
9643	1649	9667	1650.5	9682	1650.2	9700	1650.3	9724	1649.6
9760	1650.2	9771	1648.3	9798	1647.7	9816	1646.1	9835	1647.3
9853	1647.9	9872	1649.6	9892	1649.9	9905	1648.8	9915	1648.9
9923	1648.4	9947	1648.9	9967	1643.5	9990	1642.4	10000	1639.4
10009	1639.8	10032	1640	10045	1654.9	10052	1655.9	10111	1656
10158	1656.2	10207	1656.4	10255	1656.4	10316	1656.5	10391	1656.1

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9044	.045	9508	.055	9667	.045	9872	.055	9947	.04
10045	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9947	10045	400	422.1	425	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.19

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9011	1652	9072	1652.5	9131	1652.6	9193	1652.8	9235	1652.7
9260	1651.8	9281	1649.9	9326	1647.9	9377	1645.6	9385	1644.7
9392	1645.2	9431	1646.1	9457	1646.6	9500	1646.3	9506	1645.4
9515	1646.3	9539	1646.3	9548	1645.2	9556	1645.8	9574	1645.2
9600	1643.7	9613	1641.7	9624	1640.9	9639	1641.8	9652	1641.7
9664	1642.7	9687	1642.9	9695	1642.4	9709	1642.5	9730	1644.9
9760	1646.3	9781	1646.9	9807	1647.2	9817	1646.2	9833	1645.8
9855	1646.5	9881	1646.9	9907	1644.9	9934	1644.4	9950	1643.9
9966	1638.9	9981	1639.7	10000	1637.5	10018	1637.8	10034	1637.9
10048	1639.1	10077	1652	10101	1652.8	10139	1653.2	10192	1653.3
10245	1653	10291	1652.7	10341	1652.4	10389	1652.2		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

9011	.045	9600	.055	9730	.045	9950	.04	10077	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10077	540	645.6	660	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.07

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9258	1648.3	9327	1648.3	9384	1648.3	9446	1648.1	9494	1648
9536	1647.3	9578	1646.8	9614	1645.7	9631	1644.4	9648	1641.8
9701	1641.5	9720	1641.1	9734	1638.4	9750	1637.8	9760	1639.7
9781	1637.5	9791	1639.3	9822	1639.5	9854	1638.8	9877	1638.8
9884	1639.4	9902	1640.1	9948	1640.1	9974	1638.8	9986	1634.8
10000	1634.3	10037	1634.7	10044	1635.4	10071	1636.2	10089	1636.3
10105	1635.5	10113	1635.5	10130	1643.3	10166	1644.3	10196	1645.7
10222	1646.5	10267	1646.6	10315	1646.7	10350	1646.2	10392	1645.8
10433	1645.6	10494	1645.5						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9258	.035	9760	.055	9974	.04	10130	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974	10130	980	950.3	840	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.89

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9095	1636.6	9172	1637	9243	1636.9	9312	1637.2	9359	1637.1
9398	1637.6	9428	1638.1	9460	1637.5	9490	1634	9517	1630.6
9522	1631.6	9539	1631.8	9550	1631.4	9571	1631.6	9626	1632.6
9676	1633.3	9714	1633.4	9744	1632.5	9775	1631.7	9809	1630.9
9818	1629.2	9822	1629.2	9831	1630.6	9850	1631.6	9866	1632.4
9887	1632.6	9901	1632.1	9919	1636.5	9934	1635.9	9949	1633.3
9969	1633.2	9981	1632.2	10000	1626.9	10011	1627	10018	1628.2
10035	1627.9	10056	1626.8	10068	1626.8	10096	1630.8	10121	1630.7
10172	1631.1	10182	1630.2	10194	1630.1	10210	1633.5	10224	1635.6
10243	1636.1	10296	1636.9	10337	1637	10370	1637.2	10414	1637.1
10440	1636.4	10469	1636.4	10477	1635.7	10492	1636.7	10535	1636.9
10578	1637.6	10598	1637.2	10621	1637.2				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9095	.045	9969	.04	10096	.055	10224	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969	10096	700	738.4	730	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.75

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9040	1633.1	9098	1633.1	9146	1632.7	9185	1632	9268	1632
9319	1631.5	9364	1630.5	9404	1630.7	9431	1629.9	9467	1626.7
9481	1626.1	9500	1624.3	9515	1624.3	9534	1623.4	9549	1619.5
9557	1619.5	9566	1622.4	9580	1624.1	9602	1624.8	9637	1625.6
9689	1626.1	9712	1626	9736	1625	9751	1625.4	9769	1627.1
9816	1628.7	9835	1628.8	9850	1627.8	9875	1628	9933	1628.6
9944	1627.2	9963	1626.9	9967	1626.1	9977	1625.7	10000	1619.8
10015	1620.1	10027	1621.2	10050	1621.5	10070	1616.7	10079	1616.3
10102	1627.5	10116	1627.9	10121	1627.5	10138	1628.4	10174	1629.3
10210	1630.3	10259	1631.2	10307	1631.4	10370	1631.7	10411	1631.7

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9040	.035	9534	.04	9580	.045	9977	.04	10102	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977	10102	880	1048.4	1030	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.55

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9645	1628	9680	1627.1	9703	1626.7	9731	1626.5	9761	1626.1
9790	1625.3	9822	1623.7	9835	1622.3	9858	1618.7	9869	1619.5
9906	1619.7	9935	1619.5	9954	1618.8	9972	1615.4	9982	1615.3
9991	1613.8	10000	1613.9	10030	1614.7	10057	1615.2	10078	1614.9
10093	1613.4	10104	1614.5	10126	1617.5	10147	1619.4	10184	1620.5
10222	1620.7	10247	1620.5	10266	1620.2	10278	1619.4	10314	1618.9
10326	1619.4	10343	1620	10368	1624.2	10381	1625	10410	1625.1
10453	1625.3	10483	1625.2	10525	1625.1	10531	1625		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9645	.035	9954	.04	10147	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9954	10147	730	755.3	550	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.41

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9542	1618	9643	1618.6	9676	1618.9	9683	1620.7	9694	1619
9751	1619.4	9787	1619.7	9830	1620	9867	1619.2	9907	1619.4
9940	1619.7	9968	1618.7	9979	1615.1	9993	1609.8	10000	1609.2
10009	1608.3	10021	1607.6	10027	1609.7	10043	1610.4	10053	1610.4
10058	1611.1	10070	1612.8	10077	1613.1	10085	1611.8	10096	1612
10106	1610.1	10113	1611.9	10124	1613	10135	1613	10157	1612.5
10178	1611.8	10194	1612	10212	1610.2	10221	1610.9	10245	1610.4
10257	1609.6	10282	1609.4	10297	1608.7	10310	1610.1	10324	1611
10333	1611	10353	1614.7	10383	1618.6	10403	1620.1	10426	1620.5
10440	1621.2	10464	1619.6	10479	1617.9	10496	1618.1	10517	1619.3
10534	1620	10569	1621	10607	1622	10642	1622.6	10678	1622.9
10732	1623	10769	1623.1						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9542	.035	9968	.04	10070	.055	10333	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968	10070	980	968.9	950	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9542	9940	1619.7

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.22

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9749	1612	9816	1611.9	9893	1611.1	9937	1610.5	9977	1609.1
9996	1599.9	10000	1599.4	10022	1599.2	10041	1598.9	10057	1602.7
10077	1605.6	10091	1606.6	10113	1606.1	10126	1606.8	10151	1607.7
10166	1607.9	10191	1606.7	10210	1606	10234	1606.8	10242	1605.9
10249	1606.2	10260	1604.1	10269	1605.4	10282	1605.1	10301	1602
10310	1601.5	10327	1601.9	10348	1607.8	10374	1608.2	10413	1608
10439	1607.9	10461	1604.5	10480	1607.3	10507	1607.9	10527	1609.1
10570	1611	10605	1612.3	10657	1613.6	10672	1613.8	10708	1613.4
10752	1613.6	10797	1614.3	10850	1615.1				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9749	.035	9977	.04	10091	.055	10282	.04	10348	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977	10091	535	553.1	600	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.12

INPUT

Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9503	1606.8	9545	1606.7	9620	1606.5	9665	1606.2	9703	1605.5
9754	1604.5	9762	1603.8	9792	1604.4	9836	1603.5	9865	1603.5
9886	1602.9	9903	1603.3	9928	1603.9	9975	1604.1	10000	1596.3
10009	1596.9	10015	1596.4	10032	1596.7	10059	1595.8	10070	1600.2
10087	1601.3	10109	1601.7	10130	1602.2	10144	1602.4	10156	1601.5
10176	1602.1	10205	1602.1	10213	1601.7	10230	1602.2	10258	1602.8
10282	1595.4	10302	1596.7	10319	1597.2	10351	1601.5	10370	1600.3
10378	1601.1	10387	1601.1	10417	1603.1	10441	1603.4	10480	1603.1
10493	1602.9	10513	1603.8	10532	1604.1	10546	1606.5	10564	1606.1
10587	1607.2	10621	1608.2	10657	1609.1	10716	1609.8	10769	1610.4
10822	1610.7								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9503	.035	9975	.04	10087	.055	10258	.04	10351	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975	10087	255	283.6	330	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.06

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9663	1606.6	9685	1606.5	9707	1605.7	9733	1603	9751	1599.7
9759	1599	9764	1599.5	9782	1600.1	9800	1600.6	9836	1600.6
9872	1601.4	9917	1602.1	9972	1602.2	9988	1597.9	10000	1593
10010	1591.5	10020	1591.3	10043	1594.5	10060	1593.9	10070	1595.3
10089	1597.5	10109	1598	10126	1597.8	10138	1595.7	10152	1596.7
10174	1600.2	10205	1600.1	10229	1593.4	10246	1593.7	10268	1596.4
10283	1596.6	10298	1597.3	10314	1597.8	10323	1597.1	10337	1598.4
10350	1597.4	10367	1600	10390	1601.4	10411	1601.3	10441	1599.6
10453	1595.7	10470	1600.3	10480	1600.7	10495	1602.7	10517	1603.6
10549	1605.1	10581	1606	10621	1606.6	10667	1606.9	10713	1607.1
10776	1607.2								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9663	.045	9972	.04	10089	.055	10205	.04	10268	.045
10441	.04	10470	.035						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10089	670	930.3	950	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.89

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9234	1601.5	9270	1601.3	9318	1599.7	9337	1598.4	9377	1597.4
9406	1597	9434	1596.9	9460	1597.5	9477	1598.4	9494	1598.5
9511	1597	9549	1595.3	9572	1593.2	9577	1593.5	9587	1590.8
9606	1591.2	9626	1591	9633	1592	9659	1593	9671	1592.7
9683	1593.5	9702	1593.6	9714	1592.4	9741	1592.5	9775	1592.4
9804	1592.7	9817	1591.3	9847	1591.4	9869	1591.8	9890	1592.2
9906	1593	9927	1592.5	9938	1591.9	9949	1589.9	9956	1589.9
9979	1587.2	9995	1583.3	10000	1583.2	10013	1583.3	10032	1583.8
10042	1588	10059	1596.4	10087	1597.2	10101	1598.2	10141	1599.3
10186	1599.6	10236	1600.2	10284	1600.4	10319	1600.5		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9234	.035	9577	.055	9633	.045	9938	.04	10059	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9938	10059	700	756.4	760	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.74

INPUT
Description: CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW

Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9253	1594.6	9384	1594.6	9435	1593.5	9495	1592.2	9526	1591.7
9540	1590.5	9564	1589.6	9615	1589.3	9650	1589	9663	1587.4
9705	1587.4	9720	1587	9769	1588.5	9791	1588.3	9809	1587.1
9837	1586.1	9853	1585.5	9871	1585.1	9891	1585.5	9917	1584.9
9952	1585	9976	1587.3	9988	1581.8	10000	1581.8	10024	1582.1
10057	1581.7	10076	1588.3	10095	1588.3	10125	1590.2	10145	1591
10172	1591.6	10203	1591.5	10225	1591.5	10248	1591.6	10375	1591.7
10635	1592	10690	1592.6						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9253	.035	9650	.055	9769	.035	9976	.04	10076	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976	10076	1180	1070.9	970	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.54

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8984	1584.8	9072	1584.8	9160	1584.7	9220	1584.7	9283	1584.9
9355	1584.7	9421	1584.5	9499	1584.2	9525	1583.8	9546	1583.4
9563	1583.7	9621	1583.4	9683	1583.8	9715	1583	9741	1583.4
9767	1582.9	9798	1583.5	9818	1583.9	9845	1584.2	9892	1584
9926	1583.2	9950	1581.9	9970	1574.4	9986	1574	10000	1571.6
10045	1576.7	10066	1574.9	10080	1577.8	10110	1579.5	10136	1577.7
10153	1578.5	10177	1578.1	10199	1576.3	10222	1576.9	10259	1576.6
10273	1577.7	10287	1577.7	10306	1578.9	10354	1578.4	10384	1578.1
10410	1577	10416	1578.1	10428	1578.3	10437	1577.7	10458	1580.1
10480	1583	10495	1583.8	10523	1584.2	10556	1584.8	10588	1585
10623	1584.4	10669	1583.5	10695	1583.4	10738	1583.4	10762	1583.8
10808	1584.1	10821	1583.9	10881	1583.9	10936	1584.2	10999	1584.2
11072	1584.2	11131	1584.3	11205	1584.1	11269	1584.2	11381	1584.9

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8984	.035	9950	.04	10110	.055	10177	.07	10306	.055
10495	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10110	1410	1273.2	1150	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.3

INPUT
Description: The following GR record has been modified as per discussion with the FEMA technical evaluator. From station 8450 to station 9500, the elevations are read from the topographic map. From station 9563 to station station 11361, the elevations remain the same as provided by the Aerial Mapping Company, Inc (AMCI) (March 17, 1998).
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8450	1576.2	8550	1575.9	8650	1574.1	8750	1573.7	8850	1573.5
8950	1573.4	9050	1573.3	9150	1572.5	9250	1572.5	9350	1571.9
9450	1571.9	9500	1573.5	9563	1573.8	9626	1574.2	9652	1573.5
9672	1573.1	9707	1573.8	9731	1573.7	9769	1573.8	9788	1573.2
9836	1573.2	9878	1572.9	9906	1572.4	9923	1571.6	9941	1570.4
9961	1565.1	9967	1565.2	9973	1560	9983	1560.3	10000	1559.6
10011	1566.5	10027	1570	10045	1570.1	10052	1569.4	10062	1570.1
10097	1571	10131	1571.2	10157	1571.1	10191	1572.5	10211	1572.9
10251	1572.6	10297	1572.3	10351	1572.5	10386	1572.2	10410	1571.8
10417	1572.1	10437	1571.7	10448	1571.7	10480	1571.5	10515	1571.6
10552	1572.7	10571	1572.9	10608	1572.7	10642	1572.4	10681	1571.4
10735	1571.6	10765	1571.9	10792	1572	10804	1571.2	10811	1571.8
10852	1573.2	10899	1575.9	10931	1577.1	10967	1577.9	10992	1578.4
11034	1578.7	11096	1578.6	11179	1578.4	11233	1578.2	11273	1577.7
11295	1582.1	11336	1582.8						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8450	.045	9923	.04	10027	.045	10681	.07	10852	.035

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

9923	10027		1010	1213.6	1210		.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.07

INPUT
Description: CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW

Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8530	1565.4	8652	1564	8685	1562	8705	1560.7	8805	1560.7
8920	1562	9043	1562.4	9116	1562.8	9185	1563.1	9201	1562.8
9250	1562.8	9286	1563.3	9321	1563.7	9353	1563.4	9394	1562.5
9417	1561.5	9462	1561.4	9530	1562.3	9554	1562.4	9566	1562
9614	1562	9680	1562.3	9746	1563.1	9814	1563.6	9855	1564
9879	1564.3	9898	1560.9	9904	1561.4	9924	1558.5	9938	1558.9
9959	1558.9	9972	1557.5	9978	1557.5	10000	1558.5	10020	1562
10040	1562.6	10059	1564.5	10077	1564	10125	1563.5	10151	1563.1
10166	1562.6	10176	1562.7	10201	1562.2	10217	1563.1	10249	1563
10300	1563.1	10338	1563	10381	1563.2	10396	1563.1	10404	1562.3
10408	1563.1	10454	1563.1	10499	1563.1	10516	1564.1	10571	1565.5
10608	1566	10656	1565.9	10710	1565.8	10758	1565.6	10813	1564.7
10848	1564.3	10873	1564.8	10923	1565.1	10950	1570	10989	1570.8

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8530	.045	8705	.07	8805	.045	9879	.04	10059	.045
10396	.07	10499	.035						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9879	10059	1050	1134.1	1100	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10608	10989	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.86

INPUT
Description: CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW

Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8212	1556	8550	1554	8600	1553	8617	1553.4	8685	1552.4
8708	1551.6	8749	1551.5	8759	1550.6	8767	1551.7	8788	1552.1
8817	1551.5	8863	1554.3	8895	1555.1	8908	1555.4	8935	1555.1
8975	1555	9022	1555.5	9072	1556.1	9125	1556.9	9165	1557.1
9223	1557.3	9242	1556.6	9263	1557.3	9298	1557.4	9319	1557
9330	1556.1	9344	1553.5	9379	1552.5	9393	1551.4	9404	1552.9
9416	1552.7	9420	1551.9	9429	1553.3	9446	1553.2	9464	1549.8
9472	1549.3	9494	1549.8	9513	1553	9535	1553.6	9596	1553.4
9605	1552.9	9613	1553.3	9634	1553.5	9666	1553.4	9716	1553.2
9727	1552.5	9739	1553.4	9770	1552.6	9784	1553.6	9803	1553.4
9819	1551.8	9831	1551.2	9842	1552.5	9855	1551.1	9864	1553.3
9885	1553.3	9919	1551.8	9936	1549	9948	1549	9970	1551.6
9983	1550.4	9991	1547.6	10000	1546.3	10009	1551.6	10023	1554.6
10042	1555.7	10083	1555.6	10149	1554.3	10159	1550.9	10171	1552.6
10197	1554.4	10232	1554.7	10271	1556	10327	1557	10379	1557.5
10433	1557.7	10477	1557.5						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8212	.045	8685	.055	8817	.045	9446	.04	9513	.055
9885	.04	10042	.055	10149	.04	10197	.035		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9885	10042	1060	1049.1	1050	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.66

INPUT
Description:
Station Elevation Data num= 92

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8244	1548.4	8287	1548.9	8335	1549	8352	1548.3	8399	1548.2
8462	1548.3	8514	1548	8594	1547.5	8663	1546.9	8720	1546

8738	1545.8	8780	1544.9	8828	1544.1	8914	1543.6	8917	1543.1
8921	1543.7	8985	1544	9048	1544.6	9086	1545.1	9138	1545.3
9173	1546.1	9234	1546.5	9275	1546.3	9318	1546	9360	1545.7
9383	1545.3	9436	1545.1	9449	1544.5	9457	1545	9467	1544.1
9477	1545.4	9492	1544.9	9512	1543.5	9528	1540.2	9540	1540.5
9550	1542.2	9572	1546.6	9585	1546.4	9600	1542.7	9619	1542.8
9627	1543.3	9643	1542.4	9655	1543.1	9667	1546	9689	1546.6
9709	1546.7	9717	1546.1	9736	1546	9744	1544.6	9753	1546
9775	1545.3	9791	1546.1	9829	1546.1	9852	1547.5	9878	1547.5
9894	1546.7	9941	1546.7	9956	1545.9	9988	1544.6	10000	1542.1
10006	1542.3	10015	1543.9	10055	1543	10063	1543.5	10083	1546.5
10108	1546.6	10119	1546	10133	1547.2	10145	1546.3	10160	1547.2
10177	1546.2	10193	1546.6	10207	1546.1	10246	1546.4	10280	1546.8
10324	1547.3	10357	1547.3	10379	1546.7	10392	1545.6	10408	1543.2
10430	1543.9	10442	1542.9	10465	1542.6	10486	1548.6	10509	1549.3
10557	1549.5	10592	1549.8	10646	1549.9	10686	1549.4	10727	1549.5
10784	1549.4	10846	1549.5						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8244	.045	8828	.055	8985	.045	9477	.04	9667	.055
9941	.04	10083	.055	10357	.04	10486	.035		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9941	10083	500	549.1	540	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.55

INPUT
Description:
Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8416	1544.6	8496	1544.5	8598	1543.9	8689	1543.5	8797	1542.8
8877	1542.2	8929	1541.9	8950	1541.3	8963	1540.3	8985	1539.6
8993	1540.1	9040	1540.1	9081	1539.8	9104	1540.4	9157	1540
9241	1540.8	9311	1541.2	9346	1540.5	9443	1541	9451	1540.2
9464	1541.2	9477	1541	9510	1541.9	9558	1542.7	9592	1543.1
9645	1543.3	9688	1543.1	9715	1541.9	9736	1539.8	9742	1540.1
9757	1538.2	9776	1537.4	9787	1532.2	9804	1535.6	9828	1540.7
9836	1539.7	9855	1541.7	9877	1541.6	9897	1542	9930	1541.4
9965	1541.8	9988	1535.8	10000	1535.2	10010	1538.4	10031	1540.8
10045	1540.9	10054	1540.5	10065	1541.3	10098	1541.2	10123	1541.8
10132	1541.3	10150	1542.7	10176	1541.1	10191	1539.5	10208	1538.7
10219	1537.7	10233	1539.2	10262	1541.4	10270	1541.1	10283	1542
10307	1542.3	10349	1541.4	10370	1537.3	10380	1537.9	10394	1537
10403	1538.6	10432	1541	10456	1542.6	10494	1543	10550	1544.4
10623	1544.5	10680	1545	10743	1545.2	10802	1544.8	10856	1544.6
10907	1544.2	10973	1544.1	10985	1545.1	10993	1545.3		

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8416	.045	8929	.055	9104	.045	9715	.04	9828	.055
9965	.04	10031	.055	10150	.04	10262	.055	10349	.04
10456	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10031	740	787.3	850	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.4

INPUT
Description: Q100 INCREASED FROM 23300,23300 TO 26700,26700 CFS DUE TO UPSTREAM DEVELOPMENT.
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8520	1540	8940	1538	9105	1536	9155	1535	9197	1536
9202	1536.2	9212	1536	9214.5	1535.9	9217	1536	9287	1536.5
9359	1536	9414	1535.5	9474	1536	9641	1537.5	9670	1537.6
9692	1536.4	9719	1534.6	9732	1527.4	9748	1530.8	9770	1532.1
9782	1530	9800	1534.1	9820	1533.9	9840	1535.3	9849	1534.9
9866	1535.8	9908	1536.5	9939	1537.1	9968	1536.9	9980	1535.2
9994	1529	10000	1528.7	10010	1529.7	10033	1534.5	10063	1534.1
10084	1534.3	10102	1534.3	10133	1536	10164	1536.4	10177	1535
10194	1535.9	10209	1535.2	10246	1526.8	10252	1528.5	10269	1529.1
10289	1537.1	10319	1537.5	10361	1536.6	10379	1535.1	10395	1535.3
10422	1536	10447	1535.1	10465	1535.7	10514	1535.8	10539	1535.1
10600	1535	10653	1535.4	10687	1535.5	10726	1535	10744	1534.3
10772	1534.4	10797	1535.1	10833	1534.7	10874	1535.5	10910	1535.5
10944	1535.1	11001	1534.7	11027	1535.1	11043	1539	11070	1538.8

11080	1537.4	11101	1540.1	11142	1539.6

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8520	.045	9670	.04	9800	.045	9968	.04	10033	.055
10209	.04	10289	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968	10033	650	678.6	590	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.28

INPUT
Description: CROSS-SECTION AT WHICH FLOWS TO CAP OVERCHUTES 1 AND 2 RECOMBINE.
WSEL MATCHES AT THIS CROSS-SECTION

Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8217	1536	8297	1534.9	8552	1534.2	8677	1534.3	8812	1534
8979	1532	9107	1530	9165	1529.3	9205	1530	9255	1532
9337	1532.2	9390	1531.5	9439	1531.5	9484	1530.1	9507	1525.7
9523	1526	9537	1529.8	9605	1530.1	9671	1530.9	9682	1530.2
9709	1530.4	9726	1531.2	9776	1531.3	9840	1530.4	9851	1529.7
9901	1530.9	9962	1531.6	9975	1530.6	9991	1522.9	10000	1522.6
10034	1522.9	10052	1530.4	10083	1530.6	10097	1527.4	10110	1531.2
10143	1531	10169	1531.2	10193	1532.3	10222	1532.9	10250	1532.2
10302	1532.2	10347	1532.2	10363	1531.6	10389	1532	10421	1531.1
10475	1531.1	10529	1531.1	10581	1529.7	10594	1530.3	10634	1530.6
10654	1530	10667	1530.5	10697	1529.9	10727	1531.7	10771	1532.2
10840	1532.9	10884	1533.5	10956	1533.9	10961	1533.3	10969	1534.6
10995	1534.9	11002	1534	11019	1533.5	11025	1534.9	11065	1535.4

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8217	.045	9107	.07	9205	.045	9484	.04	9537	.045
9962	.04	10052	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9962	10052	1260	1471	1485	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8217	9537	

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach-1	13.28	26700.0	1522.6	1533.7	1533.7	1534.9	0.007372	12.7	3992.1	2106.5	0.8
Reach-1	13.28	26700.0	1522.6	1534.7	1533.7	1535.3	0.003203	9.0	5147.1	1265.0	0.5
Reach-1	13.4	26700.0	1528.7	1538.0	1537.0	1538.4	0.004102	7.6	5608.0	2108.7	0.6
Reach-1	13.4	26700.0	1528.7	1537.6	1537.6	1539.1	0.012521	12.8	2819.0	932.0	1.0
Reach-1	13.55	26700.0	1535.2	1542.9	1542.8	1543.9	0.012936	11.7	3484.5	1578.3	1.0
Reach-1	13.55	26700.0	1535.2	1544.3	1543.1	1544.8	0.004575	8.3	4656.9	1334.0	0.6
Reach-1	13.66	26700.0	1542.1	1548.0	1547.1	1548.4	0.006326	7.0	4948.7	1965.7	0.6
Reach-1	13.66	26700.0	1542.1	1547.8	1547.7	1548.8	0.014124	10.2	3298.5	1427.0	1.0
Reach-1	13.86	26700.0	1546.3	1555.8	1555.5	1556.6	0.009373	9.8	4128.0	1741.1	0.8
Reach-1	13.86	26700.0	1546.3	1556.8	1555.7	1557.4	0.005175	8.3	4613.7	1330.1	0.6
Reach-1	14.07	26700.0	1557.5	1565.0	1564.5	1565.5	0.007320	8.8	4905.3	2080.7	0.7
Reach-1	14.07	26700.0	1557.5	1564.7	1564.7	1565.7	0.012089	11.0	3904.6	1724.0	0.9
Reach-1	14.3	26700.0	1559.6	1574.7	1574.7	1575.6	0.004784	11.0	5349.4	2262.8	0.6
Reach-1	14.3	26700.0	1559.6	1575.6	1575.6	1577.1	0.005707	12.7	3559.7	950.0	0.7
Reach-1	14.54	26700.0	1571.6	1582.6	1582.3	1584.6	0.011116	13.9	2736.9	539.0	0.9
Reach-1	14.54	26700.0	1571.6	1583.5	1582.3	1584.9	0.006827	11.7	3205.2	530.0	0.7
Reach-1	14.74	26700.0	1581.7	1591.6	1591.0	1593.2	0.005904	12.0	2938.6	781.4	0.7
Reach-1	14.74	26700.0	1581.7	1591.2	1591.1	1593.6	0.009086	14.4	2211.1	400.0	0.9
Reach-1	14.89	26700.0	1583.2	1596.3	1596.3	1598.5	0.007794	14.1	2664.2	532.6	0.8
Reach-1	14.89	26700.0	1583.2	1597.1	1596.4	1598.9	0.005738	12.8	2846.9	483.6	0.7
Reach-1	15.06	26700.0	1591.3	1603.0	1602.3	1604.3	0.005587	11.1	3362.9	770.8	0.7
Reach-1	15.06	26700.0	1591.3	1602.9	1602.2	1604.8	0.007887	13.0	2541.3	418.0	0.8
Reach-1	15.12	26700.0	1595.8	1605.2	1605.2	1606.9	0.008722	12.7	2827.1	822.4	0.8
Reach-1	15.12	26700.0	1595.8	1605.4	1605.4	1608.2	0.012392	15.3	2082.6	376.0	1.0
Reach-1	15.22	26700.0	1598.9	1610.2	1610.2	1612.2	0.009111	14.1	2582.6	604.7	0.9
Reach-1	15.22	26700.0	1598.9	1611.3	1610.1	1612.6	0.004988	11.2	3096.1	523.0	0.7
Reach-1	15.41	26700.0	1607.6	1618.4	1616.7	1619.9	0.006996	11.8	2863.0	514.2	0.8
Reach-1	15.41	26700.0	1607.6	1617.6	1616.7	1619.5	0.010619	13.7	2471.3	381.6	0.9
Reach-1	15.55	26700.0	1613.4	1623.0	1622.9	1625.0	0.007952	12.8	2482.1	532.2	0.8
Reach-1	15.55	26700.0	1613.4	1623.6	1623.4	1626.6	0.009184	14.4	1976.4	292.0	0.9
Reach-1	15.75	26700.0	1616.3	1630.0	1629.3	1631.2	0.004905	11.2	3333.3	769.7	0.7
Reach-1	15.75	26700.0	1616.3	1630.9	1628.7	1631.8	0.003186	9.6	3712.9	639.0	0.5
Reach-1	15.89	26700.0	1626.8	1635.5	1635.5	1637.3	0.010358	13.7	2900.6	724.5	0.9
Reach-1	15.89	26700.0	1626.8	1636.7	1636.7	1639.4	0.010491	15.4	2300.1	393.0	0.9
Reach-1	16.07	26700.0	1634.3	1644.0	1643.7	1646.0	0.008036	13.3	2657.9	520.5	0.8
Reach-1	16.07	26700.0	1634.3	1645.1	1644.0	1647.1	0.006317	12.8	2669.4	370.0	0.7
Reach-1	16.19	26700.0	1637.5	1648.8	1648.5	1650.3	0.006226	12.5	3315.6	763.8	0.7

Reach-1	16.19	26700.0	1637.5	1649.1	1648.8	1651.2	0.007260	13.8	2699.6	470.6	0.8
Reach-1	16.27	26700.0	1639.4	1652.8	1652.8	1654.8	0.007406	14.2	3012.4	651.5	0.8
Reach-1	16.27	26700.0	1639.4	1653.7	1653.7	1657.0	0.009168	16.6	2064.0	284.0	0.9
Reach-1	16.49	26700.0	1653.3	1661.8	1660.9	1663.1	0.006947	11.5	3055.4	654.6	0.8
Reach-1	16.49	26700.0	1653.3	1663.0	1661.0	1664.1	0.004133	9.7	3396.4	524.0	0.6
Reach-1	16.68	26700.0	1662.3	1669.5	1667.6	1670.3	0.005864	9.4	3701.4	660.6	0.7
Reach-1	16.68	26700.0	1662.3	1669.1	1667.6	1670.1	0.007260	10.0	3451.7	650.0	0.7
Reach-1	16.86	27300.0	1670.5	1678.7	1678.7	1682.2	0.012826	14.9	1829.0	554.7	1.0
Reach-1	16.86	27300.0	1670.5	1678.8	1678.8	1682.2	0.012439	14.8	1846.7	270.2	1.0
Reach-1	16.865	Bridge									
Reach-1	16.87	27300.0	1669.9	1685.3	1679.1	1686.2	0.001538	7.6	3599.2	1921.0	0.4
Reach-1	16.87	27300.0	1669.9	1685.3	1679.1	1686.2	0.001535	7.6	3601.4	295.5	0.4
Reach-1	16.96	27300.0	1676.2	1686.0	1684.8	1687.7	0.006471	10.8	2853.9	1561.0	0.7
Reach-1	16.96	27300.0	1676.2	1685.9	1684.8	1687.8	0.006972	11.1	2514.7	456.0	0.8
Reach-1	17.06	27300.0	1678.2	1690.0	1689.4	1691.3	0.005862	11.3	3827.9	1052.4	0.7
Reach-1	17.06	27300.0	1678.2	1690.2	1690.2	1692.0	0.007506	13.0	3397.7	870.0	0.8
Reach-1	17.18	27300.0	1686.2	1695.3	1695.3	1697.0	0.009207	13.3	2865.4	857.2	0.9
Reach-1	17.18	27300.0	1686.2	1695.2	1695.2	1697.1	0.009533	13.4	2758.9	755.0	0.9
Reach-1	17.3	27300.0	1692.2	1701.3	1701.3	1702.8	0.007557	12.8	3769.1	1035.6	0.8
Reach-1	17.3	27300.0	1692.2	1701.2	1701.2	1702.8	0.007893	13.0	3593.0	922.0	0.8
Reach-1	17.39	27300.0	1696.2	1705.4	1705.4	1707.1	0.008541	12.0	3169.4	1085.5	0.8
Reach-1	17.39	27300.0	1696.2	1705.3	1705.3	1707.2	0.009126	12.3	2926.1	713.0	0.8
Reach-1	17.48	27300.0	1702.2	1709.5	1709.5	1711.0	0.008642	12.0	3309.1	962.9	0.8
Reach-1	17.48	27300.0	1702.2	1709.5	1709.5	1711.1	0.009000	12.3	3127.5	851.1	0.8
Reach-1	17.57	27300.0	1702.2	1714.0	1714.0	1715.7	0.006889	12.5	3383.3	889.9	0.8
Reach-1	17.57	27300.0	1702.2	1714.0	1714.0	1715.8	0.007211	12.8	3160.3	746.5	0.8
Reach-1	17.65	27300.0	1704.2	1717.4	1717.4	1719.0	0.005370	13.2	3639.3	903.7	0.7
Reach-1	17.65	27300.0	1704.2	1717.3	1717.3	1719.0	0.005538	13.4	3531.0	846.3	0.7
Reach-1	17.78	27300.0	1713.4	1721.9	1721.5	1723.1	0.007738	12.0	3590.8	948.9	0.8
Reach-1	17.78	27300.0	1713.4	1721.9	1721.5	1723.1	0.007440	11.8	3624.2	934.8	0.8
Reach-1	17.84	27300.0	1718.2	1724.5	1724.3	1725.9	0.009558	11.6	3116.7	965.8	0.9
Reach-1	17.84	27300.0	1718.2	1724.4	1724.3	1726.0	0.009906	11.8	3021.5	905.0	0.9
Reach-1	17.95	27300.0	1722.2	1730.1	1730.1	1731.8	0.010079	12.9	3058.4	900.3	0.9
Reach-1	17.95	27300.0	1722.2	1730.0	1730.0	1731.8	0.010527	13.1	2983.2	774.7	0.9
Reach-1	18.09	27700.0	1727.4	1734.8	1733.6	1735.5	0.004778	8.8	4967.6	1505.5	0.6
Reach-1	18.09	27700.0	1727.4	1735.0	1733.4	1736.0	0.005689	9.8	3834.4	715.0	0.7
Reach-1	18.16	27700.0	1728.8	1736.8	1736.7	1738.2	0.011086	13.3	3310.4	988.8	0.9
Reach-1	18.16	27700.0	1728.8	1737.3	1736.7	1738.8	0.009725	12.9	3096.2	651.4	0.9
Reach-1	18.23	27700.0	1730.0	1741.9	1741.9	1743.2	0.007537	13.6	4155.7	1317.0	0.8
Reach-1	18.23	27700.0	1730.0	1742.1	1742.1	1744.0	0.009024	15.2	3170.6	700.0	0.9

Reach-1	18.29	27700.0	1733.5	1743.9	1742.2	1744.7	0.004053	9.6	4330.6	1144.3	0.6
Reach-1	18.29	27700.0	1733.5	1744.7	1742.3	1745.4	0.003152	9.0	4223.5	700.0	0.5
Reach-1	18.49	27700.0	1741.7	1750.4	1750.4	1752.2	0.013275	14.9	2942.7	826.2	1.0
Reach-1	18.49	27700.0	1741.7	1751.0	1751.0	1753.0	0.012442	15.3	2790.5	643.0	1.0
Reach-1	18.57	27700.0	1744.4	1754.9	1754.3	1756.3	0.007411	12.6	3830.3	942.5	0.8
Reach-1	18.57	27700.0	1744.4	1755.5	1754.7	1756.8	0.006659	12.5	3719.7	780.0	0.8
Reach-1	18.74	27300.0	1755.0	1761.6	1760.6	1762.5	0.008627	9.1	3672.8	1150.0	0.7
Reach-1	18.74	27300.0	1755.0	1761.8	1760.6	1762.8	0.008591	9.3	3474.8	745.0	0.7
Reach-1	18.84	27300.0	1755.7	1765.8	1764.6	1766.8	0.008925	9.8	3434.9	1098.3	0.7
Reach-1	18.84	27300.0	1755.7	1766.2	1765.4	1767.6	0.011015	11.4	2973.6	564.0	0.8
Reach-1	18.96	27300.0	1762.2	1771.4	1771.4	1772.6	0.010465	12.2	3946.1	1436.9	0.7
Reach-1	18.96	27300.0	1762.2	1772.1	1771.7	1773.3	0.008747	11.8	3632.2	841.0	0.7
Reach-1	19.07	27300.0	1764.8	1776.4	1775.6	1777.0	0.005187	9.0	5067.5	1627.1	0.5
Reach-1	19.07	27300.0	1764.8	1776.7	1775.6	1777.6	0.005674	9.7	4036.5	830.0	0.6
Reach-1	19.18	27300.0	1770.0	1780.8	1780.8	1782.4	0.014737	12.7	3008.3	841.6	0.9
Reach-1	19.18	27300.0	1770.0	1780.9	1780.9	1782.5	0.015205	12.9	2881.1	748.8	0.9
Reach-1	19.26	27300.0	1773.0	1786.3	1785.4	1787.4	0.008109	12.2	3692.5	1603.0	0.7
Reach-1	19.26	27300.0	1773.0	1786.5	1785.4	1787.6	0.008073	12.3	3557.9	635.0	0.7
Reach-1	19.41	27300.0	1783.9	1791.5	1789.7	1792.1	0.005506	7.7	4680.1	1058.7	0.5
Reach-1	19.41	27300.0	1783.9	1791.6	1789.7	1792.2	0.005285	7.6	4629.9	950.0	0.5
Reach-1	19.52	27300.0	1786.2	1795.3	1794.6	1796.6	0.012918	12.4	3104.6	713.8	0.8
Reach-1	19.52	27300.0	1786.2	1795.3	1794.6	1796.6	0.012790	12.4	3108.1	680.0	0.8
Reach-1	19.62	27300.0	1790.3	1800.9	1799.8	1801.9	0.007762	10.2	3512.6	778.6	0.6
Reach-1	19.62	27300.0	1790.3	1800.9	1799.8	1801.9	0.007775	10.2	3508.4	746.8	0.6
Reach-1	19.72	27300.0	1795.1	1805.1	1804.4	1806.3	0.009626	11.0	3297.0	762.2	0.7
Reach-1	19.72	27300.0	1795.1	1805.1	1804.4	1806.3	0.009768	11.1	3226.3	725.0	0.7
Reach-1	19.83	27300.0	1799.3	1810.6	1810.3	1812.2	0.010909	12.7	3091.1	704.0	0.8
Reach-1	19.83	27300.0	1799.3	1810.7	1810.4	1812.3	0.010874	12.7	3025.8	650.0	0.8
Reach-1	19.92	27300.0	1802.0	1815.3	1814.9	1816.2	0.006344	11.3	4243.3	1250.2	0.6
Reach-1	19.92	27300.0	1802.0	1815.6	1814.8	1816.8	0.007266	12.3	3582.5	683.3	0.7
Reach-1	20.05	27300.0	1810.7	1820.0	1818.7	1820.7	0.005351	10.3	4270.9	1030.8	0.7
Reach-1	20.05	27300.0	1810.7	1820.3	1818.7	1821.0	0.004145	9.4	4654.0	1038.3	0.6
Reach-1	20.16	27300.0	1817.7	1824.7	1824.7	1826.1	0.009915	12.1	3210.2	1112.1	0.9
Reach-1	20.16	27300.0	1817.7	1824.7	1824.7	1826.2	0.009985	12.1	3146.3	1068.4	0.9
Reach-1	20.26	27300.0	1825.1	1830.6	1830.4	1831.8	0.011221	10.0	3462.3	1176.7	0.9
Reach-1	20.26	27300.0	1825.1	1830.7	1830.5	1831.9	0.011358	10.1	3381.3	1145.4	0.9
Reach-1	20.38	27300.0	1829.6	1835.9	1834.5	1836.5	0.006485	8.6	4390.4	1251.3	0.7
Reach-1	20.38	27300.0	1829.6	1836.0	1834.5	1836.6	0.006326	8.5	4389.0	1189.8	0.7
Reach-1	20.48	27300.0	1832.8	1841.1	1841.1	1842.3	0.009294	13.1	3721.4	1280.3	0.9
Reach-1	20.48	27300.0	1832.8	1841.6	1841.6	1843.2	0.009161	13.7	3314.1	906.0	0.9

Reach-1	20.62	27300.0	1839.3	1848.5	1848.5	1849.7	0.007795	13.2	3822.2	1226.4	0.8
Reach-1	20.62	27300.0	1839.3	1849.1	1849.1	1850.6	0.007650	13.7	3321.4	885.0	0.8
Reach-1	20.64	27300.0	1842.0	1849.9	1849.1	1850.6	0.005340	9.0	4479.9	1296.3	0.7
Reach-1	20.64	27300.0	1842.0	1850.5	1849.7	1851.5	0.005735	10.0	3702.7	850.0	0.7
Reach-1	20.71	27300.0	1843.0	1853.2	1853.2	1854.4	0.006964	12.2	4191.8	1434.3	0.8
Reach-1	20.71	27300.0	1843.0	1853.8	1853.8	1855.5	0.007745	13.5	3187.8	810.0	0.8
Reach-1	20.79	27300.0	1847.5	1856.7	1856.2	1857.5	0.006480	9.4	4255.0	1505.1	0.7
Reach-1	20.79	27300.0	1847.5	1857.5	1857.0	1858.9	0.007595	11.1	3035.1	660.0	0.8
Reach-1	20.9	27300.0	1852.6	1862.7	1862.7	1864.0	0.006746	11.9	4010.9	1522.8	0.8
Reach-1	20.9	27300.0	1852.6	1863.0	1863.0	1865.0	0.008305	13.6	3025.1	670.0	0.9
Reach-1	20.98	27300.0	1853.2	1866.4	1866.4	1867.8	0.006276	11.8	3864.9	1374.1	0.8
Reach-1	20.98	27300.0	1853.2	1866.4	1866.3	1868.3	0.007334	12.8	3122.4	670.0	0.8
Reach-1	21.05	27300.0	1857.6	1869.7	1869.7	1871.2	0.005743	12.3	3930.8	1303.6	0.7
Reach-1	21.05	27300.0	1857.6	1869.8	1869.8	1871.8	0.006890	13.5	3172.2	695.0	0.8
Reach-1	21.11	27300.0	1860.5	1872.0	1872.0	1873.6	0.006251	12.5	3665.1	1023.3	0.8
Reach-1	21.11	27300.0	1860.5	1872.1	1872.1	1873.9	0.006719	13.0	3303.7	775.0	0.8
Reach-1	21.18	27300.0	1865.0	1876.0	1876.0	1877.5	0.006016	12.3	3962.1	1446.8	0.8
Reach-1	21.18	27300.0	1865.0	1876.0	1876.0	1877.7	0.006886	12.9	3574.3	900.0	0.8
Reach-1	21.25	27300.0	1868.7	1881.1	1881.1	1882.5	0.004140	12.0	4562.2	1474.1	0.6
Reach-1	21.25	27300.0	1868.7	1881.3	1881.3	1883.3	0.005356	13.6	3442.2	745.0	0.7
Reach-1	21.31	27300.0	1870.7	1882.5	1882.0	1883.8	0.005226	12.5	3878.4	947.8	0.7
Reach-1	21.31	27300.0	1870.7	1883.3	1882.4	1884.7	0.004804	12.7	3662.8	650.0	0.7
Reach-1	21.35	27300.0	1871.5	1883.6	1883.6	1885.4	0.007351	16.2	3571.8	848.0	0.9
Reach-1	21.35	27300.0	1871.5	1884.3	1883.8	1885.9	0.005968	15.2	3672.0	705.0	0.8
Reach-1	21.41	27300.0	1874.2	1887.4	1886.6	1888.7	0.007772	16.3	3853.5	856.7	0.9
Reach-1	21.41	27300.0	1874.2	1887.4	1886.4	1888.9	0.008296	16.8	3497.2	600.0	0.9
Reach-1	21.49	27300.0	1882.0	1891.5	1890.1	1892.6	0.008681	10.5	3538.2	731.3	0.7
Reach-1	21.49	27300.0	1882.0	1891.6	1890.1	1892.7	0.007601	10.0	3652.9	700.0	0.7
Reach-1	21.58	27300.0	1888.0	1895.6	1894.9	1896.4	0.008699	8.9	4052.9	1308.9	0.7
Reach-1	21.58	27300.0	1888.0	1895.7	1895.5	1897.2	0.014487	11.6	3038.4	840.0	0.9
Reach-1	21.63	27300.0	1888.5	1898.4	1897.6	1899.4	0.011227	11.8	3929.3	1405.6	0.8
Reach-1	21.63	27300.0	1888.5	1899.3	1898.4	1900.1	0.006563	9.9	4243.5	1055.0	0.6
Reach-1	21.69	27300.0	1895.1	1902.1	1900.8	1902.7	0.006158	8.3	4934.4	1419.9	0.6
Reach-1	21.69	27300.0	1895.1	1902.3	1901.6	1903.0	0.008966	10.2	4306.8	1330.0	0.7
Reach-1	21.77	27300.0	1897.3	1905.5	1905.5	1907.1	0.015058	12.9	2890.2	929.1	0.9
Reach-1	21.77	27300.0	1897.3	1906.2	1905.5	1907.2	0.009710	11.2	3584.1	1357.7	0.8
Reach-1	21.82	27300.0	1900.5	1909.2	1908.7	1910.3	0.010810	11.4	3654.2	1179.4	0.8
Reach-1	21.82	27300.0	1900.5	1909.1	1909.1	1910.4	0.013571	12.6	3303.0	1088.0	0.9
Reach-1	21.91	27300.0	1906.0	1913.8	1913.0	1914.6	0.008475	9.1	3881.6	1122.6	0.7
Reach-1	21.91	27300.0	1906.0	1914.4	1913.5	1915.4	0.008762	9.8	3484.2	1031.0	0.7

Reach-1	21.99	27300.0	1909.9	1917.8	1917.5	1918.8	0.011966	10.4	3632.2	1401.7	0.8
Reach-1	21.99	27300.0	1909.9	1918.3	1917.7	1919.3	0.010909	10.5	3616.2	1219.1	0.8
Reach-1	22.08	27300.0	1915.0	1922.3	1921.5	1923.0	0.007547	8.1	4411.4	1542.9	0.7
Reach-1	22.08	27300.0	1915.0	1922.7	1921.9	1923.6	0.008319	8.9	3660.2	1125.0	0.7
Reach-1	22.15	27300.0	1919.0	1925.2	1924.7	1926.2	0.011201	8.6	3433.7	1189.6	0.8
Reach-1	22.15	27300.0	1919.0	1925.8	1925.3	1927.0	0.011226	9.5	3199.8	968.7	0.8
Reach-1	22.22	27300.0	1921.5	1928.7	1928.3	1930.2	0.012923	10.3	2802.9	773.0	0.8
Reach-1	22.22	27300.0	1921.5	1929.1	1928.5	1930.7	0.011036	9.7	2730.6	668.5	0.8
Reach-1	22.29	27300.0	1925.5	1932.8	1931.6	1933.8	0.007985	8.6	3478.4	1218.8	0.7
Reach-1	22.29	27300.0	1925.5	1933.1	1932.4	1934.3	0.009150	9.7	3119.7	859.3	0.7
Reach-1	22.36	27300.0	1929.0	1936.7	1936.4	1938.2	0.012739	9.9	2837.9	1042.2	0.8
Reach-1	22.36	27300.0	1929.0	1937.2	1936.6	1938.5	0.010541	9.1	2938.7	781.9	0.8
Reach-1	22.43	27300.0	1934.0	1941.4	1940.3	1942.0	0.007262	7.6	4402.4	1320.5	0.6
Reach-1	22.43	27300.0	1934.0	1942.2	1941.8	1943.4	0.013806	11.7	3410.2	918.0	0.9
Reach-1	22.48	27300.0	1936.0	1943.8	1943.8	1945.2	0.019666	11.9	2921.0	1351.1	1.0
Reach-1	22.48	27300.0	1936.0	1945.1	1944.6	1946.5	0.013063	11.5	3006.9	723.0	0.9
Reach-1	22.56	27300.0	1938.6	1948.4	1947.4	1949.3	0.007050	9.7	3648.5	1101.1	0.7
Reach-1	22.56	27300.0	1938.6	1948.9	1947.8	1950.1	0.007677	10.6	3135.2	635.0	0.7
Reach-1	22.67	27300.0	1944.5	1953.9	1953.9	1955.8	0.013689	14.0	2885.0	718.1	0.9
Reach-1	22.67	27300.0	1944.5	1954.4	1954.4	1956.5	0.013857	14.4	2711.7	575.0	0.9
Reach-1	22.73	27300.0	1947.0	1958.2	1958.1	1959.7	0.010913	14.9	3555.5	915.3	0.9
Reach-1	22.73	27300.0	1947.0	1959.0	1959.0	1961.1	0.012507	16.3	2917.2	531.0	0.9
Reach-1	22.79	27300.0	1950.0	1961.2	1960.9	1962.6	0.007922	12.2	3862.0	1007.1	0.7
Reach-1	22.79	27300.0	1950.0	1962.4	1961.5	1963.7	0.005901	11.5	3709.5	660.0	0.7
Reach-1	22.86	24400.0	1953.5	1964.4	1964.4	1965.8	0.009958	14.1	3379.9	970.7	0.8
Reach-1	22.86	24400.0	1953.5	1965.0	1964.6	1966.3	0.008171	13.2	3294.5	742.0	0.8
Reach-1	22.96	24400.0	1959.6	1974.3	1974.3	1975.7	0.007932	13.9	3550.2	914.1	0.7
Reach-1	22.96	24400.0	1959.6	1974.5	1974.5	1976.7	0.010278	16.0	2940.3	514.8	0.8
Reach-1	23.13	24400.0	1969.8	1981.2	1981.2	1983.0	0.009337	13.9	2995.5	790.2	0.8
Reach-1	23.13	24400.0	1969.8	1982.1	1981.7	1983.9	0.007534	13.2	2848.9	561.0	0.7
Reach-1	23.25	24400.0	1977.3	1987.4	1987.3	1989.0	0.009976	13.6	3217.4	745.9	0.8
Reach-1	23.25	24400.0	1977.3	1988.1	1988.1	1991.0	0.013198	16.6	2156.3	334.0	1.0
Reach-1	23.33	24400.0	1981.1	1991.4	1990.7	1993.0	0.009752	13.1	2624.7	600.4	0.8
Reach-1	23.33	24400.0	1981.1	1993.3	1990.9	1994.6	0.005903	11.1	2665.1	331.0	0.6
Reach-1	23.45	24400.0	1991.5	1998.8	1997.5	2000.0	0.013459	13.0	2812.2	616.7	0.9
Reach-1	23.45	24400.0	1991.5	1998.6	1997.6	2000.1	0.014699	13.4	2544.0	465.0	0.9
Reach-1	23.55	24400.0	1997.0	2004.5	2003.7	2005.7	0.009727	10.7	3023.0	782.6	0.8
Reach-1	23.55	24400.0	1997.0	2005.0	2004.3	2006.7	0.011602	12.4	2553.3	467.0	0.9
Reach-1	23.64	12587.0	2000.0	2009.3	2008.9	2010.2	0.007624	11.4	2232.9	763.5	0.7
Reach-1	23.64	12587.0	2000.0	2010.1	2008.9	2010.7	0.004010	8.9	2777.4	662.0	0.5

Reach-1	23.87	12587.0	2008.8	2018.8	2018.8	2020.3	0.008295	11.8	1669.4	551.9	0.7
Reach-1	23.87	12587.0	2008.8	2019.1	2019.1	2021.0	0.009459	12.7	1409.6	353.0	0.8
Reach-1	23.94	12587.0	2010.4	2022.0	2020.9	2023.0	0.005394	8.8	1914.0	632.0	0.6
Reach-1	23.94	12587.0	2010.4	2022.7	2021.1	2023.5	0.004179	8.2	2007.1	500.0	0.5
Reach-1	24.03	12587.0	2017.5	2025.1	2024.3	2025.8	0.007750	8.4	1961.2	651.9	0.7
Reach-1	24.03	12587.0	2017.5	2025.7	2025.7	2028.0	0.018625	14.0	1067.7	223.0	1.0
Reach-1	24.12	12587.0	2020.6	2029.3	2029.3	2031.0	0.009008	10.9	1387.6	453.4	0.7
Reach-1	24.12	12587.0	2020.6	2030.8	2028.8	2032.1	0.005040	9.2	1444.4	207.0	0.6
Reach-1	24.25	11837.0	2024.0	2035.1	2033.8	2036.1	0.005962	9.7	1609.3	549.1	0.6
Reach-1	24.25	11837.0	2024.0	2035.1	2034.1	2036.5	0.008056	11.2	1298.6	248.0	0.7
Reach-1	24.38	11837.0	2031.5	2039.2	2038.4	2040.3	0.007702	9.9	1604.8	428.1	0.7
Reach-1	24.38	11837.0	2031.5	2039.8	2038.4	2041.0	0.006344	9.6	1511.0	266.0	0.6
Reach-1	24.48	11837.0	2036.8	2043.7	2043.7	2045.1	0.012670	11.6	1365.1	472.2	0.9
Reach-1	24.48	11837.0	2036.8	2044.9	2044.9	2047.2	0.013734	13.5	1069.5	214.0	0.9
Reach-1	24.61	11837.0	2040.2	2050.4	2050.3	2051.5	0.006824	10.5	1888.2	715.7	0.7
Reach-1	24.61	11837.0	2040.2	2052.7	2051.7	2056.2	0.011980	15.0	789.5	79.0	0.8
Reach-1	24.74	11837.0	2045.8	2056.5	2056.5	2057.7	0.006595	9.7	1799.4	712.7	0.6
Reach-1	24.74	11837.0	2045.8	2059.5	2056.0	2060.9	0.004257	9.4	1257.8	125.0	0.5
Reach-1	24.87	8811.0	2054.6	2062.3	2062.3	2063.4	0.008658	9.8	1234.6	538.6	0.7
Reach-1	24.87	8811.0	2054.6	2063.4	2062.5	2065.2	0.008709	11.0	865.5	151.0	0.7
Reach-1	24.95	8811.0	2057.4	2065.3	2063.9	2066.0	0.005402	7.5	1457.8	363.2	0.6
Reach-1	24.95	8811.0	2057.4	2066.9	2065.5	2068.1	0.006090	9.4	1019.9	180.0	0.6
Reach-1	25.12	8811.0	2064.7	2073.3	2073.3	2075.9	0.013629	13.0	742.7	464.7	0.9
Reach-1	25.12	8811.0	2064.7	2073.5	2073.4	2075.9	0.012794	12.7	760.7	155.9	0.9
Reach-1	25.28	8811.0	2071.5	2082.2	2081.3	2082.9	0.004521	8.1	1674.8	635.9	0.5
Reach-1	25.28	8811.0	2071.5	2082.7	2081.5	2083.9	0.006363	9.9	1085.9	190.8	0.6
Reach-1	25.38	8811.0	2079.8	2085.1	2084.3	2085.4	0.006631	5.7	2142.4	1280.6	0.6
Reach-1	25.38	8811.0	2079.8	2086.3	2084.8	2086.6	0.003890	5.4	2182.8	646.0	0.5
Reach-1	25.45	8811.0	2084.8	2088.6	2088.6	2089.5	0.017255	7.8	1160.9	1058.7	0.9
Reach-1	25.45	8811.0	2084.8	2089.3	2089.3	2090.2	0.022397	10.3	1226.5	632.0	1.0
Reach-1	25.56	8811.0	2091.6	2095.7	2095.6	2096.4	0.008208	6.3	1421.4	1298.0	0.6
Reach-1	25.56	8811.0	2091.6	2096.0	2095.6	2096.5	0.006142	5.8	1596.5	807.8	0.6
Reach-1	25.63	8811.0	2095.2	2099.1	2098.8	2100.0	0.012326	7.6	1144.3	674.2	0.8
Reach-1	25.63	8811.0	2095.2	2099.7	2099.7	2100.9	0.017041	10.1	1057.2	520.9	0.9
Reach-1	25.69	8811.0	2098.0	2101.4	2099.9	2101.7	0.003396	3.6	2145.3	1307.5	0.4
Reach-1	25.69	8811.0	2098.0	2104.7	2104.7	2106.7	0.017804	13.6	835.2	190.0	1.0
Reach-1	25.73	8811.0	2100.0	2104.2	2104.2	2106.0	0.018783	11.0	802.8	1798.5	1.0
Reach-1	25.73	8811.0	2100.0	2107.6	2104.2	2108.1	0.002246	5.8	1527.7	215.0	0.4
Reach-1	25.735	Bridge									

Reach-1	25.74	8811.0	2100.0	2109.5	2104.1	2109.9	0.001003	4.6	1918.0	2083.9	0.3
Reach-1	25.74	8811.0	2100.0	2110.3	2104.1	2110.6	0.000806	4.1	2125.0	215.0	0.2
Reach-1	25.78	8811.0	2100.0	2109.6	2107.1	2110.6	0.004870	8.0	1104.8	1905.0	0.6
Reach-1	25.78	8811.0	2100.0	2110.3	2107.1	2111.1	0.003513	7.2	1232.0	172.0	0.5
Reach-1	25.83	8811.0	2105.1	2112.7	2112.7	2114.0	0.013761	10.5	1121.6	2119.7	0.9
Reach-1	25.83	8811.0	2105.1	2113.5	2113.5	2116.2	0.017412	13.0	675.7	126.0	1.0
Reach-1	25.95	8811.0	2110.4	2119.4	2119.3	2120.3	0.007765	9.7	1383.6	2056.8	0.7
Reach-1	25.95	8811.0	2110.4	2121.3	2120.7	2123.3	0.007987	11.8	824.6	141.0	0.7
Reach-1	26.17	8811.0	2121.7	2132.7	2132.7	2133.8	0.009610	10.1	1337.9	597.1	0.7
Reach-1	26.17	8811.0	2121.7	2133.4	2133.3	2136.5	0.017112	14.2	618.7	96.0	1.0

ERRORS WARNINGS AND NOTES
Errors Warnings and Notes for Plan : WMP100yr Con

River: RIVER-1 Reach: Reach-1 RS: 26.17 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 26.17 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.95 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.95 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.83 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 25.83 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.78 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.78 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.74 Profile: Cont. 100-yr
Warning:Multiple water surfaces were found that could balance the energy equation. The program selected the water surface
whose main channel velocity head was the closest to the previously computed 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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 25.74 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Cont. 100-yr
Warning:The pressure flow/weir calculations did not converge within the given number of iterations.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used
for pressure flow.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Cont. 100-yr Upstream
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Cont. 100-yr Downstream
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Cont. 100-yr Enc
Warning:The pressure flow/weir calculations did not converge within the given number of iterations.
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer
has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
answer has been disregarded.
Note: The downstream water surface is above the minimum elevation for pressure flow. The orifice equations were used for
pressure flow.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Cont. 100-yr Enc Upstream
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Cont. 100-yr Enc Downstream
Warning:Multiple water surfaces were found that could balance the energy equation. The program selected the water surface
whose main channel velocity head was the closest to the previously computed 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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 25.73 Profile: Cont. 100-yr
Warning:The energy equation could not 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, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 25.73 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 25.69 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.69 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.63 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.63 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated

water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.56 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.56 Profile: Cont. 100-yr Enc
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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.45 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The 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.
River: RIVER-1 Reach: Reach-1 RS: 25.45 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.38 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.38 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.28 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.28 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.12 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.12 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.95 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.95 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.87 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 24.87 Profile: Cont. 100-yr Enc
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.74 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.74 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.61 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.61 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.48 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.48 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.38 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 24.38 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.25 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.25 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.12 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated

water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.12 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.03 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 24.03 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.94 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.94 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.87 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.87 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated

water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.64 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 23.64 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.55 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 23.55 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.45 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.45 Profile: Cont. 100-yr Enc
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.33 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.33 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.25 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.25 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.13 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated

water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.13 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.96 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.96 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.86 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.86 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.79 Profile: Cont. 100-yr
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.79 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.73 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.73 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.67 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.

Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.67 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.56 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.56 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.48 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.48 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.43 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.43 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.36 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.36 Profile: Cont. 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.29 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.29 Profile: Cont. 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.22 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.22 Profile: Cont. 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.15 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.15 Profile: Cont. 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 22.08 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.08 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.99 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.99 Profile: Cont. 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 21.91 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.91 Profile: Cont. 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.82 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.82 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.77 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The 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.
River: RIVER-1 Reach: Reach-1 RS: 21.77 Profile: Cont. 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.69 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.69 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.63 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.63 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.58 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.58 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.49 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.49 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.41 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.41 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.35 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.35 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.31 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.31 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.25 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.25 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.18 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.18 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.11 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.11 Profile: Cont. 100-yr Enc
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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.05 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 21.05 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.98 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 20.98 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.9 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 20.9 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.79 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.79 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.71 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.71 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.64 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.64 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.62 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.62 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.48 Profile: Cont. 100-yr

Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.48 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.38 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.38 Profile: Cont. 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.26 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 20.26 Profile: Cont. 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 20.16 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.16 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.05 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 20.05 Profile: Cont. 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.92 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.92 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.83 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.83 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.72 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.72 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.62 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 19.62 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.52 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.52 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.41 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.41 Profile: Cont. 100-yr Enc

Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.26 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.26 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.18 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 19.18 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 19.07 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.07 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.96 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.96 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.84 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 18.84 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.74 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.74 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.57 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.57 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.49 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The 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.
River: RIVER-1 Reach: Reach-1 RS: 18.49 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.29 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.29 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.23 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.23 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.16 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.16 Profile: Cont. 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.09 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.09 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.95 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 17.95 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.84 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.84 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.78 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.78 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.65 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.65 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.57 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.57 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.48 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.48 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.39 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.39 Profile: Cont. 100-yr Enc
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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.3 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.3 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.18 Profile: Cont. 100-yr
Warning:The energy equation could not 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.

River: RIVER-1 Reach: Reach-1 RS: 17.18 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.06 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.06 Profile: Cont. 100-yr Enc
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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 16.96 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: RIVER-1 Reach: Reach-1 RS: 16.96 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.87 Profile: Cont. 100-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.87 Profile: Cont. 100-yr Enc
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Cont. 100-yr
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer
has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used
for pressure flow.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Cont. 100-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Cont. 100-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Cont. 100-yr Enc
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer
has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
answer has been disregarded.

Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used
for pressure flow.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Cont. 100-yr Enc Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Cont. 100-yr Enc Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.86 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The 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, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.86 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.68 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.68 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.49 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.49 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.27 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated

water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 16.27 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 16.19 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.19 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.07 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.07 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.89 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 15.89 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 15.75 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.75 Profile: Cont. 100-yr Enc

Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.55 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.55 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.41 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: RIVER-1 Reach: Reach-1 RS: 15.41 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.22 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 15.22 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.12 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 15.12 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.

Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 15.06 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.06 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.89 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 14.89 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.74 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.74 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.54 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.54 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.3 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The

program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 14.3 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 14.07 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 14.07 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 13.86 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 13.86 Profile: Cont. 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 13.66 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.66 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.55 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.55 Profile: Cont. 100-yr Enc

Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.4 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.4 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.28 Profile: Cont. 100-yr
Warning:User specified water surface is not possible for the specified flow regime. The program used critical depth as the
starting water surface.
Warning:Divided flow computed for this cross-section.
River: RIVER-1 Reach: Reach-1 RS: 13.28 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.

HEC-RAS Structural Alternative Controlling Condition 100-year Peak Discharge Model

HEC-RAS September 1998 Version 2.2
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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

PROJECT DATA
Project Title: Watercourse Master Plan - Skunk Creek
Project File : WMP_SC.prj
Run Date and Time: 6/24/01 12:11:32 PM

Project in English units

Project Description:
Skunk Creek Watercourse Master Plan. Prepared for Skunk Creek from the CAP
Canal to north of New River Road
by Stantec Consulting Inc. for ASL Consulting
and the Flood Control District of Maricopa County
FCD: 99-23

Project Start Date:October 1999

This
HEC-RAS model is based on HEC-2 models prepared by Montgomery Watson , Erie and Associates, and Hoskin Engineering Consultants. Montgomery Watson and Erie and Associates models reffect the FIS effective model for FEMA. Hoskins Engineering Counsultants model reflect a CLOMR submiital to FEMA (Case No. 99-09-592R, date of submittal responce 6/2/99).

PLAN DATA

Plan Title: Floodway Structural Alt. 100-year Cont.
Plan File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.p13

Geometry Title: Low Impact Structural Alt.
Geometry File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.g05

Flow Title : 100-yr Controlling Q's
Flow File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.f11

Plan Description:
Floodway Structural Alternative (Use Profile 2 for results)
Skunk
Creek
Channel Section upstream and downstream of New River Road Bridge
Excavated to convey flow.
Low Impact Geometry=Floodway Structural Geometry

Plan Summary Information:
Number of: Cross Sections = 122 Mulitple Openings = 0

Culverts = 0 Inline Weirs = 0
Bridges = 2

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

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

Encroachment Data
Equal Conveyance = True
Left Offset = 0
Right Offset = 0

River = RIVER-1 Reach = Reach-1

RS	Profile	Method	Value1	Value2
26.17	Cont. 100-yr Enc	1	9967	10063
25.95	Cont. 100-yr Enc	1	9923	10064
25.83	Cont. 100-yr Enc	1	9914	10040
25.78	Cont. 100-yr Enc	1	9903	10110
25.74	Cont. 100-yr Enc	1	9894	10115
25.73	Cont. 100-yr Enc	1	9894	10115
25.69	Cont. 100-yr Enc	1	9885	10210
25.63	Cont. 100-yr Enc	1	9931	10477
25.56	Cont. 100-yr Enc	1	9686	10511
25.45	Cont. 100-yr Enc	1	9966	10598
25.38	Cont. 100-yr Enc	1	9650	10296
25.28	Cont. 100-yr Enc	1	9849	10052
25.12	Cont. 100-yr Enc	1	9949	10105
24.95	Cont. 100-yr Enc	1	9920	10100
24.87	Cont. 100-yr Enc	1	9929	10080
24.74	Cont. 100-yr Enc	1	9961	10086
24.61	Cont. 100-yr Enc	1	9944	10023
24.48	Cont. 100-yr Enc	1	9834	10048
24.38	Cont. 100-yr Enc	1	9811	10077
24.25	Cont. 100-yr Enc	1	9951	10199
24.12	Cont. 100-yr Enc	1	9860	10067
24.03	Cont. 100-yr Enc	1	9900	10123
23.94	Cont. 100-yr Enc	1	9542	10042
23.87	Cont. 100-yr Enc	1	9668	10021
23.64	Cont. 100-yr Enc	1	9435	10097
23.55	Cont. 100-yr Enc	1	9766	10233
23.45	Cont. 100-yr Enc	1	9867	10332
23.33	Cont. 100-yr Enc	1	9963	10294
23.25	Cont. 100-yr Enc	1	9874	10208
23.13	Cont. 100-yr Enc	1	9595	10156
22.96	Cont. 100-yr Enc	1	9500	10016
22.86	Cont. 100-yr Enc	1	9450	10192
22.79	Cont. 100-yr Enc	1	9490	10150
22.73	Cont. 100-yr Enc	1	9499	10030
22.67	Cont. 100-yr Enc	1	9475	10050
22.56	Cont. 100-yr Enc	1	9470	10105
22.48	Cont. 100-yr Enc	1	9372	10095
22.43	Cont. 100-yr Enc	1	9192	10110
22.36	Cont. 100-yr Enc	1	9100	10080
22.29	Cont. 100-yr Enc	1	9000	10100
22.22	Cont. 100-yr Enc	1	8918	10067
22.15	Cont. 100-yr Enc	1	8700	10070
22.08	Cont. 100-yr Enc	1	9050	10175
21.99	Cont. 100-yr Enc	1	8765	10090
21.91	Cont. 100-yr Enc	1	8900	10040
21.82	Cont. 100-yr Enc	1	8750	10200
21.77	Cont. 100-yr Enc	1	8694	10165
21.69	Cont. 100-yr Enc	1	8970	10300
21.63	Cont. 100-yr Enc	1	9265	10320
21.58	Cont. 100-yr Enc	1	9415	10255
21.49	Cont. 100-yr Enc	1	9617	10317
21.41	Cont. 100-yr Enc	1	9500	10100
21.35	Cont. 100-yr Enc	1	9400	10105
21.31	Cont. 100-yr Enc	1	9450	10100
21.25	Cont. 100-yr Enc	1	9310	10055
21.18	Cont. 100-yr Enc	1	9200	10100
21.11	Cont. 100-yr Enc	1	9350	10125
21.05	Cont. 100-yr Enc	1	9380	10075

20.98	Cont. 100-yr Enc	1	9390	10060
20.9	Cont. 100-yr Enc	1	9550	10220
20.79	Cont. 100-yr Enc	1	9500	10160
20.71	Cont. 100-yr Enc	1	9500	10310
20.64	Cont. 100-yr Enc	1	9500	10350
20.62	Cont. 100-yr Enc	1	9485	10370
20.48	Cont. 100-yr Enc	1	9424	10330
20.38	Cont. 100-yr Enc	1	9209	10415
20.26	Cont. 100-yr Enc	1	9190	10395
20.16	Cont. 100-yr Enc	1	9202	10489.7
20.05	Cont. 100-yr Enc	1	9420	10473.12
19.92	Cont. 100-yr Enc	1	9710	10393.31
19.83	Cont. 100-yr Enc	1	9770	10420
19.72	Cont. 100-yr Enc	1	9825	10550
19.62	Cont. 100-yr Enc	1	9966	10730.51
19.52	Cont. 100-yr Enc	1	9901	10581
19.41	Cont. 100-yr Enc	1	9660	10610
19.26	Cont. 100-yr Enc	1	9430	10065
19.18	Cont. 100-yr Enc	1	9330	10080
19.07	Cont. 100-yr Enc	1	9485	10315
18.96	Cont. 100-yr Enc	1	9639	10480
18.84	Cont. 100-yr Enc	1	9576	10140
18.74	Cont. 100-yr Enc	1	9380	10125
18.57	Cont. 100-yr Enc	1	9700	10480
18.49	Cont. 100-yr Enc	1	9832	10475
18.29	Cont. 100-yr Enc	1	9630	10330
18.23	Cont. 100-yr Enc	1	9630	10330
18.16	Cont. 100-yr Enc	1	9752	10425
18.09	Cont. 100-yr Enc	1	9895	10610
17.95	Cont. 100-yr Enc	1	9818.68	10595
17.84	Cont. 100-yr Enc	1	9760	10665
17.78	Cont. 100-yr Enc	1	9642.06	10578
17.65	Cont. 100-yr Enc	1	9423.7	10270
17.57	Cont. 100-yr Enc	1	9516.45	10263
17.48	Cont. 100-yr Enc	1	9488.92	10340
17.39	Cont. 100-yr Enc	1	9758	10471
17.3	Cont. 100-yr Enc	1	9628	10550
17.18	Cont. 100-yr Enc	1	9788	10680
17.06	Cont. 100-yr Enc	1	9650	10520
16.96	Cont. 100-yr Enc	1	9914	10370
16.87	Cont. 100-yr Enc	1	9855.48	10152.83
16.86	Cont. 100-yr Enc	1	9850.97	10149.03
16.68	Cont. 100-yr Enc	1	9940	10590
16.49	Cont. 100-yr Enc	1	9906	10430
16.27	Cont. 100-yr Enc	1	9760	10045
16.19	Cont. 100-yr Enc	1	9600	10077
16.07	Cont. 100-yr Enc	1	9760	10130
15.89	Cont. 100-yr Enc	1	9817	10210
15.75	Cont. 100-yr Enc	1	9477	10116
15.55	Cont. 100-yr Enc	1	9890	10182
15.41	Cont. 100-yr Enc	1	9968	10353
15.22	Cont. 100-yr Enc	1	9977	10500
15.12	Cont. 100-yr Enc	1	9975	10351
15.06	Cont. 100-yr Enc	1	9972	10390
14.89	Cont. 100-yr Enc	1	9600	10100
14.74	Cont. 100-yr Enc	1	9700	10100
14.54	Cont. 100-yr Enc	1	9950	10480
14.3	Cont. 100-yr Enc	1	9210	10160
14.07	Cont. 100-yr Enc	1	8805	10529
13.86	Cont. 100-yr Enc	1	8708	10232
13.66	Cont. 100-yr Enc	1	9055	10482
13.55	Cont. 100-yr Enc	1	9160	10494
13.4	Cont. 100-yr Enc	1	9670	10602
13.28	Cont. 100-yr Enc	1	9537	10802

FLOW DATA

Flow Title: 100-yr Controlling Q's
Flow File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.f11

Flow Data (cfs)

River	Reach	RS	Cont. 100-yr	Cont. 100-yr Enc
RIVER-1	Reach-1	26.17	8811	8811
RIVER-1	Reach-1	24.74	11837	11837
RIVER-1	Reach-1	24.12	12587	12587
RIVER-1	Reach-1	23.55	24400	24400
RIVER-1	Reach-1	22.79	27300	27300

RIVER-1	Reach-1	18.57	27700	27700
RIVER-1	Reach-1	17.95	27300	27300
RIVER-1	Reach-1	16.68	26700	26700

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
RIVER-1	Reach-1	Cont. 100-yr		Known WS = 1533.7
RIVER-1	Reach-1	Cont. 100-yr Enc		Known WS = 1534.7

GEOMETRY DATA

Geometry Title: Low Impact Structural Alt.
Geometry File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.g05

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 26.17

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9940	2138.3	9957	2136.6	9967	2132.3	9980	2122.5	9988	2121.9
10000	2121.7	10020	2128.2	10039	2129.9	10063	2131.5	10085	2131.2
10098	2131.5	10122	2130.8	10141	2129.5	10155	2130.1	10165	2130.2
10194	2131.5	10227	2131.8	10274	2131.3	10286	2130.2	10302	2128.2
10313	2129.3	10335	2130.8	10373	2131.2	10391	2129.7	10403	2128.3
10418	2129.7	10448	2132.6	10472	2131.9	10501	2132.9	10535	2133.3
10566	2133.4	10609	2132.5	10640	2131.9	10651	2131.7	10668	2132.7
10720	2134.4	10759	2135.1	10820	2136.1	10860	2136.5	10933	2136
10948	2136.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9940	.045	9967	.045	10063	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967	10063	1225	1132	1040	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10472	10948	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.95

INPUT
Description:
Station Elevation Data num= 81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9254	2123.2	9297	2119.8	9322	2117.2	9353	2116.1	9368	2116.6
9416	2115.7	9426	2115.9	9474	2115.4	9487	2112.1	9494	2114.1
9507	2113.7	9517	2111.4	9520	2111.4	9529	2115	9568	2116.1
9609	2115.2	9623	2114	9634	2115.1	9657	2115.8	9681	2116.6
9694	2115.6	9727	2116.5	9777	2117.5	9802	2117.4	9841	2117.8
9912	2117.6	9923	2119	9936	2118.9	9941	2117.6	9969	2117.5
9986	2118.1	10000	2110.8	10020	2110.4	10032	2113.5	10046	2114.2
10057	2117.7	10072	2119.5	10096	2119.9	10103	2119.4	10132	2119.1
10144	2117.6	10154	2117.5	10169	2119.2	10217	2119.1	10258	2118.1
10282	2118.8	10315	2118.9	10363	2118.6	10380	2116.5	10387	2116.4
10398	2117.4	10425	2117.6	10461	2117.2	10490	2116.9	10512	2116
10538	2116.2	10580	2115.9	10593	2116.3	10616	2116.8	10644	2116.5
10658	2116.2	10680	2116.1	10729	2116.1	10781	2115.9	10829	2115.7
10882	2115.5	10993	2115.9	11030	2115.8	11108	2115	11161	2114.4
11189	2113.5	11205	2110.3	11222	2110.5	11235	2112.9	11242	2109.1
11249	2109.1	11264	2112.8	11290	2114.5	11327	2117	11367	2118.6
11510	2123.3								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9254	.045	9681	.035	9986	.045	10057	.055	10363	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986	10057	600	620.6	625	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9254	9923		10616	11510	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.83

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9211	2114.5	9263	2109.9	9290	2108.9	9328	2107.8	9372	2106.5
9395	2103.6	9420	2106.3	9450	2108.1	9502	2109.1	9536	2108.8
9569	2109.2	9592	2108.7	9604	2107.9	9618	2108.9	9668	2109.6
9705	2110.4	9758	2110.5	9812	2111	9853	2110.6	9906	2110.8
9914	2111.8	9938	2110.2	9966	2108.1	10000	2106	10012	2105.1
10025	2105.3	10040	2112.7	10048	2111	10092	2111.1	10157	2110.8
10190	2109.6	10217	2110.4	10245	2109.9	10299	2110.7	10312	2113
10327	2113.3	10343	2113.7	10361	2113.6	10375	2113.1	10387	2111.3
10441	2111.1	10482	2110.5	10503	2110.8	10535	2111.1	10556	2110.7
10612	2110	10639	2108.4	10665	2109.7	10700	2110.1	10738	2109.5
10759	2108.4	10779	2108.1	10805	2108.8	10831	2109.2	10856	2108.6
10900	2109.7	10946	2110.1	10987	2109.6	11018	2109.2	11025	2109.6
11062	2109	11099	2108.7	11124	2108.2	11135	2106.6	11149	2108.1
11202	2106.3	11211	2104.6	11220	2104.6	11228	2107	11262	2108
11305	2109.4	11347	2110.1	11359	2110.5	11456	2114		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9211	.055	9502	.045	9914	.045	10040	.055	10299	.035
10387	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9914	10040	220	250	350	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9211	9914		10327	11456	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.78

INPUT
Description: Modified river to add a trapz. section
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9155	2110	9185	2108	9215	2106	9245	2104	9275	2102
9290	2102	9325	2104	9380	2105	9435	2104	9493	2105
9558	2104.5	9580	2106	9660	2107.5	9765	2107	9795	2108
9903	2108	9919	2100	10000	2100	10084	2100	10100	2108
10110	2110	10139	2111.77	10158	2112.14	10177	2111.84	10200	2110
10210	2108	10370	2106	10625	2106	10720	2104	10775	2104
10800	2102	10821	2102	10839	2103	10858	2102	10868	2102
10915	2104	10955	2102	10970	2100	10980	2100	11015	2102
11040	2104	11075	2106	11105	2108	11175	2110		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9155	.055	9380	.045	9903	.045	10110	.035	10210	.045
10625	.055	10915	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9903	10110	195	195	195	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9155	9903.58	2112.33	10158	11175	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.74

INPUT
Description: Modified to allow flow in all cells in bridge.
Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9889.9	2111.64	9889.9	2105	9894.9	2105	9903	2100	10100	2100
10105	2102	10115	2105	10120	2105	10120	2113.27		

Manning's n Values num= 1

Sta	n Val
9889.9	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9889.9	10120	84	84	84	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev

```
  9889.9 9894.83 2113.46   10115   10120

BRIDGE                  RIVER: RIVER-1
REACH: Reach-1             RS: 25.735

INPUT
Description: New River Bridge
Distance from Upstream XS =       0
Deck/Roadway Width        =      84
Weir Coefficient          =     2.6
Bridge Deck/Roadway Skew  =       0
Upstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  9877.9 2109.73    2100 9888.38 2109.82    2100 9888.38 2111.64    2100
  9889.9  2111.7 2105.84    9903 2111.83 2105.84  9927.1 2111.83 2105.84
 10072.9 2113.27 2107.28   10105 2113.27 2107.28   10120 2111.73 2107.28
 10122.1 2111.73    2100

Upstream Bridge Cross Section Data
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9889.9 2111.64  9889.9    2105  9894.9    2105    9903    2100   10100    2100
   10105    2102   10115    2105   10120    2105   10120 2113.27

Manning's n Values        num=       1
     Sta   n Val
  9889.9    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
        9889.9   10120             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
  9889.9 9894.83 2113.46   10115   10120

Downstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  9877.9 2109.73    2100 9888.38 2109.82    2100 9888.38 2111.64    2100
  9889.9  2111.7 2105.84    9903 2111.83 2105.84  9927.1 2111.83 2105.84
 10072.9 2113.27 2107.28   10105 2113.27 2107.28   10120 2111.73 2107.28
 10122.1 2111.73    2100

Downstream Bridge Cross Section Data
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9889.9 2111.64  9889.9    2105  9894.9    2105    9903    2100   10100    2100
   10105    2102   10115    2105   10120    2105   10120 2113.27

Manning's n Values        num=       1
     Sta   n Val
  9889.9    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
        9889.9   10120             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
  9889.9 9894.83 2113.46   10115   10120

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 Piers =  4

Pier Data
Pier Station     Upstream=  9927.1    Downstream=  9927.1
Upstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109
Downstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109

Pier Data
Pier Station     Upstream=  9975.7    Downstream=  9975.7
Upstream     num=       2
```

```
    Width   Elev    Width   Elev
       3    2098       3    2109
Downstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109

Pier Data
Pier Station     Upstream= 10024.3    Downstream= 10024.3
Upstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109
Downstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109

Pier Data
Pier Station     Upstream=10072.29    Downstream=10072.29
Upstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109
Downstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum                Cd   =     1.2
       Yarnell                 KVal =      .9
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.73

INPUT
Description: Modified to have flow in all the cell of the bridge.
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9889.9 2111.64  9889.9    2105  9894.9    2105    9903    2100   10100    2100
   10105    2102   10115    2105   10120    2105   10120 2113.27

Manning's n Values        num=       1
     Sta   n Val
  9889.9    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9889.9   10120              200     200     200              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
  9889.9 9894.83 2113.46   10115   10120

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.69

INPUT
Description: Modified cross-section, beginning of training dike for the west
             side
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9130    2104    9180    2102    9225    2100    9280    2098    9290    2096
    9300    2094    9320    2094    9330    2096    9340    2098    9460    2100
    9630    2100    9660    2102    9720    2104    9730    2106    9795    2108
    9801 2109.08    9820 2109.48    9839 2109.21    9865    2108    9875    2106
    9880    2104    9885    2102    9894    2098    9990    2098   10010    2098
   10202    2098   10210    2103   10340    2100   10430    2098   10515    2096
   10550    2096   10575    2098   10650    2099   10670    2098   10685    2096
   10710    2096   10765    2098   10810    2100   10835    2102   10880    2104
```

10890	2104

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9130	.055	9460	.045	9630	.035	9885	.045	10210	.055
10430	.045	10765	.035						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9885	10210	250	250	250	.3	.5

Ineffective Flow num= 1

Sta L	Sta R	Elev
9130	9820	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.63

INPUT
Description: Modified x-section
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9056	2104.7	9103	2102.4	9143	2100.5	9174	2098.6	9198	2095.5
9214	2092.8	9227	2089.7	9244	2090.3	9261	2093.5	9275	2094.7
9289	2095.8	9335	2097.9	9384	2099.1	9438	2099.6	9493	2099.9
9543	2100.2	9596	2100.5	9624	2100.9	9647	2106.9	9662	2107.2
9693	2106.8	9707	2106.2	9728	2102.4	9762	2101.7	9788	2101.2
9832	2101.2	9886	2101.1	9904	2100.3	9919	2098.8	9934	2098.6
9939	2101	9948	2096	9954	2095.4	9965	2095.2	10131.6	2095.2
10150	2099.8	10155	2099.8	10209	2099.6	10251	2099.2	10299	2098
10317	2096.3	10334	2097.8	10367	2097.6	10381	2097	10417	2096.4
10431	2093	10444	2093	10458	2094.6	10468	2094.7	10477	2095.1
10487	2096.5	10508	2096.8	10530	2093.2	10540	2093.3	10570	2096.9
10603	2101.2	10627	2104.4						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9056	.055	9335	.045	9624	.035	9939	.045	10131.6	.055
10417	.045	10570	.035						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9939	10150	375	365.7	350	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9056	9707	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.56

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8984	2100.4	9019	2098.8	9059	2098	9098	2096	9131	2094
9168	2093	9193	2092.3	9224	2089.6	9237	2086.1	9256	2085.5
9268	2087.2	9288	2092.9	9307	2094.5	9336	2095.3	9368	2095.4
9413	2095.2	9460	2095	9487	2095	9519	2094.8	9538	2094.4
9554	2098.2	9566	2098.6	9595	2098.5	9608	2097.9	9624	2095
9642	2094.1	9652	2095.3	9680	2096.3	9687	2095.9	9706	2096.2
9716	2095.4	9745	2095.2	9777	2094.6	9800	2094.9	9817	2094.6
9823	2093.7	9842	2094.9	9883	2094.8	9898	2095.2	9927	2095.2
9952	2094.7	9968	2092.3	9977	2091.6	9996	2091.8	10000	2091.9
10010	2095.6	10048	2095.6	10094	2095.1	10121	2093.8	10134	2094.6
10169	2094.8	10215	2094	10221	2093.5	10231	2094.1	10277	2094.3
10298	2094.6	10305	2094	10315	2094.7	10348	2094.9	10375	2094.8
10390	2092.6	10406	2086	10413	2085.6	10422	2086.2	10446	2091
10478	2093	10511	2094.8	10542	2096.6	10564	2097.9		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8984	.055	9307	.045	9538	.035	9680	.055	9952	.045
10010	.055	10390	.045	10446	.035				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9952	10010	535	583.5	600	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8984	9608	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.45

INPUT

Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9124	2092.6	9188	2091	9236	2089.7	9290	2088.1	9314	2086.9
9329	2085.1	9367	2084.6	9383	2081	9394	2081	9412	2083.6
9434	2085.2	9464	2086.6	9517	2087.6	9557	2088.1	9570	2088
9600	2088.4	9633	2089.3	9650	2088.7	9679	2088.5	9715	2088.2
9731	2088.9	9761	2089.3	9775	2089.8	9813	2090.2	9861	2090.2
9909	2089.6	9941	2088.8	9966	2088.8	9975	2085.1	10000	2084.8
10010	2086.9	10026	2086.9	10038	2088.5	10053	2086.9	10072	2087.9
10093	2088.3	10113	2088.1	10127	2084.7	10132	2084.6	10148	2087.4
10182	2088	10230	2088.5	10266	2088.2	10301	2087.8	10312	2085.6
10322	2087.2	10347	2087.7	10374	2087.3	10388	2086.2	10394	2086.2
10414	2087.9	10440	2088.5	10488	2089	10513	2088.4	10533	2086.7
10551	2086.8	10575	2085.6	10598	2082	10615	2081.7	10641	2082.7
10653	2087.7	10679	2089.2	10705	2089.8	10742	2090.3	10771	2091.5
10780	2090.5	10793	2092.7						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9124	.055	9434	.045	9517	.035	9861	.045	9966	.045
10038	.055	10575	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9966	10038	375	362.2	375	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9124	9861	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.38

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8816	2090.3	8849	2088.6	8903	2087.3	8954	2085.3	9005	2083.9
9032	2082.6	9045	2082.1	9053	2082.7	9066	2082.1	9076	2080.1
9083	2080	9098	2081.8	9126	2081.8	9174	2083.8	9211	2084.9
9235	2085.4	9244	2085.7	9247	2084.8	9262	2085.9	9276	2086
9287	2085.7	9308	2085	9333	2084.6	9379	2084.1	9415	2083.9
9447	2083.6	9487	2082.2	9510	2081.2	9523	2081.6	9549	2082
9565	2081.8	9571	2082.4	9601	2082.5	9624	2082.8	9672	2083.3
9697	2083.3	9725	2082.4	9760	2083.4	9775	2084.1	9795	2084
9810	2083.4	9830	2084.8	9865	2084.7	9873	2081.6	9883	2081.7
9892	2082.7	9910	2083.3	9940	2082.8	9952	2080.6	9967	2082.1
9984	2080.3	10000	2079.8	10012	2083.8	10026	2083.2	10037	2083.3
10071	2081.7	10085	2081.5	10094	2084	10109	2084.6	10140	2084.3
10152	2082.2	10162	2084.6	10174	2084	10194	2080.9	10203	2084.5
10236	2084.5	10262	2078.2	10281	2078.9	10296	2084.1	10336	2085.8
10404	2087	10466	2089.1	10498	2089.3	10528	2090.7	10546	2091.2

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8816	.055	9174	.045	9244	.035	9287	.055	9697	.07
9865	.045	10012	.07	10236	.045	10296	.055		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9865	10012	255	538.7	760	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8816	9287	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.28

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8848	2089.8	8893	2088.3	8943	2087.1	8997	2086.2	9033	2085
9077	2083.4	9099	2081.8	9134	2081.2	9154	2080.2	9166	2078.5
9174	2078	9181	2080.2	9199	2080.4	9222	2081.1	9234	2082.1
9269	2082.8	9292	2084.1	9320	2085	9323	2084.5	9330	2084.8
9337	2085.5	9360	2085.8	9378	2085.7	9386	2084.3	9409	2084
9433	2083.4	9450	2082.5	9487	2082	9498	2082.2	9523	2082.7
9552	2082.6	9577	2082.3	9606	2081.3	9632	2079.8	9648	2079.1
9657	2079.9	9675	2080.1	9687	2078.5	9707	2079.9	9725	2079.3
9767	2079.4	9791	2079.5	9807	2079	9838	2079.3	9849	2078.9
9887	2078.6	9899	2077.3	9919	2078.7	9954	2078.7	9965	2077.8
9978	2075.1	9995	2072.6	10000	2072.3	10014	2071.5	10024	2074

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   10052  2089.4   10060  2090.5

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    8848    .055    9320    .035    9378    .055    9954    .045   10052    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9954   10052             950   867.5     715             .3        .5
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    8848    9552

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.12

INPUT
Description:
Station Elevation Data     num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9560  2078.3    9570  2077.5    9586  2077.5    9612  2076.9    9632  2076.2
    9637  2077.3    9654  2074.7    9667  2074.1    9676  2075.1    9703  2074.3
    9721  2072.5    9740  2071.6    9774  2069.4    9798  2066.9    9819  2069.4
    9826  2068.6    9836  2069.9    9855    2071    9872  2071.7    9903  2074.9
    9928  2074.9    9949  2073.5    9976  2066.7    9985  2066.2   10000  2064.7
   10008  2065.2   10033    2065   10053  2070.6   10079  2072.1   10092  2071.5
   10104  2072.4   10113  2075.3   10125    2075   10138  2071.2   10173    2073
   10184  2072.5   10211    2072   10240  2072.3   10242  2077.9   10253  2072.5
   10267  2072.4   10289  2075.6   10312  2082.4

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9560    .055    9949    .045   10053     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9949   10053             900   867.7     800             .1        .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    9560    9928           10113   10312

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 24.95

INPUT
Description:
Station Elevation Data     num=      30
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9846  2075.2    9874  2073.3    9901    2070    9920  2064.7    9939  2064.6
    9953  2064.3    9975  2063.7    9989  2057.4   10000  2057.7   10007  2059.4
   10018  2059.9   10024  2059.3   10033  2060.4   10069  2060.5   10086  2059.2
   10097  2060.5   10121  2060.3   10135  2061.5   10159  2062.9   10173  2062.7
   10185  2062.2   10201  2060.8   10204  2061.1   10226  2060.5   10236  2061.2
   10248  2061.2   10258  2060.2   10266    2060   10275  2063.2   10296  2070.9

Manning's n Values         num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9846     .07    9920    .045    9975    .045   10097    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9975   10097             485   405.6     285             .1        .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 24.87

INPUT
Description:
Station Elevation Data     num=      24
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9592  2071.9    9602  2067.9    9659  2061.1    9754  2061.7    9770  2061.3
    9816  2061.2    9870  2061.7    9911  2061.6    9917  2059.7    9929  2061.1
    9962  2060.7    9978    2055   10000  2054.6   10012  2056.3   10042  2056.4
   10057  2057.8   10071  2059.1   10100  2058.6   10124  2057.2   10135  2060.1
   10157  2060.8   10172  2061.5   10198  2062.8   10237    2071

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9592    .055    9659    .045    9911    .055    9962    .045   10071    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9962   10071             775   732.8     685             .1        .3

CROSS SECTION          RIVER: RIVER-1
```

REACH: Reach-1 RS: 24.74

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9431	2065.3	9450	2062.9	9482	2060.4	9498	2058.1	9511	2057.8
9536	2057	9547	2056.2	9561	2055.2	9579	2054.7	9591	2055.9
9620	2055.8	9659	2055.4	9701	2055.4	9721	2055.2	9748	2055.4
9770	2055.3	9802	2055.6	9824	2054.7	9841	2055.2	9891	2055.4
9906	2055.2	9937	2055.1	9961	2055	9981	2045.8	10000	2046.1
10011	2048.3	10036	2049.5	10065	2051.2	10086	2053.8	10124	2053.9
10146	2054.1	10180	2053.1	10189	2052	10200	2052	10217	2055.6
10239	2055.5	10273	2057.7	10328	2062.1	10369	2063.9	10394	2065.4
10436	2065.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9431	.035	9961	.045	10086	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9961	10086	615	668.8	615	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.61

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9419	2052.5	9428	2050.4	9460	2049.9	9502	2049.7	9538	2049.3
9575	2049.2	9619	2048.9	9675	2048.8	9704	2048.7	9738	2048.4
9755	2044.8	9775	2044.9	9782	2046.7	9798	2047.7	9821	2048.5
9858	2048.6	9893	2048	9915	2046	9921	2046.2	9934	2045.9
9944	2046.1	9959	2042.9	9984	2040.7	10000	2040.2	10012	2045.3
10023	2046.5	10037	2045.5	10050	2047	10074	2048.1	10086	2049.2
10096	2049.8	10130	2050.2	10157	2050.7	10182	2051	10196	2051.4
10219	2051.6	10244	2051.8	10250	2052.4	10264	2052.8	10291	2054.9
10312	2056.3								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9419	.035	9738	.045	9798	.07	9944	.045	10023	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9944	10023	730	668.9	725	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.48

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9589	2047	9620	2043.8	9644	2042.3	9664	2042.4	9675	2039.1
9685	2039.4	9706	2039.2	9717	2038.5	9726	2040.8	9753	2042.6
9785	2043.3	9802	2040.4	9842	2040.4	9882	2041.8	9921	2041.7
9951	2041.5	9962	2037.2	10000	2036.8	10008	2038.7	10037	2037.8
10048	2042.9	10072	2042.5	10105	2044.3	10138	2046.9	10176	2048.9

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9589	.055	9675	.035	9717	.055	9951	.045	10048	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10048	385	501.7	550	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.38

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9708	2051.6	9743	2042	9780	2037.7	9794	2036	9811	2035.7
9834	2035.6	9863	2035.8	9875	2033.7	9888	2033.6	9897	2031.6
9911	2032.7	9930	2032.8	9944	2031.5	9954	2033.6	9974	2034
9981	2032.9	10000	2032.7	10004	2034	10038	2035.1	10077	2036.3
10089	2035.5	10095	2036.1	10138	2037.2	10160	2043	10176	2037.4
10193	2038	10210	2037.8	10223	2039.4	10290	2039.9	10329	2039.4
10377	2039.7	10388	2041	10437	2041.6	10478	2044	10503	2045.1

```
Manning's n Values          num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
    9708    .055    9888    .045   10004    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9888   10004              640   708.8     450             .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev
   10160   10503

CROSS SECTION           RIVER: RIVER-1
REACH: Reach-1             RS: 24.25

INPUT
Description:
Station Elevation Data     num=       35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9735  2047.9    9770  2040.4    9798  2037.4    9809  2035.3    9832  2034.2
    9842  2033.9    9867  2034.4    9901  2033.8    9951  2034.6    9968  2025.5
    9981  2024.8   10000  2024.2   10004    2024   10018  2034.5   10045  2032.8
   10052  2033.1   10070  2031.6   10114    2032   10129    2031   10144    2031
   10162  2027.1   10175  2027.4   10199  2027.2   10247  2035.8   10261  2034.3
   10281  2033.5   10295  2034.3   10311  2033.9   10361    2035   10407  2035.5
   10444    2036   10491  2037.1   10532  2038.2   10565  2038.8   10589  2040.1

Manning's n Values          num=        5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9735    .055    9809    .045    9951    .045   10018    .055   10144    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9951   10018              765   708.6     665             .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev
   10247   10589

CROSS SECTION           RIVER: RIVER-1
REACH: Reach-1             RS: 24.12

INPUT
Description:
Station Elevation Data     num=       36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9627    2040    9648  2033.7    9664  2033.1    9693  2033.6    9726  2033.9
    9737  2028.6    9750  2028.2    9778  2028.8    9813  2028.5    9838    2028
    9859  2027.8    9911  2026.6    9920  2024.1    9941  2023.5    9944  2020.6
    9956  2020.7    9961  2021.2    9986  2021.6   10000  2021.8   10027  2022.2
   10043  2023.4   10067  2027.2   10094  2028.1   10126  2027.9   10153  2028.3
   10187  2029.3   10228  2029.8   10272  2030.5   10330  2032.1   10374  2033.3
   10393  2034.3   10430  2035.9   10455  2036.7   10506    2038   10545  2039.2
   10570  2040.1

Manning's n Values          num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
    9627    .045    9911    .045   10067    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9911   10067              450   451.7     440             .1       .3

CROSS SECTION           RIVER: RIVER-1
REACH: Reach-1             RS: 24.03

INPUT
Description:
Station Elevation Data     num=       38
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9750    2028    9768  2019.6    9783  2023.4    9793  2023.5    9806  2021.3
    9819  2018.8    9824  2018.8    9838  2022.7    9872  2024.3    9889  2024.4
    9903  2023.6    9917  2022.7    9932  2025.1    9958  2021.5    9976  2017.5
   10000  2017.6   10003  2017.8   10023  2022.1   10063    2021   10077  2021.8
   10095  2021.2   10109  2017.8   10123  2017.9   10134  2019.5   10146  2019.9
   10165  2018.6   10194  2023.3   10218    2024   10256  2022.9   10289  2023.4
   10362  2024.1   10370  2023.3   10375  2024.5   10405  2024.9   10435  2026.5
   10485  2026.3   10501  2027.5   10536  2029.8

Manning's n Values          num=        4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9750    .045    9932    .045   10023    .055   10194    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9932   10023              585   457.8     300             .1       .3
```

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.94

INPUT
Description: THE PRESENCE OF INNER-CHANNEL ISLANDS AT THIS CROSS-SECTION CAUSE FLOODWAY TOPWID TO EXCEED FLOODPLAIN TOPWID HOWEVER, FLOODWAY IS WITHIN BOUNDARIES OF FLOODPLAIN
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9516	2027.1	9533	2017.8	9551	2016	9572	2015.9	9596	2019.4
9626	2019.8	9671	2020.8	9700	2021	9725	2021.4	9769	2021
9789	2020.7	9809	2021.5	9827	2020.9	9848	2021	9880	2020.6
9894	2017.4	9919	2016.4	9946	2015.4	9968	2013.2	9979	2011.7
10000	2010.6	10002	2010.4	10020	2020.1	10036	2020.1	10042	2015.1
10055	2020.1	10073	2020.4	10100	2020.9	10118	2020.8	10131	2021.6
10153	2021.9	10190	2023.1	10226	2025.2	10261	2026.9	10293	2029.9

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9516	.045	9596	.055	9880	.045	10020	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9880	10020	340	403.2	435	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.87

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9487	2023.3	9499	2022.3	9550	2020.6	9575	2020.9	9594	2019.9
9628	2018	9648	2013.9	9662	2013.6	9669	2013.8	9681	2013.5
9700	2015.5	9728	2016.7	9769	2017	9804	2016.9	9825	2016.1
9842	2017	9875	2017.1	9907	2017.7	9934	2016.7	9951	2010.1
9969	2009.9	9975	2009.2	10000	2008.8	10006	2009	10021	2016.7
10039	2017	10054	2016.6	10083	2016.7	10098	2017.3	10134	2018
10166	2018.8	10207	2020.4	10234	2020.9	10273	2023.6	10306	2025.8

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9487	.045	9628	.045	9728	.07	9934	.045	10021	.1
10098	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9934	10021	1125	1179.6	1200	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.64

INPUT
Description:
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9081	2012	9109	2009.1	9138	2010.9	9200	2010.6	9231	2010.6
9271	2010	9295	2008.5	9317	2009.8	9349	2009.9	9387	2008.2
9404	2009.2	9421	2009.5	9435	2008.6	9458	2008.8	9510	2007.8
9517	2007.1	9528	2007	9537	2007.6	9556	2007.1	9572	2008.1
9599	2007.9	9630	2007.7	9658	2006.6	9671	2006.6	9677	2005.6
9691	2005.5	9701	2007.7	9715	2007.4	9720	2008.3	9732	2008.1
9747	2006.4	9767	2007.3	9799	2006.7	9846	2004.9	9855	2003.6
9863	2002.8	9877	2004.4	9889	2003	9912	2002.9	9925	2004.6
9941	2003.7	9970	2003.6	9978	2000.1	10000	2000	10005	2000.5
10019	2005.1	10032	2004.9	10039	2003.1	10054	2006	10071	2006.1
10078	2005.8	10097	2007	10114	2009.5	10136	2012.2	10155	2015.7

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9081	.055	9846	.07	9970	.045	10019	.1

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970	10019	525	500.2	460	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9081	9421	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.55

INPUT

Description: Cross Section 23.55 Lengthened 44 feet At Right Overbank Using Topographic Maps

Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9263	2009.4	9315	2008.5	9335	2008.3	9375	2007.2	9405	2006.5
9440	2005.9	9466	2005.3	9486	2004.5	9531	2003.7	9555	2003.9
9559	2004.9	9569	2003.2	9588	2003.1	9594	2003.9	9603	2003.2
9647	2002.1	9661	2001.6	9696	2002.5	9730	2001.9	9743	1996.9
9766	1996.7	9781	1999.4	9791	1999	9801	1999.7	9809	1999.5
9835	2000.3	9840	1999.1	9849	1999.5	9869	1999.2	9882	2000.3
9905	2000.6	9916	2001.2	9945	2000.5	9959	1997.4	9976	1997
10000	1997.7	10014	1997.9	10028	1999.2	10062	1999.6	10069	1999.4
10076	1997.9	10081	1997.7	10091	1998.5	10102	2001.1	10131	2001.7
10157	2001.3	10184	2000.2	10202	1998.8	10213	1999.1	10233	1998.6
10242	1997.8	10248	1997.9	10264	2003.1	10289	2006	10308	2010

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9263	.045	9730	.045	9781	.055	9945	.045	10102	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945	10102	325	545.1	595	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9263	9559	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.45

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9460	2004	9576	2001.8	9590	2001.7	9623	2000.8	9662	1999.9
9712	1999.2	9731	1998.8	9753	1998	9787	1997.6	9817	1998.1
9850	1997.8	9874	1993.1	9888	1991.8	9909	1991.4	9927	1993.8
9951	1994.2	9959	1995.1	9979	1994.8	9985	1991.5	9991	1991.5
10000	1991.8	10005	1992	10020	1993.9	10039	1993.4	10058	1994.5
10103	1995.7	10137	1994.5	10151	1994.5	10157	1993.7	10172	1994.8
10236	1994.3	10252	1989.9	10260	1991.7	10270	1991.5	10279	1988.5
10305	1988.4	10314	1989.5	10328	1989.5	10352	2000.1		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9460	.045	9787	.045	9927	.1	9979	.045	10020	.1
10270	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979	10020	530	623.5	630	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.33

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9541	1997.8	9565	1998	9582	1997.1	9646	1995.9	9703	1994.4
9741	1992.7	9769	1990.4	9809	1989.2	9819	1988.3	9835	1989.6
9858	1990.8	9896	1990.9	9924	1989.9	9942	1990.4	9963	1989
9981	1981.3	10000	1981.1	10004	1981.1	10017	1985.3	10026	1985.4
10038	1981.8	10048	1979.5	10057	1979.9	10065	1982	10082	1983.8
10100	1983.9	10111	1985.4	10129	1985.6	10146	1987.8	10164	1988.1
10182	1986.2	10202	1986.4	10222	1988.2	10253	1988.1	10269	1987.4
10289	1985.8	10314	1986.7	10333	1985.1	10339	1984.6	10352	1988.4
10368	1997.3	10386	2000.4						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9541	.055	9963	.045	10017	.045	10065	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9963	10017	490	432.6	375	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.25

INPUT

Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9293	1995.4	9364	1994.8	9421	1994	9518	1993.5	9602	1992.6
9609	1991.5	9613	1991.8	9632	1991.8	9639	1991.3	9660	1989.2
9694	1985	9713	1984.5	9766	1983.9	9801	1985.6	9827	1985.9
9861	1983.8	9874	1983.5	9900	1984	9928	1983.4	9945	1980.3
9954	1977.5	9973	1977.8	10000	1977.3	10025	1981.3	10054	1981.3
10078	1981.9	10105	1982.1	10118	1982.9	10150	1983.4	10165	1982.6
10181	1984.1	10208	1983	10226	1984.4	10257	1984.9	10299	1984.8
10332	1983	10353	1983	10361	1981.5	10374	1982.6	10385	1980.9
10400	1983	10408	1983.2	10424	1988.6				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9293	.055	9928	.045	10025	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9928	10025	675	619.4	550	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.13

INPUT
Description: Cross Section 23.12 Lengthened 138 feet At Left Overbank Using Topographic Maps

Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9370	1982	9508	1980.4	9530	1979.3	9541	1978.8	9554	1976.9
9580	1975.8	9638	1976.1	9690	1978	9720	1979.4	9787	1979.7
9868	1980	9895	1978.3	9917	1976.9	9932	1970.6	9945	1970.6
9951	1972	9965	1972.1	9979	1971	10000	1969.8	10011	1977.2
10035	1976.9	10067	1978	10101	1977.4	10129	1976.4	10151	1976.3
10162	1974.6	10170	1975.4	10183	1974.1	10212	1979.6	10262	1984.6
10301	1987.7	10311	1989.9	10332	1990.6				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9370	.035	9720	.055	9917	.045	10011	.1	10212	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9917	10011	730	880.2	900	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.96

INPUT
Description: Beginning of Montgomery Watson's Analysis Cross Section 22.96 Lengthened 339 feet At left overbank using topographic maps
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8982	1976	9119	1974	9307	1972	9320	1972.6	9386	1972.3
9440	1971.4	9470	1970.3	9513	1970	9589	1970.3	9618	1970.5
9642	1969.4	9660	1968	9669	1968.3	9686	1969.4	9718	1970
9775	1970.9	9827	1970.6	9844	1969.3	9876	1969.6	9900	1968.6
9951	1966	9963	1962.9	9977	1960.8	10000	1959.6	10016	1975.7
10023	1976.9	10050	1976.7	10090	1978	10124	1979.7	10128	1979.9

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8982	.055	9307	.035	9513	.07	9844	.1	9951	.045
10016	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10016	1025	1033	1031.3	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.86

INPUT
Description:

Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8772	1970	8806	1969	8932	1968	9108	1966	9274	1964
9360	1962	9434	1960	9442	1959.5	9452	1960	9480	1961

9530	1962	9585	1962.5	9636	1962	9646	1960	9651	1961
9660	1960	9672	1960.5	9686	1960	9690	1958	9702	1958
9718	1960	9834	1962	9888	1962.5	9912	1962	9968	1960
9976	1958	10000	1953.5	10024	1954	10030	1956	10034	1958
10078	1960	10108	1960.5	10124	1960	10192	1962	10202	1964
10232	1966	10262	1968	10300	1970	10440	1972		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8772	.055	9672	.045	9718	.055	9834	.035	9912	.1
9968	.045	10034	.1	10108	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968	10034	370	370	370	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.79

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9140	1962	9195	1961	9240	1960	9270	1959	9310	1958
9380	1957	9390	1956	9410	1955.5	9420	1956	9440	1957
9510	1958	9550	1957	9590	1956.7	9660	1956	9690	1956
9700	1958	9720	1958.2	9785	1959.8	9830	1958	9880	1959
9900	1958	9930	1956	9940	1954	9965	1952	9985	1950
10000	1950	10010	1952	10040	1954	10060	1956	10100	1958
10125	1960	10165	1961	10295	1962				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9140	.055	9880	.1	9930	.045	10060	.1	10125	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10060	295	316.8	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.73

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9200	1960	9300	1955.5	9310	1955	9357	1954	9390	1953
9410	1953	9435	1954	9450	1954.2	9460	1954	9480	1953
9510	1952	9520	1952.5	9530	1952	9540	1954	9570	1953
9580	1952	9580.5	1953	9590	1953	9600	1954	9620	1954
9670	1954	9690	1956	9720	1957	9750	1956	9780	1954.8
9810	1956	9840	1956.2	9870	1956	9880	1954	9900	1952
9965	1950	9980	1948	9985	1947	10010	1947	10010	1948
10020	1950	10025	1954	10030	1956	10085	1957.5	10125	1958
10450	1960								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9200	.055	9870	.1	9965	.045	10030	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10030	330	316.8	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.67

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9165	1960	9230	1957	9290	1956	9400	1954	9430	1952
9440	1950	9450	1948	9460	1945	9480	1948	9540	1949
9560	1950	9610	1950.7	9665	1950	9680	1949	9690	1949
9700	1950	9730	1951	9785	1951	9800	1950.3	9850	1952
9930	1952	9950	1950	9980	1946	10000	1944.5	10020	1944.5
10040	1946	10050	1950	10070	1950	10087	1952	10120	1954
10195	1954.6	10275	1956						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9165	.045	9480	.055	9930	.045	10050	.045

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

9930	10050	620	528	450	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.56

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9125	1952	9340	1950	9420	1945	9455	1940	9525	1940
9530	1938.5	9550	1940	9565	1942	9610	1944	9660	1945
9750	1946	9770	1946	9790	1946	9905	1946.5	9970	1946
9980	1940	9990	1938.6	10010	1938.6	10020	1940	10055	1942
10060	1944	10095	1946	10180	1946	10190	1944	10200	1944
10240	1946	10255	1948	10300	1947.5	10400	1948	10475	1948.4
10600	1950	10740	1952						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9125	.045	9610	.055	9970	.045	10095	.07	10180	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970	10095	335.4	422.4	390	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10255	10740	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.48

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8700	1946	8780	1944	8990	1942	9025	1938	9040	1937
9070	1936	9080	1935	9095	1937	9115	1938	9133	1940
9178	1945	9230	1945	9268	1943	9310	1940	9338	1938
9350	1937.5	9395	1938	9415	1939	9440	1940	9460	1940
9485	1940	9503	1940	9515	1940.7	9565	1940	9578	1939.6
9583	1940	9645	1941	9670	1942	9690	1942.6	9705	1942
9720	1941	9730	1940.4	9745	1942	9765	1942	9805	1943
9900	1944	9932	1944	9952	1942	9967	1940	9980	1936
10013	1936	10045	1940	10055	1942	10072	1942	10085	1942
10095	1944	10113	1944	10140	1942	10155	1942	10172	1942.5
10185	1942	10212	1940	10225	1938	10237	1938	10245	1940
10255	1942	10330	1944	10420	1944.8	10650	1946		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8700	.055	8990	.045	9440	.055	9932	.045	10095	.07
10212	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9932	10095	210.7	264	220	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8700	9230	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.43

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8745	1944	8955	1942	9000	1936	9020	1934	9060	1935
9070	1933.4	9080	1935	9098	1936.8	9140	1936	9163	1935
9173	1934	9180	1935	9185	1936	9287	1938	9295	1939
9340	1939	9367	1938	9375	1937	9400	1936	9415	1935
9425	1935	9440	1937	9452	1935	9535	1940	9570	1937.5
9630	1939.3	9665	1939	9690	1939	9745	1940	9827	1940
9880	1941.5	9915	1940	9950	1940	9960	1938	9970	1934
9980	1936.2	10000	1936.2	10010	1934	10025	1938	10050	1940
10065	1939.8	10080	1940	10110	1941.5	10135	1940	10165	1940
10175	1936	10190	1936	10210	1934	10223	1936	10225	1938
10240	1940	10310	1942	10825	1942	10965	1944		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8745	.055	9000	.045	9080	.055	9140	.045	9185	.055
9950	.045	10050	.07	10165	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10050	410	369.6	340	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.36

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9050	1940	9110	1930	9150	1928	9172	1927	9185	1926
9200	1929	9210	1925	9220	1926	9236	1930	9250	1932
9305	1933	9333	1934	9365	1935	9402	1936	9460	1937
9525	1937.8	9605	1937	9630	1936	9632	1934	9635	1934
9650	1933.3	9660	1934	9675	1934.7	9735	1936	9750	1937
9765	1936	9787	1934	9800	1932.5	9822	1936	9850	1935
9860	1936	9890	1938	9940	1938	9975	1930	9985	1929
10000	1929	10010	1930	10025	1934	10040	1936	10070	1938
10110	1938	10140	1936	10155	1934	10180	1932.2	10195	1934
10202	1936	10232	1938	10285	1938.8	10345	1938	10420	1937.3
10485	1936	10490	1935	10525	1936	10650	1936	10655	1935
10670	1936	10710	1938	10805	1940	10845	1940.7		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9050	.055	9110	.045	9402	.035	9630	.07	9940	.045
10070	.07	10110	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10070	435.7	369.6	370	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10284	10845	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.29

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8908	1935	8955	1930	8960	1925	8965	1924.5	8985	1924
9005	1923.5	9015	1924	9050	1923	9055	1923.5	9065	1924
9085	1924.5	9100	1926.5	9110	1927	9120	1927.2	9140	1927.8
9175	1928.5	9250	1929.5	9300	1931	9350	1932.5	9400	1933.2
9465	1934	9491	1934	9630	1932	9640	1930	9652	1925
9672	1926	9710	1928	9740	1930	9770	1932	9860	1932
9880	1931	9890	1932	9908	1934	9930	1934	9972	1932
9980	1930	9982	1928	9984	1926	9990	1925.5	10010	1925.5
10020	1926	10030	1930	10040	1932	10060	1934	10072	1934
10100	1932	10110	1931.9	10115	1932	10155	1932.4	10205	1932
10240	1931.6	10273	1932	10320	1932.4	10380	1931.7	10410	1932
10534	1934	10678	1936						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8908	.055	8955	.045	9350	.035	9630	.045	9770	.07
9972	.045	10040	.07	10155	.045	10320	.07		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10040	358.9	369.6	280	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.22

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8685	1930	8800	1928	8895	1925	8907	1924	8920	1923
8935	1920	8970	1918	8990	1923	9058	1924	9105	1924
9125	1925	9138	1927	9210	1929	9410	1929.8	9510	1928
9530	1922	9533	1920	9552	1919.6	9565	1920	9577	1922
9585	1924	9590	1926	9600	1928	9648	1928	9657	1926
9662	1925.6	9670	1926	9680	1928	9712	1930	9795	1929.5
9915	1930	9935	1930.2	9955	1930	9975	1928	9985	1922
10000	1921.5	10020	1921.5	10055	1928	10067	1930	10080	1930.2
10097	1930	10117	1930	10145	1930.2	10170	1930	10205	1928
10240	1930	10305	1932	10455	1932.5	10555	1933		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8685	.045	9210	.035	9510	.045	9600	.055	9955	.045
10067	.07								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9935	10080	312.4	369.6	473.3	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.15

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8312	1926	8385	1925	8520	1923	8540	1918	8550	1916
8560	1918	8565	1920	8579	1923	8585	1923.3	8615	1923
8680	1922	8705	1921	8722	1922	8756	1922.8	8822	1922
8840	1921	8853	1920	8867	1918	8885	1916	8895	1915
8905	1916	8915	1920	9030	1922	9045	1924	9075	1925
9105	1926	9170	1927	9308	1926	9325	1924	9350	1922
9360	1920	9385	1918.4	9410	1920	9430	1922	9445	1924
9456	1926	9515	1926	9535	1923	9550	1926	9575	1927.2
9662	1926	9786	1924	9800	1924	9815	1925.3	9825	1924
9853	1924	9870	1923.3	9917	1926	9960	1924	9972	1922
9985	1920	9990	1919	10010	1919	10015	1920	10022	1922
10050	1924	10075	1926	10135	1927.4	10160	1926	10185	1925.8
10210	1926	10265	1926.4	10295	1926	10325	1926	10376	1928

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8312	.055	8520	.045	9105	.035	9308	.045	9575	.055
9815	.07	9960	.045	10050	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960	10050	330.7	369.6	378.9	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.08

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8620	1930	8660	1925	8700	1930	8720	1919	8765	1920
8785	1920	8835	1915	8850	1919	8875	1919	8895	1916
8910	1919	8950	1921	9090	1921	9120	1920	9150	1918
9170	1918	9180	1916	9200	1915	9210	1913	9235	1915
9250	1918	9260	1918	9270	1917	9280	1916	9290	1915.8
9315	1918	9345	1920	9360	1918	9390	1916.2	9450	1918
9465	1920	9480	1921.2	9515	1920	9525	1918.5	9555	1920
9565	1920.3	9575	1920	9585	1918.6	9605	1920	9635	1922
9655	1922.7	9770	1922	9870	1921	9905	1922	9915	1922.2
9930	1922	9950	1920	9970	1917	9975	1916	9990	1915
10010	1915	10020	1916	10040	1918	10055	1922	10080	1922
10110	1920	10130	1920	10155	1918.3	10175	1920	10220	1922
10270	1920	10305	1922	10420	1924	10545	1926		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8620	.055	8950	.045	9480	.045	9930	.045	10055	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10055	450.7	475.2	300	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.99

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8660	1925	8675	1910	8740	1915	8765	1916	8835	1918
8895	1914	9025	1918	9095	1917	9105	1912	9130	1910
9147	1911	9175	1912	9218	1913	9272	1916	9320	1916
9390	1914	9445	1914	9485	1916	9500	1916	9518	1914
9550	1916	9603	1916	9700	1917.8	9740	1916.6	9800	1918
9850	1919	9960	1918	9975	1912	9985	1910	10000	1909.9
10008	1910	10022	1912	10090	1916	10160	1918	10185	1918
10195	1916	10210	1916	10235	1917.2	10255	1916	10260	1914
10270	1913.4	10275	1914	10285	1916	10320	1918	10362	1920

10435	1922

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8660	.055	8675	.045	8765	.055	9105	.045	9800	.035
9960	.045	10090	.055	10320	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960	10090	400	422.4	470	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.91

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8740	1925	8780	1920	8805	1915	8826	1910	8835	1907
8850	1906	8863	1906	8883	1906	8895	1905	8915	1902
8935	1905	8945	1909	8990	1910	9030	1912	9070	1912.5
9125	1912	9190	1910	9250	1911.1	9320	1910	9370	1908
9380	1910	9410	1908	9425	1910	9460	1912	9490	1910
9500	1912	9525	1914	9730	1914.6	9830	1914	9878	1912
9940	1910	9975	1908	9990	1906	10000	1906	10020	1910
10040	1912	10060	1912.5	10080	1912	10120	1912.5	10150	1912
10180	1910.6	10210	1912	10250	1914	10370	1916		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8740	.055	8883	.045	9500	.035	9830	.07	9940	.045
10040	.07	10250	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10040	450.3	475.2	450.3	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.82

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8655	1920	8700	1906	8720	1906	8740	1904	8750	1903
8760	1902	8790	1901	8805	1900	8830	1901	8850	1905
8860	1907	8935	1908	8970	1908	9025	1908.7	9080	1908.2
9110	1908.9	9135	1908	9185	1906	9195	1905	9210	1906
9240	1905.2	9250	1906	9260	1906.5	9285	1906	9300	1904
9310	1902.3	9340	1904	9355	1906	9375	1908	9475	1909.4
9605	1909.3	9805	1909.6	9830	1908	9855	1906	9865	1904.3
9885	1905.8	9915	1906	9950	1906	9965	1904	9970	1902
9980	1900.5	10000	1900.5	10015	1902	10040	1904.5	10070	1906
10150	1906.7	10180	1908	10250	1910	10350	1911		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8655	.055	8720	.045	9475	.035	9805	.07	9855	.045
9885	.07	9950	.045	10070	.055				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10070	240.7	264	297.2	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.77

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8630	1915	8652	1910	8680	1909	8697	1905	8705	1900
8720	1895	8745	1899	8815	1900	8837	1904	8850	1905
8876	1905	8952	1905	9005	1906	9075	1906	9115	1906
9180	1904	9205	1902	9240	1902	9255	1900	9270	1902
9290	1904	9320	1904	9325	1902	9340	1902	9355	1906
9395	1906	9445	1906	9535	1906	9565	1905.3	9620	1906
9740	1906.5	9785	1906	9795	1904	9830	1902	9850	1900
9885	1900	9910	1900	9955	1902	9965	1900	9970	1898
9975	1898	10000	1897.3	10005	1898	10015	1900	10030	1902
10045	1904	10115	1904	10130	1903.1	10150	1904	10205	1906

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

8630	.055	8697	.045	9355	.035	9785	.07	9830	.045
9955	.045	10045	.055						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9955	10045	442.2	422.4	422.4	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.69

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8860	1910	8878	1900	8900	1890	8932	1890	8960	1896
8970	1898	9020	1900	9060	1900.9	9070	1900	9080	1899.3
9110	1900	9145	1900	9180	1900.8	9230	1900.8	9290	1900
9310	1898	9365	1896	9380	1894	9390	1896	9415	1898
9480	1899.9	9505	1898	9510	1897.3	9515	1898	9575	1900
9660	1901.6	9685	1901.8	9755	1900.8	9780	1900	9815	1898
9907	1896.1	9940	1898	9982	1896	10000	1895.1	10015	1896
10025	1898	10085	1900	10157	1898	10160	1897.1	10175	1898
10265	1900	10280	1902	10300	1902.2	10615	1904		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8860	.055	8878	.045	9780	.07	9940	.045	10025	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10025	408	422.4	320	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.63

INPUT
Description:
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9060	1910	9130	1908	9140	1906	9180	1900	9212	1900
9220	1888	9230	1888	9250	1890	9260	1892	9290	1894
9320	1896	9375	1894.9	9435	1897.6	9480	1898	9560	1898
9585	1896	9605	1894	9625	1892	9633	1898.6	9645	1892
9660	1894	9695	1896	9725	1896	9785	1894	9800	1892.6
9805	1894	9830	1896	9930	1898	9980	1896	9990	1890
10000	1888.5	10007	1890	10025	1892	10085	1894	10140	1895.3
10185	1894	10190	1892	10205	1892	10220	1894	10240	1894.8
10255	1894	10270	1893.8	10275	1894	10300	1896	10400	1897.7
10530	1898	10565	1898.3	10585	1898	10600	1898	10705	1900
10840	1902	10950	1904	11015	1906	11085	1908	11175	1910

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9060	.055	9212	.045	9633	.055	9980	.045	10085	.07
10185	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980	10085	280	264	370	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.58

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9220	1906	9250	1904	9320	1900	9365	1886.8	9395	1886.8
9400	1888	9415	1890	9430	1892	9465	1892	9510	1894
9565	1894	9590	1892	9615	1888	9640	1892	9670	1894
9725	1894.7	9750	1894	9780	1893.3	9815	1894	9890	1892
9910	1890.1	9940	1892	9965	1890	10000	1888	10025	1890
10050	1892	10090	1893.8	10155	1890	10170	1888	10185	1890
10235	1892	10255	1894	10310	1894.3	10355	1894	10425	1892.2
10482	1894	10525	1894.8	10630	1895.5	10800	1897		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9220	.035	9320	.045	9430	.07	9590	.045	9640	.055
9940	.045	10090	.055	10155	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10090	525	475.2	250	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.49

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9565	1892.5	9585	1892	9640	1890	9690	1888	9695	1884
9710	1882	9715	1884	9730	1884.5	9755	1884	9770	1883.3
9780	1886	9840	1887	9900	1887.7	9925	1886	9940	1885.3
9950	1886	9990	1886	9995	1884	10000	1883	10010	1884
10035	1885	10040	1884	10060	1882	10070	1884	10080	1888
10130	1889.4	10155	1888	10175	1884	10195	1882.5	10210	1884
10220	1884	10240	1886	10270	1888	10295	1890	10345	1892
10390	1891.5	10515	1894.1						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9565	.045	9690	.07	9780	.1	9900	.045	10080	.1
10155	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9900	10080	475	475	475	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.41

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9110	1890	9250	1888	9330	1886	9510	1885	9575	1884
9590	1880	9600	1879	9620	1880	9630	1882	9670	1882.5
9720	1882	9765	1880	9795	1877.5	9805	1880	9830	1881
9845	1880	9855	1879	9865	1880	9910	1882	9930	1880
9980	1878	10000	1874.2	10010	1880	10020	1882	10030	1884
10060	1886	10165	1888	10290	1889				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9110	.055	9575	.038	9630	.1	9765	.038	9805	.1
9980	.038	10010	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980	10010	422	422	422	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.35

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8755	1888	9110	1886	9225	1884	9320	1882	9330	1880
9350	1879.2	9400	1880	9490	1881.5	9620	1881	9750	1880
9755	1878	9760	1876	9770	1874.2	9800	1876	9810	1878
9895	1878	9915	1876	9970	1874	9980	1872	10000	1871.5
10015	1872	10025	1878	10030	1880	10040	1882	10105	1884
10310	1886	10430	1886.8	10500	1887				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8755	.035	9320	.055	9750	.038	9810	.1	9970	.038
10025	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970	10025	205	211.2	220	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.31

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8660	1887.3	8740	1886	8930	1884.3	9040	1885	9125	1884
9200	1882	9275	1880	9280	1878	9290	1876.4	9310	1878
9410	1880	9500	1880.7	9570	1880	9640	1878.8	9700	1879.8
9825	1878	9855	1872	9870	1871.2	9880	1872	9890	1874
9900	1876	9920	1876.5	9940	1876	9950	1874	9965	1872
10000	1870.7	10015	1872	10050	1878	10065	1880	10105	1882

```
   10190  1883.5   10230  1883.9   10585    1884

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    8660    .035    9410    .055    9825     .07    9940    .038   10050    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9940   10050             230   316.8     310             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 21.25

INPUT
Description:
Station Elevation Data     num=      38
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    8610    1887    8650    1886    8723  1885.2    8857    1884    8890  1883.2
    9025    1884    9125    1882    9220    1880    9225    1878    9260  1875.3
    9275    1876    9310    1878    9365    1879    9410  1878.4    9500  1879.8
    9515  1879.8    9655    1878    9685    1877    9730  1877.6    9820  1876.5
    9860  1876.6    9880    1876    9910    1875    9935    1874    9965    1870
   10000  1868.7   10045    1870   10055    1878   10090    1880   10120    1880
   10365    1880   10400  1878.3   10430  1878.4   10490  1879.5   10540    1880
   10600  1880.7   10715    1882   10850    1884

Manning's n Values         num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    8610    .035    9220    .055    9935    .038   10055    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9935   10055             420   369.6     370             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 21.18

INPUT
Description:
Station Elevation Data     num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    8610    1880    8650    1878    8800  1875.2    8940    1875    9050    1876
    9155    1874    9225    1872    9240    1870    9250  1869.7    9260    1870
    9300    1872    9330    1874    9420  1874.4    9490    1874    9650  1872.5
    9845  1872.9    9950    1872    9970    1870    9980    1868    9988    1866
   10000    1865   10010    1866   10080    1868   10090    1870   10100    1872
   10120    1874   10200    1876   10270    1878   10365    1878   10480  1877.3
   10535    1878   10700    1880

Manning's n Values         num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    8610    .035    9225    .055    9950    .038   10100    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9950   10100             360   369.6   355.5             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    8610    9050

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 21.11

INPUT
Description:
Station Elevation Data     num=      31
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    8410    1880    8480    1876    8535    1874    8595  1872.3    8735    1872
    8910    1874    9025    1874    9160    1872    9280    1870    9325    1868
    9365  1866.5    9410    1868    9450  1869.7    9555    1868    9675  1869.3
    9715  1869.1    9770    1870    9850    1870    9910    1868    9930    1866
    9945    1864    9960    1862    9990  1860.5   10020    1862   10035    1864
   10055    1866   10080    1868   10125    1870   10185    1872   10420    1874
   10580    1876

Manning's n Values         num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    8410    .045    9280    .055    9910    .038   10080    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9910   10080             260   316.8     370             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    8410    8950
```

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.05

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8540	1870	8560	1869.5	8605	1870	8670	1870	8730	1869.5
8750	1870	8825	1872	8875	1872.3	8975	1872	9080	1870
9220	1868	9345	1866	9400	1864.8	9430	1866	9475	1866.4
9520	1866	9545	1865.5	9560	1866	9610	1867	9670	1866.3
9775	1867.4	9830	1866	9892	1866	9920	1864	9930	1862
9960	1860	9990	1858	10000	1857.6	10012	1858	10022	1860
10045	1866	10075	1868	10095	1869.2	10145	1868.3	10375	1870
10475	1872								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8540	.045	9345	.055	9892	.038	10045	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9892	10045	340	369.6	380	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8540	8875	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.98

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8490	1870	8540	1868	8580	1866.2	8660	1866.7	8800	1866.2
8955	1868	9145	1866	9330	1864	9380	1862.8	9390	1863.2
9425	1862	9440	1861	9465	1862	9500	1861.3	9520	1862
9580	1863.6	9615	1863.3	9645	1864	9695	1864.2	9730	1864
9870	1862	9880	1861	9920	1860	9945	1858	9965	1856
9995	1854	10000	1853.2	10005	1854	10020	1860	10060	1864.7
10125	1866	10165	1866.2	10220	1866	10280	1864	10315	1864
10390	1866	10470	1870	10480	1872	10505	1874	10565	1876
10605	1878								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8490	.045	9330	.055	9870	.038	10060	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9870	10060	400	422.4	430.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8490	8955	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.9

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8740	1864	8790	1862.7	8845	1863.2	8915	1862	8950	1861.5
8965	1862	9090	1863.2	9200	1862	9360	1862	9425	1862
9560	1858	9625	1858	9810	1860.7	9830	1860	9850	1858
9865	1857.5	9875	1858	9885	1858.2	9900	1858	9950	1856
9965	1854	10000	1852.6	10030	1854	10042	1858	10050	1860
10090	1860.9	10210	1860.5	10275	1860	10330	1858.5	10385	1860
10475	1861	10520	1864	10545	1866				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8740	.045	9425	.055	9810	.07	9885	.038	10050	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9885	10050	570	580.8	480	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8740	9090	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.79

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8860	1859	8895	1858	8925	1857.4	8980	1857.2	9030	1857
9070	1856	9240	1855	9300	1854	9350	1854	9385	1853
9415	1852	9440	1851	9450	1852	9585	1853	9907	1855
9937	1854	9950	1852	9980	1850	9990	1848	10000	1847.5
10027	1848	10070	1850	10083	1852	10118	1854	10160	1855.3
10205	1854.3	10300	1855	10350	1854	10385	1853	10465	1854
10530	1856	10645	1860						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
8860	.045	9907	.038	10160	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9907	10160	460	422.4	575	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.71

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9055	1855	9060	1854	9095	1853	9122	1852.9	9212	1852
9265	1851	9290	1850.8	9350	1851	9430	1851	9455	1850
9460	1849	9480	1848	9490	1848	9550	1849	9625	1850
9720	1850	9750	1850	9810	1851	9910	1852	9960	1851
9990	1844	9995	1843	10020	1844	10040	1846	10075	1847
10085	1850	10140	1850	10160	1851	10170	1852	10230	1852
10270	1851	10370	1850	10390	1849	10470	1850	10534	1854
10610	1856								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9055	.045	9625	.035	9750	.055	9960	.038	10085	.055
10470	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960	10085	475	369.6	320	.3	.5

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.64

INPUT
Description: Beginning of Castro Fleet's Analysis (Del Webb Area) Cross Section Identification Numbers Were Increased by a factor ranging from 0.25 to 0.14 miles for consistency with Montgomery Watson Modeling. For example, Castro Fleet cross section 20.39 becomes Montgomery Watson cross section 20.64
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9140	1860	9220	1848	9300	1846.5	9430	1847	9500	1845
9660	1847	9940	1847	9950	1844	9970	1842	10000	1842
10020	1842	10030	1844	10110	1848	10210	1848	10310	1844
10340	1844	10360	1843	10370	1844	10420	1848	10600	1852
10830	1856	11100	1860						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9140	.055	9220	.045	9660	.035	9940	.038	10110	.055
10420	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10110	112.5	135	137.5	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.62

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9218	1854	9257	1848.4	9269	1846.4	9297	1845.8	9324	1844.7
9340	1845.8	9381	1846	9417	1846.6	9438	1845.7	9464	1845.2
9486	1844.5	9511	1843.9	9518	1842.5	9526	1844.1	9552	1844.7
9592	1845.3	9629	1845.8	9687	1846	9735	1846.1	9789	1846.1
9840	1846.5	9863	1847.1	9868	1846.5	9913	1846.9	9953	1846.8

9969	1845.6	9996	1839.7	10000	1839.8	10019	1840	10042	1839.3
10053	1843.3	10074	1844.3	10092	1844	10110	1845.1	10134	1846.7
10182	1847.1	10229	1846.7	10275	1846.6	10310	1845.6	10333	1844.5
10344	1842.9	10354	1844.2	10366	1844	10373	1840.3	10384	1843.4
10407	1844.1	10429	1844.2	10479	1848.4	10531	1849.6	10591	1850.8
10631	1851.3	10692	1851.9	10742	1853.1	10786	1853.8	10840	1854.5
10898	1855.5								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9218	.055	9269	.045	9526	.035	9969	.038	10053	.055
10429	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969	10053	915	788.9	580	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.48

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9183	1846.5	9221	1842.4	9262	1839.1	9283	1838	9345	1837.3
9355	1836.5	9361	1837.5	9412	1837.6	9460	1837.7	9516	1838.6
9572	1839	9640	1839.4	9704	1839.7	9740	1838.6	9768	1834.9
9779	1836.7	9799	1838.1	9823	1838.7	9831	1837.9	9847	1839.3
9864	1838.7	9896	1838.4	9916	1839.8	9931	1840.7	9972	1840.6
9986	1833.9	10000	1834	10014	1833.9	10023	1832.8	10050	1833
10065	1838.6	10087	1838.2	10112	1839	10139	1839.5	10187	1838.8
10195	1838.7	10224	1839.2	10238	1838.6	10261	1835.2	10282	1832.4
10309	1833.4	10327	1838.4	10350	1839	10390	1838.5	10422	1838.9
10485	1840	10529	1841.4	10561	1842.6	10597	1843.7	10655	1844.6
10697	1845.6	10752	1847.1						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9183	.055	9283	.045	9704	.07	9972	.038	10065	.07
10238	.038	10327	.055	10529	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10065	600	526.7	520	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.38

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9126	1840.6	9160	1836.4	9184	1834	9192	1832.5	9230	1830.6
9246	1829.9	9254	1830.6	9288	1830.9	9338	1831.8	9368	1832.3
9434	1832.4	9490	1831.3	9519	1826.9	9537	1827.2	9545	1829.2
9576	1830	9589	1831.6	9612	1831.4	9643	1830.9	9666	1832.2
9709	1833.5	9741	1834.1	9771	1834.7	9813	1835.2	9881	1835.5
9895	1834.7	9900	1835	9927	1834.2	9951	1837.5	9968	1832.6
9990	1830.2	10000	1829.6	10026	1829.6	10043	1835.9	10087	1835.6
10133	1835.6	10164	1834.5	10195	1833.5	10216	1832.2	10229	1830.5
10256	1828.9	10293	1833.1	10312	1833.2	10335	1832.1	10376	1828.9
10386	1826.6	10405	1825.9	10419	1835.3	10447	1836.4	10512	1838.3
10570	1840.2								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9126	.055	9184	.045	9490	.055	9951	.038	10043	.07
10335	.038	10419	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10043	475	622.3	650	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.26

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9079	1841.1	9115	1837.6	9151	1832.2	9182	1823.3	9191	1825.3
9208	1825.4	9218	1824.1	9224	1825.7	9253	1825.2	9307	1826
9342	1826.8	9363	1828.1	9404	1828.4	9465	1829.1	9507	1829.6
9540	1829.5	9622	1830.4	9632	1824.8	9639	1825	9650	1826.2

9664	1826.5	9675	1828.9	9699	1829.6	9705	1828.5	9715	1830.4
9758	1831.4	9814	1830.1	9837	1829.7	9846	1828.3	9865	1829.5
9879	1830.1	9920	1828.2	9945	1828.4	9956	1827.2	9972	1827.2
9988	1826.1	10000	1825.2	10010	1827.3	10026	1827.9	10054	1828.2
10064	1825.5	10080	1825.1	10088	1825.8	10096	1828.7	10154	1828.6
10194	1828.6	10234	1828.5	10252	1828.5	10286	1827.7	10319	1825.4
10332	1822.4	10351	1821.9	10362	1822	10376	1823.4	10399	1831.1
10430	1831.8	10506	1832	10517	1833.5	10529	1830.7	10537	1831.7
10569	1832.9	10610	1833.5	10643	1834.2	10700	1834.9	10737	1835.9

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9079	.07	9307	.045	9622	.038	9675	.07	9945	.038
10096	.055	10319	.038	10399	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945	10096	460	531.6	585	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.16

INPUT
Description: THE PRESENCE OF INNER-CHANNEL ISLANDS AT THIS CROSS-SECTION CAUSE FLOODWAY TOPWID TO EXCEED FLOODPLAIN TOPWID HOWEVER, FLOODWAY IS WITHIN BOUNDARIES OF FLOODPLAIN

Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9031	1830.2	9108	1826.4	9139	1826	9167	1823.8	9194	1822
9200	1820.4	9212	1822.2	9232	1824.2	9258	1825	9304	1825.2
9319	1825	9350	1825.2	9361	1824.4	9371	1825.6	9392	1825.3
9406	1821.1	9412	1821.4	9419	1822.9	9425	1823	9445	1825.8
9480	1825.2	9525	1824.7	9578	1823.3	9589	1820.9	9606	1821.7
9622	1821.1	9642	1819.3	9654	1822.4	9666	1823.6	9722	1823.3
9744	1823.1	9757	1822	9772	1822.7	9783	1821.3	9792	1821.3
9801	1822.8	9815	1822.3	9843	1823.3	9868	1823.6	9878	1821.8
9915	1821.9	9922	1821.2	9937	1821.6	9953	1821.5	9966	1818.5
9969	1818.4	10000	1817.7	10015	1823.9	10071	1823.6	10096	1822.5
10118	1818.7	10139	1819	10178	1818.8	10195	1818.4	10208	1822
10255	1822	10284	1823.5	10336	1823.1	10362	1818.5	10374	1816.2
10399	1815.5	10419	1821.2	10433	1823.5	10460	1821.4	10473	1821.3
10501	1827.1	10517	1828.7						

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9031	.035	9167	.07	9232	.055	9392	.038	9445	.055
9578	.038	9666	.055	9953	.038	10015	.055	10096	.038
10208	.055	10336	.038	10433	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9953	10015	450	555.7	635	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.05

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9039	1828	9079	1825.1	9125	1823.7	9157	1823.8	9204	1823.6
9253	1822.6	9335	1821.4	9358	1820.6	9370	1821.5	9394	1820.6
9416	1819.6	9455	1820.6	9477	1815.6	9503	1815.4	9517	1813.8
9541	1818.4	9582	1817.8	9602	1817.2	9625	1819.1	9637	1814.9
9646	1815.6	9655	1815.7	9688	1815.9	9702	1815.5	9716	1820.9
9721	1819.4	9750	1818.7	9760	1814.4	9772	1813.5	9786	1813.8
9802	1816.1	9837	1814.9	9849	1815.8	9857	1815.7	9864	1814.1
9878	1816	9903	1816.9	9916	1816.5	9935	1812.5	9942	1812.6
9954	1814.4	9967	1813	9974	1813.9	9980	1813.9	9996	1810.7
10000	1811.1	10011	1814.9	10032	1816	10064	1816.4	10113	1815.2
10133	1813.6	10143	1813.6	10156	1816.9	10212	1816.8	10230	1815.5
10241	1816.3	10307	1817.1	10334	1817.5	10363	1815.2	10382	1815.1
10416	1811.9	10447	1811.2	10476	1821.5	10491	1823.1	10529	1824.4
10579	1825.4	10625	1825.5	10672	1826.7				

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9039	.035	9455	.038	9541	.055	9625	.038	9716	.07
9954	.038	10011	.055	10113	.038	10156	.055	10334	.038
10476	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9954	10011	815	700	770	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.92

INPUT
Description: CROSS SECTION 19.92 LENGTHENED 865 FEET AT LEFT OVERBANK USING TOPOGRAPHIC MAP

Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8928	1820	8966	1818	8991	1816	9091	1816	9241	1814
9365	1813.1	9529	1814	9617	1814	9667	1814	9705	1812
9718	1810	9793	1810.2	9827	1811.6	9863	1813.4	9879	1813.8
9909	1813.7	9948	1812.6	9959	1814.2	9974	1809.7	9985	1810.5
10000	1803.6	10014	1802	10024	1802	10044	1805.4	10057	1808.1
10066	1806	10082	1809.4	10097	1810.4	10133	1811	10180	1811.4
10199	1809	10220	1808.9	10230	1809	10241	1809.9	10268	1809.5
10283	1809.7	10305	1812	10320	1811.8	10343	1811.7	10358	1811
10373	1808.8	10399	1816.5	10413	1817.6	10433	1818.3	10462	1819.8
10505	1820.5	10531	1820.8						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8928	.035	9718	.055	9985	.05	10057	.07	10180	.05
10305	.055	10399	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985	10057	250	492	660	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.83

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8883	1815.8	8943	1814.6	8997	1814	9054	1813.4	9125	1812.8
9179	1811.8	9223	1811.7	9270	1811.4	9332	1811.3	9390	1811.2
9457	1811.4	9547	1811.3	9602	1811.4	9651	1811.6	9681	1812
9711	1811.8	9736	1810.3	9751	1807.2	9761	1806.9	9770	1807.3
9804	1807.1	9826	1806	9836	1807	9862	1806.3	9881	1807.6
9908	1807.7	9929	1805.3	9943	1805.5	9960	1805.8	9974	1802.8
10000	1801.2	10018	1800.7	10035	1799.3	10045	1801.9	10074	1806.6
10121	1806.2	10150	1808.3	10184	1807.5	10206	1803.9	10222	1804.5
10263	1805.7	10301	1806.9	10333	1807.9	10372	1808.1	10398	1808.7
10429	1810.5	10487	1812						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8883	.035	9751	.055	9960	.05	10074	.07	10184	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960	10074	500	567.8	600	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.72

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8917	1812.3	8958	1810.8	9008	1809.5	9064	1809.2	9129	1808.4
9196	1808.3	9243	1807.8	9298	1807.2	9350	1806.8	9423	1806.7
9474	1806.8	9534	1807.4	9576	1807.5	9623	1807.2	9677	1808
9715	1808.6	9793	1808.4	9812	1801.9	9822	1800.9	9847	1801.3
9871	1802	9884	1797.2	9893	1796.5	9905	1799.8	9926	1801.6
9948	1800.7	9961	1798.3	9973	1798.4	9989	1797.8	10000	1796.5
10018	1795.1	10030	1796.9	10043	1801.8	10064	1803.5	10089	1802.9
10108	1802.3	10129	1802.7	10160	1801.7	10187	1801.7	10225	1800.4
10241	1797.4	10261	1797.5	10275	1799.5	10300	1802.1	10326	1803.1
10359	1802.7	10408	1801.2	10465	1799.9	10483	1798.3	10498	1798.4
10513	1799.1	10533	1803.1	10563	1805	10592	1806.4	10641	1808.2
10680	1809.5								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8917	.035	9793	.055	9871	.05	9905	.055	9948	.05
10043	.055	10225	.05	10300	.045				

```
Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          9948   10043              500   509.9     500              .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 19.62

INPUT
Description:
Station Elevation Data    num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9000    1808    9035  1806.3    9083    1805    9143  1804.4    9224  1804.3
    9276  1803.1    9354  1802.8    9437  1802.3    9491  1802.2    9563  1802.1
    9653  1801.6    9716  1801.3    9737  1800.7    9753  1800.7    9783  1801.4
    9834  1801.1    9879  1801.3    9924  1802.7    9966  1803.9    9981  1802.5
   10000  1791.1   10025  1790.3   10036  1792.4   10046    1796   10077  1797.5
   10120  1798.2   10180  1797.8   10221  1796.4   10241  1795.6   10293    1795
   10309  1793.1   10317  1793.9   10323  1792.4   10343  1793.3   10361  1795.7
   10375  1796.4   10398  1794.9   10417  1797.1   10448  1797.6   10494  1797.1
   10535  1796.2   10581  1795.1   10609  1795.3   10632  1794.6   10650  1795.2
   10677  1798.6   10708  1799.9   10742  1801.3   10788  1802.6   10840  1803.7
   10901  1804.6   10961  1805.9   11026  1806.4   11080  1807.4   11145  1808.6
   11200    1810

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9000    .035    9966     .05   10046    .055   10293     .05   10361    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          9966   10046              515     528     530              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9000    9966

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 19.52

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9196    1800    9242  1799.2    9307  1798.6    9367  1797.5    9417    1797
    9474  1796.1    9482  1794.8    9489  1795.5    9517  1795.5    9524  1796.3
    9528  1795.4    9590  1795.8    9657  1796.2    9718  1796.5    9795  1796.5
    9871  1795.5    9916  1794.5    9936  1788.8    9952  1791.3    9972  1790.6
    9983  1788.7   10000    1787   10005  1786.4   10022  1786.2   10038    1793
   10055  1793.4   10095  1793.6   10134  1792.6   10156  1788.1   10164  1788.2
   10177  1789.7   10189  1788.7   10215  1791.3   10222  1790.4   10238  1791.5
   10251  1790.6   10265  1791.5   10294  1791.3   10300  1790.4   10325  1791.2
   10345  1791.4   10354  1790.3   10387  1791.8   10411  1791.6   10436  1791.2
   10472  1790.4   10488  1787.7   10502    1791   10518  1790.8   10539  1787.9
   10559  1786.8   10582  1795.2   10617  1796.4   10679    1797   10746  1797.5
   10814  1797.8   10893  1797.8   10903  1796.5   10910  1797.5   11010  1797.7
   11097  1797.3   11187  1797.8   11237  1798.4

Manning's n Values        num=       8
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9196    .035    9916     .05    9972     .05   10038     .07   10134    .055
   10387     .07   10518     .05   10582    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          9972   10038              700   606.3     485              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9196    9795

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 19.41

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9475  1802.7    9548  1794.3    9613  1789.7    9658  1787.9    9675  1786.2
    9681  1787.1    9715  1788.2    9764  1788.1    9796  1787.7    9830  1788.3
    9859  1790.3    9880    1791    9908  1790.6    9928  1789.4    9948  1786.8
    9965  1787.6    9979  1783.9   10000    1784   10039  1784.6   10052    1785
   10072  1788.6   10110  1788.5   10139  1788.6   10171  1787.5   10183  1786.6
   10193  1783.2   10209  1783.3   10225  1786.1   10246  1786.6   10263  1785.9
   10284  1786.5   10328  1787.3   10353  1785.2   10365  1783.2   10374  1782.6
   10383  1783.1   10403  1785.8   10415  1785.7   10425    1784   10446  1787.3
   10480  1786.7   10495  1787.3   10521    1787   10545  1783.5   10561  1783.8
```

10587	1783	10616	1790.3	10654	1791.8	10698	1792.3	10763	1792.8
10803	1793.2	10811	1792.6	10823	1793.2	10878	1793.3	10925	1793.4
10979	1793.3	11038	1793.4	11100	1793.5	11160	1793	11213	1793.2
11254	1793.8	11307	1794	11380	1794.5	11443	1795.1	11509	1795.9
11572	1796.6	11647	1798.4	11735	1800.1				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9475	.045	9965	.05	10072	.055	10183	.05	10225	.07
10521	.05	10616	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10072	600	769.4	790	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.26

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9258	1798	9307	1793.5	9361	1787.2	9382	1785.3	9425	1783
9434	1781.7	9446	1783.4	9458	1783.2	9466	1780.8	9478	1781
9490	1783.2	9541	1784.1	9573	1782.4	9594	1782.3	9602	1783.1
9634	1782.2	9645	1782.9	9675	1782.2	9708	1781.9	9715	1779.9
9723	1780.1	9740	1779.1	9759	1780.5	9812	1780	9819	1780.5
9849	1780.3	9900	1779.9	9923	1777.9	9934	1779.6	9955	1779.5
9981	1778.2	10000	1775.4	10018	1773	10024	1780.7	10035	1782
10061	1782.7	10070	1781.9	10085	1783.4	10129	1784.6	10176	1785.5
10243	1785.6	10331	1785.1	10394	1785.2	10452	1784.9	10511	1784.7
10595	1784.7	10657	1784.5	10707	1784.8	10777	1785.4	10836	1786
10871	1785.9	10904	1785.3	10948	1785.7	10995	1786.9	11037	1788.1
11072	1789	11162	1789.7	11215	1790.1				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9258	.055	9425	.07	9541	.045	9759	.07	9981	.05
10024	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981	10024	500	416.4	300	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10110	11215	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.18

INPUT
Description: From Cross section 19.18 to Cross section 20.62, the floodplain and the floodway boundaries are made coincident on the right overbank only. As per discussion with the FEMA technical evaluator, this is done to include, the low flow channel on the right overbank of the Skunk Creek Wash, within the floodway boundary (March 17, 1998)
Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9114	1791.3	9152	1788	9213	1782.9	9246	1780	9281	1778.8
9312	1778.2	9367	1777.6	9382	1776.3	9399	1775.6	9415	1773.5
9430	1778.7	9442	1776.1	9452	1776.5	9465	1778.7	9479	1778.8
9493	1774.7	9514	1775.1	9534	1777	9568	1777.6	9625	1778
9638	1776.9	9649	1777	9672	1779	9722	1779.1	9764	1779
9774	1778.2	9813	1778.8	9834	1778.5	9854	1779.4	9874	1779.4
9906	1777.1	9918	1777	9926	1774.7	9943	1775.9	9980	1773.9
10000	1771.2	10006	1770	10025	1770.1	10040	1775.5	10055	1775.8
10080	1781.1	10135	1781.4	10202	1782.1	10254	1782.2	10305	1781.8
10344	1781.8	10403	1781.6	10410	1781.1	10438	1781.3	10534	1781.4
10600	1781.9	10659	1783	10688	1783.1	10727	1783.2	10758	1783.6
10796	1784.1	10857	1784.4	10925	1785.3	10969	1786	11042	1787.5
11098	1788.4	11158	1788.4	11224	1788.6				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9114	.045	9367	.05	9430	.055	9479	.05	9534	.055
9943	.05	10080	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9943	10080	460	598.7	720	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.07

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9213	1782.6	9244	1779.1	9266	1776.5	9296	1775.1	9326	1775.1
9352	1775	9406	1775	9426	1774.8	9467	1773.3	9515	1772
9537	1770.3	9556	1769.6	9569	1768.1	9586	1770.4	9614	1771.6
9641	1772	9656	1773.6	9691	1773.2	9711	1772	9724	1769.5
9748	1771.8	9783	1772.9	9806	1772.1	9842	1772.2	9876	1772.3
9909	1772.6	9928	1771.9	9952	1770.5	9969	1771.6	9985	1768
10000	1764.8	10007	1764.8	10022	1766.5	10047	1767	10068	1773.1
10092	1773.7	10141	1773.3	10157	1772.6	10164	1773.2	10198	1773.6
10246	1773.9	10274	1775.1	10315	1775.3	10361	1775	10402	1774.5
10441	1774	10485	1773.4	10509	1773.6	10558	1773.5	10573	1773.8
10632	1774.1	10679	1774.4	10711	1775.2	10731	1775.1	10750	1775.4
10774	1775.7	10827	1775.7	10882	1776	10923	1777.1	10971	1777.8
11014	1778.3	11069	1779.1	11099	1779.6	11110	1779.4	11128	1780
11163	1780.4	11196	1781.1						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9213	.07	9296	.055	9515	.05	9614	.055	9969	.05
10068	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969	10068	680	601	500	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.96

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9326	1779.1	9377	1778.7	9418	1776	9427	1774.9	9442	1773.9
9458	1769	9482	1767.7	9489	1766	9496	1767.1	9514	1767.3
9536	1767	9545	1768	9570	1768.8	9607	1768.6	9640	1768.1
9649	1767.9	9687	1767.8	9714	1767.3	9726	1767.7	9764	1767.9
9796	1767.6	9809	1768.2	9837	1768.3	9862	1768.6	9894	1768.2
9924	1768	9931	1762.2	9938	1762.6	9959	1762.6	10000	1762.9
10007	1763.3	10021	1766.3	10035	1767.2	10043	1767.2	10055	1766
10069	1766.9	10100	1765.7	10107	1766.7	10125	1766.3	10137	1764.5
10159	1769.4	10193	1771	10235	1770.9	10281	1770.5	10317	1769
10347	1768.7	10358	1767.5	10370	1768.8	10401	1768.8	10408	1767.4
10414	1768.5	10436	1769	10455	1769.7	10515	1770.2	10574	1770.5
10644	1770.6	10686	1770.7	10731	1770.9	10781	1771	10818	1771.3
10877	1771.2	10930	1772.4	10975	1773.1	11027	1773.1	11087	1773.4
11135	1773.8	11195	1773.9	11217	1774.3	11277	1774.5	11298	1774.6

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9326	.055	9924	.05	10021	.07	10159	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9924	10021	525	631.7	600	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.84

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9450	1770.8	9475	1764.5	9503	1756.9	9512	1757.6	9522	1758.4
9531	1758.5	9538	1757.4	9557	1759.8	9576	1759.9	9586	1758.7
9597	1759.6	9604	1759.6	9612	1758.6	9620	1760	9649	1760.6
9679	1760.6	9702	1761	9721	1759.8	9732	1760.5	9768	1760.6
9784	1759.8	9797	1759.8	9818	1761.3	9848	1763.1	9888	1763.4
9915	1763.2	9942	1759.9	9987	1758	10000	1755.9	10008	1755.7
10036	1762.6	10051	1763.3	10101	1762.5	10107	1760.8	10115	1762.3
10145	1764.2	10182	1765.5	10209	1766	10231	1765	10258	1765
10308	1765.5	10357	1764.9	10413	1765.4	10417	1765.4	10685	1766
10808.04	1768								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9450	.055	9915	.05	10036	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9915	10036	500	497.1	325	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10165	10808.04	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.74

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9245	1770	9249	1770.1	9269	1763.2	9291	1763.1	9321	1762.2
9332	1760.3	9362	1758	9377	1757.6	9388	1752	9404	1754.6
9417	1753.8	9437	1750.4	9454	1750.7	9479	1754.9	9493	1756.6
9528	1756.7	9552	1756.7	9583	1757.1	9616	1757.8	9656	1758.2
9692	1758.9	9729	1760	9750	1759.4	9767	1759.8	9791	1758.1
9814	1758.5	9851	1759.2	9883	1759	9908	1758.5	9924	1757
9938	1757.7	9975	1757.7	9986	1755.1	10000	1755	10018	1755.2
10042	1755.3	10056	1757.7	10111	1758.5	10142	1758.7	10163	1759.6
10198	1760.5	10244	1760.9	10281	1760.1	10318	1759.2	10336	1759.3
10361	1759.6	10381	1759.5	10434	1759.2	10471	1761.4	10502	1763.1
10533	1763.6	10581	1763.5	10628	1763.1	10660	1763.7	10706	1763.7
10752	1763.6	10796	1763.6	10855	1763.9	10889	1763.8	10896	1761.9
10910	1763.9	10932	1764	10947	1766.7	10962	1766	10991	1764
11003	1762.8	11018	1766.7	11036	1768.5				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9245	.055	9377	.05	9479	.055	9975	.05	10056	.055
10502	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975	10056	750	917.8	650	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10244	11036	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.57

INPUT
Description:
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9578	1785.6	9624	1759.3	9644	1751.3	9663	1748.8	9671	1748.5
9703	1746	9714	1743.7	9735	1743.5	9747	1746.6	9772	1749.2
9819	1750.4	9829	1750.1	9832	1750.3	9879	1751.1	9926	1752.5
9947	1752.5	9969	1745.1	10000	1744.4	10001	1744.4	10006	1745.5
10014	1745.9	10041	1751.5	10062	1749.2	10076	1751.5	10102	1751.5
10116	1750.9	10146	1751.2	10170	1752.4	10224	1752.3	10247	1751.4
10263	1752.2	10302	1753.1	10332	1753.6	10360	1753.3	10386	1753.7
10400	1751	10416	1753.4	10452	1752.6	10474	1752.5	10490	1751.8
10507	1752.7	10528	1752.8	10560	1754.2	10585	1755.2	10600	1756.5
10645	1757	10678	1757.7	10717	1757.9	10766	1758.1	10820	1758.8
10862	1759.2	10915	1760.1	10941	1760.2	10950	1760.5	10964	1760.8
10993	1760.4	11007	1760.2	11021	1761.1	11048	1761.8	11082	1765.7
11111	1770.4	11148	1776.8						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9578	.07	9703	.04	9747	.07	9947	.04	10041	.07
10600	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9947	10041	275	389	675	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.49

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9699	1762.2	9727	1754.7	9755	1746.3	9766	1747.1	9792	1747.4
9832	1747.4	9853	1745.9	9867	1742.7	9895	1743.3	9909	1744.9
9930	1744.8	9965	1744.6	9985	1741.7	10000	1741.9	10015	1745.2
10037	1746.9	10052	1746.9	10060	1746.2	10072	1745.8	10082	1747.3
10111	1747.8	10142	1748.7	10167	1748.9	10202	1749	10243	1748.9
10282	1748.7	10327	1748.2	10379	1748	10394	1747.8	10406	1746.5
10417	1747.4	10434	1743.7	10445	1744	10464	1746.9	10481	1742.3
10497	1746.3	10522	1748.9	10562	1750.3	10602	1751.2	10637	1751.4

10676	1751.9	10727	1752.2	10780	1752.5	10817	1752.7	10834	1753.1
10873	1753.7	10897	1754.2	10951	1754.5	10998	1754.9	11036	1755.3
11087	1755.7	11131	1757.1	11137	1757.6	11163	1757.6	11194	1759.2
11230	1759	11254	1759.4						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9699	.07	9853	.04	9909	.07	9965	.04	10037	.07
10202	.055	10417	.04	10497	.07	10562	.045		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10037	1162.5	1099.7	850	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.29

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9535	1750.9	9583	1741.6	9597	1737.2	9608	1739.5	9634	1739.1
9647	1737.5	9660	1732.6	9678	1737.5	9712	1739.3	9758	1740.2
9788	1740.1	9800	1739.1	9812	1739.7	9832	1738.7	9852	1735.8
9872	1737.4	9914	1738.3	9932	1737	9949	1735.5	9968	1735
9976	1734	9984	1734.6	10000	1734.3	10009	1735.5	10020	1735.3
10029	1733.5	10049	1739.9	10076	1740.5	10115	1740	10130	1736.1
10144	1734.7	10160	1736.9	10185	1738.4	10213	1742	10244	1742.5
10266	1742.8	10270	1742.2	10286	1742.8	10318	1742.8	10349	1742.7
10388	1742.8	10395	1742.5	10429	1742.5	10468	1742.2	10472	1742.6
10553	1742.5	10565	1741.1	10574	1742.8	10607	1743.2	10634	1743
10693	1743.3	10746	1744.6	10795	1744.9	10858	1745.6	10899	1746
10970	1747.1	11035	1747.8						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9535	.055	9634	.04	9678	.055	9914	.04	10049	.07
10115	.04	10185	.055	10244	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9914	10049		200	300	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.23

INPUT
Description: NEW CROSS SECTION: GR CARD DATA FOR 18.20 DEVELOPED FROM TOPOGRAPHIC MAPS. CROSS SECTION ADDED TO MODEL FLOW OVER CLOUD ROAD. CAPACITY OF 3-60" CMPS IGNORED
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9510	1750	9550	1740	9640	1736	9650	1734	9660	1736
9690	1736	9700	1735	9710	1736	9780	1738	9800	1738
9930	1736	9950	1734	9965	1732	10000	1730	10010	1738.8
10240	1740	10480	1740	10730	1740	10870	1742		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9510	.055	9930	.04	10010	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10010		370	370	400	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.16

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9687	1755.1	9711	1739.9	9724	1736.1	9754	1734	9768	1730.7
9775	1730.5	9788	1733.9	9810	1735.2	9836	1735.2	9860	1734.7
9877	1733.3	9892	1732.7	9911	1732.9	9951	1732.5	9981	1732.5
9996	1729.6	10000	1729.6	10020	1729.6	10050	1728.8	10075	1739
10078	1737.8	10095	1737.2	10124	1735.8	10139	1734.7	10155	1734
10199	1733.5	10330	1730	10380	1730	10430	1734	10650	1736
10750	1736.9	10930	1738	11040	1738	11130	1740		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9687	.07	9754	.04	9788	.07	9981	.04	10075	.055
10330	.04	10430	.055						

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Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9981   10075              345   377.6     360             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 18.09

INPUT
Description: END OF CARTER-BURGESS ONE-FOOT CONTOUR MAPPING. MONTGOMERY-WATSON
             TWO-FOOT INTERVAL CONTOUR MAPPING RESUMES. ENCROACHMENT INSERTED
             AT SECTION 18.09 TO CONTAIN FLOODPLAIN
Station Elevation Data    num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9828  1748.2    9855  1733.9    9862  1732.7    9872  1729.9    9880  1729.7
    9885  1731.3    9900  1730.9    9919  1727.3    9936  1730.5    9951  1727.5
    9971  1728.2    9991  1728.2   10000  1727.4   10006  1727.8   10065  1728.8
   10076  1729.6   10090  1731.3   10119  1731.8   10178  1731.7   10226  1730.9
   10264  1729.9   10280  1726.2   10290  1725.9   10310    1733   10333  1732.9
   10380  1731.3   10407  1730.4   10447  1729.1   10497  1728.6   10522  1729.1
   10540  1723.5   10556  1723.7   10573  1728.6   10597  1731.4   10633  1733.6
   10663  1734.3   10717  1734.2   10772  1733.5   10799  1732.5   10847  1732.3
   10899  1732.4   10935  1732.3   10974  1733.1   11013    1733   11076  1732.8
   11132  1733.3   11210  1733.7   11263    1734   11349  1734.7   11423  1735.8
   11479  1736.6   11538  1737.7   11570    1738   11595  1738.6   11632  1739.1
   11661  1739.7

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9828     .07    9936     .04   10090     .07   10310    .055   10522     .04
   10573    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9936   10090            712.5   705.8     375             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.95

INPUT
Description: CLOUD ROAD CROSSES THROUGH THIS CROSS-SECTION. 3-60" CMPS:
             CAPACITY IGNORED REMOVED LEFT ET 9845
Station Elevation Data    num=      35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9755.02 1740.51 9818.34 1730.21  9852.1 1726.85    9867 1726.36 9873.24 1726.15
 9879.76 1724.21  9941.9 1724.2110021.83 1722.2110042.15 1722.21   10047 1723.51
10058.87 1726.7110131.78 1726.2110166.46 1727.0110219.74 1727.0710281.54 1728.21
10340.58 1728.2110351.82 1726.2110391.92 1724.2110410.16 1724.4310440.86 1728.21
10470.78 1728.2110517.06 1726.7110529.03 1726.2110545.77 1723.0610569.84 1728.36
10647.71 1730.2110713.11 1730.3110858.38 1730.2110888.71 1729.96 11036.4 1730.21
11046.39 1731.3111060.67 1734.2111064.15 1732.1111068.55 1734.9511081.31 1752.83

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9755.02    .055 9873.24     .0410058.87     .0710340.58     .0410440.86    .055
10529.03     .0410569.84    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9873.2410058.87              500   563.8     520             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.84

INPUT
Description: Change elevation of 10533.75 and 10579.92 to 1718 to match topo,
             Modified geometry to include changes by Tramonto development
             between station 1072 and 10867.86

REMOVED LEFT ET 9770

4-8-99: ADDED RIGHT FP ET AT 10706
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9670.69 1730.91 9713.32 1728.97 9753.84 1724.21 9772.54 1720.21 9790.38 1720.65
  9800.9 1722.31 9834.61 1724.21 9909.89 1724.21    9925 1723.21 9940.13 1722.21
 9955.16 1719.61 10029.4 1718.2110048.88 1718.2110133.86 1718.21 10164.5 1720.21
   10219 1720.3110230.85 1722.2110374.53 1722.21 10440.3 1723.3410487.83 1722.59
10533.75    171810579.92    171810616.26 1722.2110663.58 1722.2110716.91 1724.21
   10720  1725.510867.86 1725.5110903.95 1725.5711049.41 1726.58

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9670.69    .055 9753.84     .04 9834.61    .055 9940.13     .04 10164.5    .055
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10487.83     .0410616.26    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9940.13 10164.5               310   341.7     310             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.78

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10585.51 and 10800

REMOVED LEFT ET
             9615
4-8-99: RIGHT EP ET CHANGED FROM 10607 TO 10610
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9599.65 1732.21 9627.65 1721.39  9684.5 1716.21 9717.21 1718.21 9765.64 1718.48
  9841.5 1720.21    9931 1720.21 9955.49 1720.21 9973.26 1714.21 9988.08 1714.21
   10026 1713.3810070.76 1716.2110151.26 1716.4410235.37 1716.0110282.17 1718.21
10309.14 1720.2110385.19 1720.21 10409.4 1716.2110447.79 1716.2110488.02 1720.21
10527.03 1720.2110585.51 1722.21 10585.6  1723.3   10800  1723.3 10884.8 1723.81
10986.97 1724.2111024.28  1724.9

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9599.65    .045 9955.49     .0410070.76    .05510385.19     .0410488.02    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9955.4910070.76               490   661.3     720             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.65

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10358.37 and 10903.11

4-8-99: ADDED RIGHT FP ET
             10314



Station Elevation Data    num=      24
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9382.74 1726.21 9413.87 1716.21 9475.55 1714.21  9482.6 1712.21 9493.88 1712.71
 9550.02 1713.98 9594.24 1713.48  9630.3 1714.21 9665.77 1713.31 9812.95 1714.21
 9899.02  1712.1 9912.78 1708.21    9924 1707.25 9959.39 1704.21 9984.01 1704.21
 9992.68 1708.3110000.49 1710.21   10021 1711.2810077.36 1714.2110133.98 1715.41
10205.53 1716.11   10314 1716.11 10314.1    171910903.11    1719

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9382.74    .045 9899.02     .0410000.49    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9899.0210000.49               370   460.8     500             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.57

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10401.97 and 11289.4, raised elevation to
             1715

4-8-99: ADDED RIGHT FP ET AT 10302, ADDED LEFT FP ET AT
             9440
Station Elevation Data    num=      23
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9303.56 1717.16 9335.15 1715.35 9428.56  1714.3 9471.01 1714.57  9508.1 1710.21
 9548.25 1711.34 9576.05 1712.21 9686.77 1712.21 9871.91 1708.21  9897.5 1706.21
    9923 1706.21 9930.23 1702.21 9971.46  1703.610007.46 1706.3810020.08 1708.91
   10040 1710.2110114.97 1708.53 10161.6  1711.510169.27 1712.21   10302 1712.21
10401.97    171511225.31    1715 11289.4 1715.39

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9303.56    .045 9576.05    .055 9871.91     .04   10040    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
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       9871.91   10040              365   474.4     500             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.48

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10455.69 and 11616.42, raised elevations to
             1710.5.

4-8-99: RT FP ET CHANGED FROM 11597 TO 10383, LEFT FP
             ET CHANGED FROM 9404 TO 9478
APPROX. 3,600CFS DIVERTS INTO RIGHT
             OVERBANK FROM THIS CROSS-SECTION DOWNSTREAM. REFER TO SPLIT FLOW
             MODEL FOR RIGHT OVERBANK ANALYSIS. FLOODWAY ANALYSIS USES ENTIRE
             FLOW AND IS STRICTLY FOR MAIN CHANNEL.
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9372.88 1716.21 9458.51 1711.05 9485.84 1708.21 9544.18 1708.21  9597.5 1707.46
 9679.17 1706.81 9739.84 1706.21 9877.04 1706.21    9893 1702.89 9936.69 1702.21
 10037.7 1702.2110047.62 1704.6110063.16 1706.21   10073 1706.2110247.95 1706.21
10301.08 1706.71   10383 1706.7110455.69  1710.511541.69  1710.511616.42 1710.65
11696.98 1712.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9372.88    .045 9877.04     .04   10073    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9877.04   10073              429   429.4     429             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.39

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10621.24 and 11645.05 by raising the elevation to
             1706.11.  This elevation is from the cross section profiles,
             rather than the grading drawing.  The grading drawing shows the
             elevatio

4-8-99: RIGHT FP ET CHANGED FROM 11369 TO 10508


Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9116.73 1711.31 9167.22 1710.21    9190 1710.21 9326.23 1707.99 9403.55 1706.21
 9430.65 1706.21  9471.2 1705.33 9555.58 1704.95  9664.9  1705.2 9710.74 1705.61
 9779.45 1704.11 9887.09 1702.21    9893 1698.05 9898.69 1698.21 9920.72 1698.21
 9928.58 1700.21 9951.05 1696.21  9973.4 1696.21 9991.02 1698.2110057.52 1700.21
10099.04 1700.2110111.87 1698.2110131.69 1698.2110144.53 1702.2110170.78 1702.21
   10179 1701.5110195.61 1700.21 10231.6 1702.2110316.97 1702.3710463.14 1702.98
   10508 1702.9810621.24 1706.1111622.56 1706.1111645.05 1706.1111673.91 1705.15
11732.23  1705.1 11786.9 1705.6111887.47 1705.1111960.19 1705.4112035.23 1704.99
12058.85 1704.39

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9116.73    .055 9326.23    .045 9887.09     .0410144.53    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9887.0910144.53              465     500     530             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 9116.73    9731
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
11643.96   12071 1706.24

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.3

INPUT
Description: Modified geometry to include changes by Tramonto development. To
             the right on station 10584.84 raised elevations to
             1702.4

4-8-99: RIGHT FP ET CHANGED FROM 11686 TO 10590, LEFT FP
             ET CHANGED FROM 9451 TO 9568
Station Elevation Data    num=      29
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9322.93 1704.81 9419.22 1704.21 9448.82 1704.11 9534.19 1701.51 9566.96 1700.21
 9598.26 1700.21 9656.94 1698.21 9720.94 1698.21 9761.09 1697.56 9881.54 1698.21
 9933.98 1697.23 9946.95 1696.21 9962.55 1692.21    9970 1692.2110031.21 1692.21
10063.76 1694.2110074.95 1696.2110119.18 1696.21   10156 1697.4110169.28 1697.91
10277.48 1698.2110295.67 1696.2110308.57 1696.3110327.84 1698.2110437.49 1698.21
10523.21 1700.2110569.87 1700.5110584.84  1702.412183.66  1702.4

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9322.93    .045 9933.98     .0410074.95     .0710437.49    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9933.9810074.95              630   644.4     580             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.18

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10749.27 elevatio from 1694.71 to 1696.01, 11408.6
             and 11794.13, and 12285.64 and 12352.81, added vertical wall on
             RHS

4-8-99: RIGHT FW ET CHANGED FROM 10672 TO 10668, RIGHT FP
             ET CHANGED FROM 10839 TO 10710, LEFT FP ET CHANGED FROM 9590 TO
             9746
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9493.99 1700.01 9664.32 1697.27 9715.97 1695.77 9779.51 1694.21 9808.56 1692.26
 9845.85 1693.41 9935.01  1692.7 9963.19 1692.21    9978 1688.95 9990.45 1686.21
10011.48 1686.21 10053.3 1690.2110123.73 1690.2110145.22  1687.510162.51 1686.21
10206.89 1688.2110244.97 1688.21   10254 1689.5610284.66 1694.2110342.46 1696.21
10386.32 1695.6110446.24 1695.3110516.41 1694.21 10575.4 1693.9810655.64 1693.27
10749.27 1696.0110806.19 1696.0110933.46 1695.9310997.29 1696.2111083.48 1696.11
11089.79 1696.3111108.75 1696.7111237.26 1695.8411322.92 1695.01 11408.6 1693.91
11794.13 1694.1111930.31 1694.7812034.58 1695.7112115.02 1696.1112238.17 1695.91
12285.64 1696.1112352.81 1696.6112381.62 1696.1112395.49 1696.8112435.45 1696.29
 12500.3 1696.9112576.83 1698.21 12621.6 1698.41 12621.7    1700

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9493.99    .055 9963.19     .04 10053.3     .0710123.73     .0410284.66    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9963.19 10053.3              610   600.8     510             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   11108 12621.7

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.06

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10572.12 and 10928.08, 11414.59 and 11790.8,
             12092.7 and 12200.38

4-8-99: RIGHT FW ET CHANGED FROM 10513 TO
             10490, RIGHT FP ET CHANGED FROM 10899 TO 10513, LEFT FP ET CHANGED
             FROM 9451 TO 9533
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9443.14 1694.16 9475.62 1690.21 9497.53 1690.21 9557.26 1688.21 9581.93 1684.21
 9621.41 1682.52 9643.26 1686.21 9763.42 1686.21 9806.79 1684.21 9929.44 1684.21
    9947 1682.89 9963.19 1681.71 9982.51 1680.21 9988.59 1682.21 10002.5 1682.21
10029.28 1678.2110052.12 1678.2110064.34 1684.6910069.46 1686.21   10090 1688.11
10122.23 1689.2110215.28 1689.5110336.61 1688.2110396.62 1688.3110487.99 1688.01
10511.72 1688.2110522.16 1687.6110572.12 1691.1910928.08 1691.1911030.08 1690.75
11081.08 1691.1111116.85 1691.11 11217.9 1690.6111307.94 1690.6111414.59 1690.26
 11790.8 1690.0511846.52 1690.2211921.73 1691.8111976.53 1691.8112032.71 1690.41
12064.67 1690.66 12092.7 1689.4912200.38 1689.6512313.66  1691.612385.08 1691.71
12479.24 1691.2112605.82 1692.31

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9443.14     .07 9557.26     .04 9643.26     .07 9929.44     .04   10090    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9929.44   10090              630     566     440             .1       .3
Blocked Obstructions     num=       1
```

```
   Sta L   Sta R    Elev
 11976.512605.82

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 16.96

INPUT
Description: GR DATA FOR SECTIONS 16.96 TO 17.95 IS BASED UPON ONE-FOOT MAPPING
             FROM CARTER-BURGESS DIGITAL TERRAIN MODEL. DATE:2-24-99
GR
             ELEVATIONS FOR SEC 16.96 TO 17.95 ARE BASED UPON CITY OF PHOENIX
             DATUM. MONTGOMERY -WATSON GR DATA ARE BASED UPON NGVD 1927 DATUM.
             THE GR DATA FOR SEC 16.96-17.95 ARE RAISED BY .21FT ON THE X1 CARD
             FOR CONVERSION TO THE NGVD 1927 DATUM
LEFT ET CHANGED FROM
             9889,9506 TO 9914 FOR BOTH FP AND FW
4-8-99: RT FW ET CHANGED
             FROM 10450 TO 10389, RT FP ET CHANGED FROM 11080 TO 10408
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9129.37    1690 9149.96    1688 9170.63    1686 9181.22    1686 9250.38    1686
 9268.83    1684 9340.93    1682 9373.32    1682 9420.61    1682 9430.52    1680
 9497.31    1678 9533.08    1678  9666.5    1678 9733.21    1678 9746.83    1680
 9756.14    1682 9764.36    1684 9771.22    1684 9781.57 1683.06 9807.96 1678.71
 9870.41 1678.21 9902.01 1678.21 9929.31 1684.21    9932 1684.21 9947.83 1684.21
    9966 1678.21 9988.98 1677.9210007.22 1676.2110075.82 1676.2110134.07 1679.61
10257.04 1680.11 10270.3 1682.6510282.57 1683.1210307.33  1684.5   10342 1684.91
10383.59 1685.4110435.94 1685.8110503.13  1684.810601.12 1684.7110660.64 1685.21
 10704.2 1685.3510830.52 1686.06 10864.9 1686.8110909.44 1688.7110920.87 1688.91
10970.87 1688.67 11018.3 1688.4211061.63 1688.6111137.84 1688.1111246.93 1688.11
11567.48 1687.4411645.69 1686.9811668.64 1686.3111730.35 1685.2111795.39 1682.91
 11904.8 1683.3211972.35 1683.8112221.54 1684.9112302.92 1685.5112482.15 1686.41
12553.87 1686.2212583.61 1686.4412619.86 1686.01

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9129.37     .07 9947.83     .0410307.33    .04510435.94    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9947.8310307.33              410   456.2     600             .1        .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 9129.37 9942.53  1689.6
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   1108012619.86

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 16.87

INPUT
Description: Bridge deck low chord and channel bed elevations are based on
             survey data by ASL Consulting (12-07-00) and JEFuller (date),
             respectively.
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9328.22    1687  9385.7  1685.7 9402.02  1685.5 9468.73  1684.7 9536.14  1683.5
 9597.17  1683.4 9654.65  1683.2 9701.49  1683.3 9755.42  1684.5 9832.07  1685.6
 9855.48  1685.7 9876.77 1671.37 9890.91 1673.51 9905.05 1673.94  9919.2 1673.14
 9933.34 1673.08 9947.48 1672.74 9961.62 1672.71 9975.76 1672.58 9989.91    1672
10004.05 1671.4810018.19  1671.410032.33 1671.1610046.48 1671.0810060.62 1670.99
10074.76 1671.22 10088.9 1670.6710103.04 1670.2510114.36 1669.9510152.83  1685.8
 10172.7  1685.610235.86  1685.210311.79  1683.110383.46  1681.710442.37  1679.9
 10503.4  1679.710553.78  1679.7 10599.2  1679.510664.49  1679.910719.84  1679.6
 10812.8  1679.910863.19  1680.110908.61  1679.710980.28  1679.211031.38  1678.8
11080.34  1678.611130.73  1678.111189.63    167811232.92  1677.711302.46  1677.8
11363.49  1678.211403.23  1678.411458.58  1678.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9328.22    .045 9855.48     .0410152.83    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9855.4810152.83              146     146     146             .3        .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9328.22 9851.87 1685.69 10153.411458.58 1685.81

BRIDGE                 RIVER: RIVER-1
REACH: Reach-1            RS: 16.865
```

INPUT
Description: Carefree Highway Bridge

```
Distance from Upstream XS =        1
Deck/Roadway Width        =      144
Weir Coefficient          =      2.7
Bridge Deck/Roadway Skew  =        0
Upstream  Deck/Roadway Coordinates
    num=       54
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9328.22    1687    1670  9365.2 1686.75    1670  9395.1 1686.19    1670
  9430.6 1685.65    1670  9466.1 1685.23    1670  9501.6 1684.93    1670
  9537.1 1684.75    1670  9539.9 1684.74    1670  9572.6  1684.7    1670
  9608.1 1684.77    1670  9643.6 1684.96    1670  9679.1 1685.27    1670
  9714.6 1685.71    1670  9825.3 1687.25    1670  9855.2 1687.64    1670
  9857.9 1687.68    1670  9857.9 1687.68    1670  9860.6 1690.18    1670
  9860.6  1690.2 1680.84  9893.4  1690.5 1681.16  9928.9 1690.77 1681.23
  9964.4 1690.93 1681.33  9999.9 1690.98 1681.26 10002.7 1690.98 1681.27
 10035.4 1690.94 1681.13 10070.9  1690.8 1680.84 10106.4 1690.55 1680.57
 10141.9  1690.2 1680.12 10141.9 1690.18    1670 10142.1 1687.68    1670
 10174.7 1687.25    1670 10272.6 1685.47    1670   10277 1685.39    1670
 10312.5 1684.78    1670   10348 1684.21    1670 10383.5 1683.69    1670
   10419 1683.21    1670 10454.5 1682.78    1670   10490  1682.4    1670
 10505.5 1682.24    1670 10525.5 1682.06    1670   10561 1681.77    1670
 10596.5 1681.53    1670   10632 1681.33    1670 10667.5 1681.18    1670
   10703 1681.08    1670 10738.5 1681.02    1670   10827 1680.94    1670
 10914.3 1680.86    1670 11001.7 1680.34    1670 11059.9    1680    1670
 11147.3 1679.48    1670 11234.6 1679.42    167011458.58  1678.3    1670

Upstream Bridge Cross Section Data
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9328.22    1687  9385.7  1685.7 9402.02  1685.5 9468.73  1684.7 9536.14  1683.5
 9597.17  1683.4 9654.65  1683.2 9701.49  1683.3 9755.42  1684.5 9832.07  1685.6
 9855.48  1685.7 9876.77 1671.37 9890.91 1673.51 9905.05 1673.94  9919.2 1673.14
 9933.34 1673.08 9947.48 1672.74 9961.62 1672.71 9975.76 1672.58 9989.91    1672
10004.05 1671.4810018.19  1671.410032.33 1671.1610046.48 1671.0810060.62 1670.99
10074.76 1671.22 10088.9 1670.6710103.04 1670.2510114.36 1669.9510152.83  1685.8
 10172.7  1685.610235.86  1685.210311.79  1683.110383.46  1681.710442.37  1679.9
 10503.4  1679.710553.78  1679.7 10599.2  1679.510664.49  1679.910719.84  1679.6
 10812.8  1679.910863.19  1680.110908.61  1679.710980.28  1679.211031.38  1678.8
11080.34  1678.611130.73  1678.111189.63    167811232.92  1677.711302.46  1677.8
11363.49  1678.211403.23  1678.411458.58  1678.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9328.22    .045 9855.48     .0410152.83    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9855.4810152.83             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9328.22 9851.87 1685.69 10153.411458.58 1685.81

Downstream  Deck/Roadway Coordinates
    num=       54
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9330.09    1687    1670  9365.2 1686.75    1670  9395.1 1686.19    1670
  9430.6 1685.65    1670  9466.1 1685.23    1670  9501.6 1684.93    1670
  9537.1 1684.75    1670  9539.9 1684.74    1670  9572.6  1684.7    1670
  9608.1 1684.77    1670  9643.6 1684.96    1670  9679.1 1685.27    1670
  9714.6 1685.71    1670  9825.3 1687.25    1670  9855.2 1687.64    1670
  9857.9 1687.68    1670  9857.9 1687.68    1670  9860.6 1690.18    1670
  9860.6  1690.2 1680.84  9893.4  1690.5 1681.16  9928.9 1690.77 1681.23
  9964.4 1690.93 1681.33  9999.9 1690.98 1681.26 10002.7 1690.98 1681.27
 10035.4 1690.94 1681.13 10070.9  1690.8 1680.84 10106.4 1690.55 1680.57
 10141.9  1690.2 1680.12 10141.9 1690.18    1670 10142.1 1687.68    1670
 10174.7 1687.25    1670 10272.6 1685.47    1670   10277 1685.39    1670
 10312.5 1684.78    1670   10348 1684.21    1670 10383.5 1683.69    1670
   10419 1683.21    1670 10454.5 1682.78    1670   10490  1682.4    1670
 10505.5 1682.24    1670 10525.5 1682.06    1670   10561 1681.77    1670
 10596.5 1681.53    1670   10632 1681.33    1670 10667.5 1681.18    1670
   10703 1681.08    1670 10738.5 1681.02    1670   10827 1680.94    1670
 10914.3 1680.86    1670 11001.7 1680.34    1670 11059.9    1680    1670
 11147.3 1679.48    1670 11234.6 1679.42    167011444.85  1678.3    1670
```

```
Downstream Bridge Cross Section Data
Station Elevation Data    num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9330.09  1686.9 9398.22  1685.4 9459.25  1684.6  9507.5  1684.1 9571.37  1683.3
 9633.11  1683.3 9680.66  1683.5 9716.85  1684.2 9767.23  1684.9 9809.81  1685.7
 9850.97    1686 9877.23 1671.45 9897.37 1671.29 9905.51 1671.92 9919.66 1671.98
  9933.8 1672.52 9947.94 1672.76 9962.08 1672.81 9976.22 1672.58 9990.37 1672.08
10004.51 1671.4410018.65  1671.310032.79 1671.2810046.94 1670.5410061.08 1671.17
10075.22 1670.7610089.36 1670.59 10103.5 1670.6110116.59 1670.8110118.51  1671.2
10149.03  1685.910202.96  1685.310254.76  1684.310312.25  1683.210371.15  1681.8
10386.76  1681.410439.98  1679.710491.79  1679.5 10544.3  1679.410589.01  1679.4
10643.65  1679.510696.88  1679.710742.29  1679.910792.68  1680.310838.81  1679.8
 10882.8    1680 10948.8  1679.711005.57  1679.411057.38  1679.311106.34    1679
 11161.7  1678.711215.63  1678.411267.43  1678.311325.63  1678.111371.75  1678.4
11444.85  1678.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9330.09    .045 9850.97     .0410149.03    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9850.9710149.03             .3        .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9330.09 9850.97    168610149.0311444.85  1685.9

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         = 1688.08
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Piers =  3

Pier Data
Pier Station     Upstream= 9928.97    Downstream= 9928.97
Upstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78
Downstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78

Pier Data
Pier Station     Upstream=   10000    Downstream=   10000
Upstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78
Downstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78

Pier Data
Pier Station     Upstream=10071.03    Downstream=10071.03
Upstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78
Downstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum                Cd   =    1.33
       Yarnell                 KVal =    1.05
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =      .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
```

inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.86

INPUT
Description: Bridge deck low chord and channel bed elevations are based on survey data by ASL Consulting (12-07-00) and JEFuller (date), respectively.
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9330.09	1686.9	9398.22	1685.4	9459.25	1684.6	9507.5	1684.1	9571.37	1683.3
9633.11	1683.3	9680.66	1683.5	9716.85	1684.2	9767.23	1684.9	9809.81	1685.7
9850.97	1686	9877.23	1671.45	9897.37	1671.29	9905.51	1671.92	9919.66	1671.98
9933.8	1672.52	9947.94	1672.76	9962.08	1672.81	9976.22	1672.58	9990.37	1672.08
10004.51	1671.44	10018.65	1671.31	10032.79	1671.28	10046.94	1670.54	10061.08	1671.17
10075.22	1670.76	10089.36	1670.59	10103.5	1670.61	10116.59	1670.81	10118.51	1671.2
10149.03	1685.91	10202.96	1685.31	10254.76	1684.31	10312.25	1683.21	10371.15	1681.8
10386.76	1681.41	10439.98	1679.71	10491.79	1679.5	10544.3	1679.41	10589.01	1679.4
10643.65	1679.51	10696.88	1679.71	10742.29	1679.91	10792.68	1680.31	10838.81	1679.8
10882.8	1680	10948.8	1679.71	11005.57	1679.41	11057.38	1679.31	11106.34	1679
11161.7	1678.71	11215.63	1678.41	11267.43	1678.31	11325.63	1678.11	11371.75	1678.4
11444.85	1678.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9330.09	.045	9850.97	.041	10149.03	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9850.97	10149.03	888.2	879.1	778.2	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9330.09	9850.97	1686	10149.03	11444.85	1685.9

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.68

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9880	1682.1	9916	1676.2	9928	1673.5	9950	1662.9	9956	1662.6
9964	1666.6	9989	1666.2	10000	1662.3	10009	1662.8	10020	1662.7
10025	1664.5	10043	1665.2	10076	1665.3	10100	1664.9	10107	1662.9
10120	1662.9	10135	1661.5	10142	1665.1	10161	1665.4	10168	1664.6
10183	1664.2	10192	1664.5	10218	1663.7	10230	1662.3	10247	1661.7
10262	1662.9	10302	1664.5	10308	1664	10353	1663.9	10390	1664
10437	1663.6	10463	1663.5	10470	1662.9	10479	1663.5	10511	1662.7
10530	1661.8	10540	1661.3	10553	1661.3	10569	1662.3	10590	1666.8
10612	1675.2	10641	1674.8	10677	1675.2	10718	1675.4	10765	1675.4
10821	1675.3	10870	1675.4	10900	1675.6	10938	1675.6	10964	1676
11005	1676								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9880	.07	9989	.04	10025	.045	10100	.04	10142	.055
10218	.045	10302	.055						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9989	10025	940	997.5	1160	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.49

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9520	1667.1	9583	1667.6	9619	1667.4	9661	1665.7	9708	1665.1
9776	1664.9	9808	1664.1	9841	1661.9	9871	1661.5	9888	1659.1
9906	1659.2	9925	1653.7	9933	1653.9	9961	1653.8	10000	1653.3
10018	1654.5	10040	1658.6	10066	1658.9	10073	1658.1	10095	1657.8
10104	1659.1	10130	1659.5	10147	1653.7	10168	1654	10211	1653.7
10224	1655.7	10234	1655.2	10246	1655.3	10253	1656.7	10285	1657.7
10316	1658.8	10335	1659.1	10371	1658.9	10413	1657.8	10420	1656.7
10428	1657.4	10438	1657.6	10446	1656.8	10465	1657.6	10485	1659.8
10512	1662.4	10532	1663.3	10582	1664	10619	1664.5	10669	1664.7
10742	1664.8								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9520	.055	9906	.04	10040	.07	10130	.04	10224	.045
10371	.055								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9906	10040	1190	1153.6	1150	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.27

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9044	1655.1	9106	1655.3	9139	1655.6	9198	1655.9	9247	1656.1
9283	1656.3	9326	1655.9	9357	1654.9	9394	1652.7	9404	1650.9
9443	1650.4	9466	1650.5	9508	1650.7	9529	1648.7	9539	1648.6
9553	1646.7	9572	1648.2	9588	1647.6	9600	1648.6	9623	1647.5
9643	1649	9667	1650.5	9682	1650.2	9700	1650.3	9724	1649.6
9760	1650.2	9771	1648.3	9798	1647.7	9816	1646.1	9835	1647.3
9853	1647.9	9872	1649.6	9892	1649.9	9905	1648.8	9915	1648.9
9923	1648.4	9947	1648.9	9967	1643.5	9990	1642.4	10000	1639.4
10009	1639.8	10032	1640	10045	1654.9	10052	1655.9	10111	1656
10158	1656.2	10207	1656.4	10255	1656.4	10316	1656.5	10391	1656.1

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9044	.045	9508	.055	9667	.045	9872	.055	9947	.04
10045	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9947	10045	400	422.1	425	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.19

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9011	1652	9072	1652.5	9131	1652.6	9193	1652.8	9235	1652.7
9260	1651.8	9281	1649.9	9326	1647.9	9377	1645.6	9385	1644.7
9392	1645.2	9431	1646.1	9457	1646.6	9500	1646.3	9506	1645.4
9515	1646.3	9539	1646.3	9548	1645.2	9556	1645.8	9574	1645.2
9600	1643.7	9613	1641.7	9624	1640.9	9639	1641.8	9652	1641.7
9664	1642.7	9687	1642.9	9695	1642.4	9709	1642.5	9730	1644.9
9760	1646.3	9781	1646.9	9807	1647.2	9817	1646.2	9833	1645.8
9855	1646.5	9881	1646.9	9907	1644.9	9934	1644.4	9950	1643.9
9966	1638.9	9981	1639.7	10000	1637.5	10018	1637.8	10034	1637.9
10048	1639.1	10077	1652	10101	1652.8	10139	1653.2	10192	1653.3
10245	1653	10291	1652.7	10341	1652.4	10389	1652.2		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9011	.045	9600	.055	9730	.045	9950	.04	10077	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10077	540	645.6	660	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.07

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9258	1648.3	9327	1648.3	9384	1648.3	9446	1648.1	9494	1648
9536	1647.3	9578	1646.8	9614	1645.7	9631	1644.4	9648	1641.8
9701	1641.5	9720	1641.1	9734	1638.4	9750	1637.8	9760	1639.7
9781	1637.5	9791	1639.3	9822	1639.5	9854	1638.8	9877	1638.8
9884	1639.4	9902	1640.1	9948	1640.1	9974	1638.8	9986	1634.8
10000	1634.3	10037	1634.7	10044	1635.4	10071	1636.2	10089	1636.3
10105	1635.5	10113	1635.5	10130	1643.3	10166	1644.3	10196	1645.7
10222	1646.5	10267	1646.6	10315	1646.7	10350	1646.2	10392	1645.8
10433	1645.6	10494	1645.5						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9258	.035	9760	.055	9974	.04	10130	.035

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

9974	10130		980	950.3	840		.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.89

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9095	1636.6	9172	1637	9243	1636.9	9312	1637.2	9359	1637.1
9398	1637.6	9428	1638.1	9460	1637.5	9490	1634	9517	1630.6
9522	1631.6	9539	1631.8	9550	1631.4	9571	1631.6	9626	1632.6
9676	1633.3	9714	1633.4	9744	1632.5	9775	1631.7	9809	1630.9
9818	1629.2	9822	1629.2	9831	1630.6	9850	1631.6	9866	1632.4
9887	1632.6	9901	1632.1	9919	1636.5	9934	1635.9	9949	1633.3
9969	1633.2	9981	1632.2	10000	1626.9	10011	1627	10018	1628.2
10035	1627.9	10056	1626.8	10068	1626.8	10096	1630.8	10121	1630.7
10172	1631.1	10182	1630.2	10194	1630.1	10210	1633.5	10224	1635.6
10243	1636.1	10296	1636.9	10337	1637	10370	1637.2	10414	1637.1
10440	1636.4	10469	1636.4	10477	1635.7	10492	1636.7	10535	1636.9
10578	1637.6	10598	1637.2	10621	1637.2				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9095	.045	9969	.04	10096	.055	10224	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969	10096	700	738.4	730	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.75

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9040	1633.1	9098	1633.1	9146	1632.7	9185	1632	9268	1632
9319	1631.5	9364	1630.5	9404	1630.7	9431	1629.9	9467	1626.7
9481	1626.1	9500	1624.3	9515	1624.3	9534	1623.4	9549	1619.5
9557	1619.5	9566	1622.4	9580	1624.1	9602	1624.8	9637	1625.6
9689	1626.1	9712	1626	9736	1625	9751	1625.4	9769	1627.1
9816	1628.7	9835	1628.8	9850	1627.8	9875	1628	9933	1628.6
9944	1627.2	9963	1626.9	9967	1626.1	9977	1625.7	10000	1619.8
10015	1620.1	10027	1621.2	10050	1621.5	10070	1616.7	10079	1616.3
10102	1627.5	10116	1627.9	10121	1627.5	10138	1628.4	10174	1629.3
10210	1630.3	10259	1631.2	10307	1631.4	10370	1631.7	10411	1631.7

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9040	.035	9534	.04	9580	.045	9977	.04	10102	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977	10102	880	1048.4	1030	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.55

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9645	1628	9680	1627.1	9703	1626.7	9731	1626.5	9761	1626.1
9790	1625.3	9822	1623.7	9835	1622.3	9858	1618.7	9869	1619.5
9906	1619.7	9935	1619.5	9954	1618.8	9972	1615.4	9982	1615.3
9991	1613.8	10000	1613.9	10030	1614.7	10057	1615.2	10078	1614.9
10093	1613.4	10104	1614.5	10126	1617.5	10147	1619.4	10184	1620.5
10222	1620.7	10247	1620.5	10266	1620.2	10278	1619.4	10314	1618.9
10326	1619.4	10343	1620	10368	1624.2	10381	1625	10410	1625.1
10453	1625.3	10483	1625.2	10525	1625.1	10531	1625		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9645	.035	9954	.04	10147	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9954	10147	730	755.3	550	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.41

INPUT

Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9542	1618	9643	1618.6	9676	1618.9	9683	1620.7	9694	1619
9751	1619.4	9787	1619.7	9830	1620	9867	1619.2	9907	1619.4
9940	1619.7	9968	1618.7	9979	1615.1	9993	1609.8	10000	1609.2
10009	1608.3	10021	1607.6	10027	1609.7	10043	1610.4	10053	1610.4
10058	1611.1	10070	1612.8	10077	1613.1	10085	1611.8	10096	1612
10106	1610.1	10113	1611.9	10124	1613	10135	1613	10157	1612.5
10178	1611.8	10194	1612	10212	1610.2	10221	1610.9	10245	1610.4
10257	1609.6	10282	1609.4	10297	1608.7	10310	1610.1	10324	1611
10333	1611	10353	1614.7	10383	1618.6	10403	1620.1	10426	1620.5
10440	1621.2	10464	1619.6	10479	1617.9	10496	1618.1	10517	1619.3
10534	1620	10569	1621	10607	1622	10642	1622.6	10678	1622.9
10732	1623	10769	1623.1						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9542	.035	9968	.04	10070	.055	10333	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968	10070	980	968.9	950	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9542	9940	1619.7

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.22

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9749	1612	9816	1611.9	9893	1611.1	9937	1610.5	9977	1609.1
9996	1599.9	10000	1599.4	10022	1599.2	10041	1598.9	10057	1602.7
10077	1605.6	10091	1606.6	10113	1606.1	10126	1606.8	10151	1607.7
10166	1607.9	10191	1606.7	10210	1606	10234	1606.8	10242	1605.9
10249	1606.2	10260	1604.1	10269	1605.4	10282	1605.1	10301	1602
10310	1601.5	10327	1601.9	10348	1607.8	10374	1608.2	10413	1608
10439	1607.9	10461	1604.5	10480	1607.3	10507	1607.9	10527	1609.1
10570	1611	10605	1612.3	10657	1613.6	10672	1613.8	10708	1613.4
10752	1613.6	10797	1614.3	10850	1615.1				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9749	.035	9977	.04	10091	.055	10282	.04	10348	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977	10091	535	553.1	600	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.12

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9503	1606.8	9545	1606.7	9620	1606.5	9665	1606.2	9703	1605.5
9754	1604.5	9762	1603.8	9792	1604.4	9836	1603.5	9865	1603.5
9886	1602.9	9903	1603.3	9928	1603.9	9975	1604.1	10000	1596.3
10009	1596.9	10015	1596.4	10032	1596.7	10059	1595.8	10070	1600.2
10087	1601.3	10109	1601.7	10130	1602.2	10144	1602.4	10156	1601.5
10176	1602.1	10205	1602.1	10213	1601.7	10230	1602.2	10258	1602.8
10282	1595.4	10302	1596.7	10319	1597.2	10351	1601.5	10370	1600.3
10378	1601.1	10387	1601.1	10417	1603.1	10441	1603.4	10480	1603.1
10493	1602.9	10513	1603.8	10532	1604.1	10546	1606.5	10564	1606.1
10587	1607.2	10621	1608.2	10657	1609.1	10716	1609.8	10769	1610.4
10822	1610.7								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9503	.035	9975	.04	10087	.055	10258	.04	10351	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975	10087	255	283.6	330	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.06

INPUT
Description:

Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9663	1606.6	9685	1606.5	9707	1605.7	9733	1603	9751	1599.7
9759	1599	9764	1599.5	9782	1600.1	9800	1600.6	9836	1600.6
9872	1601.4	9917	1602.1	9972	1602.2	9988	1597.9	10000	1593
10010	1591.5	10020	1591.3	10043	1594.5	10060	1593.9	10070	1595.3
10089	1597.5	10109	1598	10126	1597.8	10138	1595.7	10152	1596.7
10174	1600.2	10205	1600.1	10229	1593.4	10246	1593.7	10268	1596.4
10283	1596.6	10298	1597.3	10314	1597.8	10323	1597.1	10337	1598.4
10350	1597.4	10367	1600	10390	1601.4	10411	1601.3	10441	1599.6
10453	1595.7	10470	1600.3	10480	1600.7	10495	1602.7	10517	1603.6
10549	1605.1	10581	1606	10621	1606.6	10667	1606.9	10713	1607.1
10776	1607.2								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9663	.045	9972	.04	10089	.055	10205	.04	10268	.045
10441	.04	10470	.035						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10089	670	930.3	950	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.89

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9234	1601.5	9270	1601.3	9318	1599.7	9337	1598.4	9377	1597.4
9406	1597	9434	1596.9	9460	1597.5	9477	1598.4	9494	1598.5
9511	1597	9549	1595.3	9572	1593.2	9577	1593.5	9587	1590.8
9606	1591.2	9626	1591	9633	1592	9659	1593	9671	1592.7
9683	1593.5	9702	1593.6	9714	1592.4	9741	1592.5	9775	1592.4
9804	1592.7	9817	1591.3	9847	1591.4	9869	1591.8	9890	1592.2
9906	1593	9927	1592.5	9938	1591.9	9949	1589.9	9956	1589.9
9979	1587.2	9995	1583.3	10000	1583.2	10013	1583.3	10032	1583.8
10042	1588	10059	1596.4	10087	1597.2	10101	1598.2	10141	1599.3
10186	1599.6	10236	1600.2	10284	1600.4	10319	1600.5		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9234	.035	9577	.055	9633	.045	9938	.04	10059	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9938	10059	700	756.4	760	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.74

INPUT
Description: CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW

Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9253	1594.6	9384	1594.6	9435	1593.5	9495	1592.2	9526	1591.7
9540	1590.5	9564	1589.6	9615	1589.3	9650	1589	9663	1587.4
9705	1587.4	9720	1587	9769	1588.5	9791	1588.3	9809	1587.1
9837	1586.1	9853	1585.5	9871	1585.1	9891	1585.5	9917	1584.9
9952	1585	9976	1587.3	9988	1581.8	10000	1581.8	10024	1582.1
10057	1581.7	10076	1588.3	10095	1588.3	10125	1590.2	10145	1591
10172	1591.6	10203	1591.5	10225	1591.5	10248	1591.6	10375	1591.7
10635	1592	10690	1592.6						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9253	.035	9650	.055	9769	.035	9976	.04	10076	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976	10076	1180	1070.9	970	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.54

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8984	1584.8	9072	1584.8	9160	1584.7	9220	1584.7	9283	1584.9

9355	1584.7	9421	1584.5	9499	1584.2	9525	1583.8	9546	1583.4
9563	1583.7	9621	1583.4	9683	1583.8	9715	1583	9741	1583.4
9767	1582.9	9798	1583.5	9818	1583.9	9845	1584.2	9892	1584
9926	1583.2	9950	1581.9	9970	1574.4	9986	1574	10000	1571.6
10045	1576.7	10066	1574.9	10080	1577.8	10110	1579.5	10136	1577.7
10153	1578.5	10177	1578.1	10199	1576.3	10222	1576.9	10259	1576.6
10273	1577.7	10287	1577.7	10306	1578.9	10354	1578.4	10384	1578.1
10410	1577	10416	1578.1	10428	1578.3	10437	1577.7	10458	1580.1
10480	1583	10495	1583.8	10523	1584.2	10556	1584.8	10588	1585
10623	1584.4	10669	1583.5	10695	1583.4	10738	1583.4	10762	1583.8
10808	1584.1	10821	1583.9	10881	1583.9	10936	1584.2	10999	1584.2
11072	1584.2	11131	1584.3	11205	1584.1	11269	1584.2	11381	1584.9

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8984	.035	9950	.04	10110	.055	10177	.07	10306	.055
10495	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10110	1410	1273.2	1150	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.3

INPUT
Description: The following GR record has been modified as per discussion with the FEMA technical evaluator. From station 8450 to station 9500, the elevations are read from the topographic map. From station 9563 to station station 11361, the elevations remain the same as provided by the Aerial Mapping Company, Inc (AMCI) (March 17, 1998).

Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8450	1576.2	8550	1575.9	8650	1574.1	8750	1573.7	8850	1573.5
8950	1573.4	9050	1573.3	9150	1572.5	9250	1572.5	9350	1571.9
9450	1571.9	9500	1573.5	9563	1573.8	9626	1574.2	9652	1573.5
9672	1573.1	9707	1573.8	9731	1573.7	9769	1573.8	9788	1573.2
9836	1573.2	9878	1572.9	9906	1572.4	9923	1571.6	9941	1570.4
9961	1565.1	9967	1565.2	9973	1560	9983	1560.3	10000	1559.6
10011	1566.5	10027	1570	10045	1570.1	10052	1569.4	10062	1570.1
10097	1571	10131	1571.2	10157	1571.1	10191	1572.5	10211	1572.9
10251	1572.6	10297	1572.3	10351	1572.5	10386	1572.2	10410	1571.8
10417	1572.1	10437	1571.7	10448	1571.7	10480	1571.5	10515	1571.6
10552	1572.7	10571	1572.9	10608	1572.7	10642	1572.4	10681	1571.4
10735	1571.6	10765	1571.9	10792	1572	10804	1571.2	10811	1571.8
10852	1573.2	10899	1575.9	10931	1577.1	10967	1577.9	10992	1578.4
11034	1578.7	11096	1578.6	11179	1578.4	11233	1578.2	11273	1577.7
11295	1582.1	11336	1582.8						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8450	.045	9923	.04	10027	.045	10681	.07	10852	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9923	10027	1010	1213.6	1210	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.07

INPUT
Description: CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW

Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8530	1565.4	8652	1564	8685	1562	8705	1560.7	8805	1560.7
8920	1562	9043	1562.4	9116	1562.8	9185	1563.1	9201	1562.8
9250	1562.8	9286	1563.3	9321	1563.7	9353	1563.4	9394	1562.5
9417	1561.5	9462	1561.4	9530	1562.3	9554	1562.4	9566	1562
9614	1562	9680	1562.3	9746	1563.1	9814	1563.6	9855	1564
9879	1564.3	9898	1560.9	9904	1561.4	9924	1558.5	9938	1558.9
9959	1558.9	9972	1557.5	9978	1557.5	10000	1558.5	10020	1562
10040	1562.6	10059	1564.5	10077	1564	10125	1563.5	10151	1563.1
10166	1562.6	10176	1562.7	10201	1562.2	10217	1563.1	10249	1563
10300	1563.1	10338	1563	10381	1563.2	10396	1563.1	10404	1562.3
10408	1563.1	10454	1563.1	10499	1563.1	10516	1564.1	10571	1565.5
10608	1566	10656	1565.9	10710	1565.8	10758	1565.6	10813	1564.7
10848	1564.3	10873	1564.8	10923	1565.1	10950	1570	10989	1570.8

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8530	.045	8705	.07	8805	.045	9879	.04	10059	.045
10396	.07	10499	.035						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9879	10059	1050	1134.1	1100	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10608	10989	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.86

INPUT
Description: CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW

Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8212	1556	8550	1554	8600	1553	8617	1553.4	8685	1552.4
8708	1551.6	8749	1551.5	8759	1550.6	8767	1551.7	8788	1552.1
8817	1551.5	8863	1554.3	8895	1555.1	8908	1555.4	8935	1555.1
8975	1555	9022	1555.5	9072	1556.1	9125	1556.9	9165	1557.1
9223	1557.3	9242	1556.6	9263	1557.3	9298	1557.4	9319	1557
9330	1556.1	9344	1553.5	9379	1552.5	9393	1551.4	9404	1552.9
9416	1552.7	9420	1551.9	9429	1553.3	9446	1553.2	9464	1549.8
9472	1549.3	9494	1549.8	9513	1553	9535	1553.6	9596	1553.4
9605	1552.9	9613	1553.3	9634	1553.5	9666	1553.4	9716	1553.2
9727	1552.5	9739	1553.4	9770	1552.6	9784	1553.6	9803	1553.4
9819	1551.8	9831	1551.2	9842	1552.5	9855	1551.1	9864	1553.3
9885	1553.3	9919	1551.8	9936	1549	9948	1549	9970	1551.6
9983	1550.4	9991	1547.6	10000	1546.3	10009	1551.6	10023	1554.6
10042	1555.7	10083	1555.6	10149	1554.3	10159	1550.9	10171	1552.6
10197	1554.4	10232	1554.7	10271	1556	10327	1557	10379	1557.5
10433	1557.7	10477	1557.5						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8212	.045	8685	.055	8817	.045	9446	.04	9513	.055
9885	.04	10042	.055	10149	.04	10197	.035		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9885	10042	1060	1049.1	1050	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.66

INPUT
Description:
Station Elevation Data num= 92

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8244	1548.4	8287	1548.9	8335	1549	8352	1548.3	8399	1548.2
8462	1548.3	8514	1548	8594	1547.5	8663	1546.9	8720	1546
8738	1545.8	8780	1544.9	8828	1544.1	8914	1543.6	8917	1543.1
8921	1543.7	8985	1544	9048	1544.6	9086	1545.1	9138	1545.3
9173	1546.1	9234	1546.5	9275	1546.3	9318	1546	9360	1545.7
9383	1545.3	9436	1545.1	9449	1544.5	9457	1545	9467	1544.1
9477	1545.4	9492	1544.9	9512	1543.5	9528	1540.2	9540	1540.5
9550	1542.2	9572	1546.6	9585	1546.4	9600	1542.7	9619	1542.8
9627	1543.3	9643	1542.4	9655	1543.1	9667	1546	9689	1546.6
9709	1546.7	9717	1546.1	9736	1546	9744	1544.6	9753	1546
9775	1545.3	9791	1546.1	9829	1546.1	9852	1547.5	9878	1547.5
9894	1546.7	9941	1546.7	9956	1545.9	9988	1544.6	10000	1542.1
10006	1542.3	10015	1543.9	10055	1543	10063	1543.5	10083	1546.5
10108	1546.6	10119	1546	10133	1547.2	10145	1546.3	10160	1547.2
10177	1546.2	10193	1546.6	10207	1546.1	10246	1546.4	10280	1546.8
10324	1547.3	10357	1547.3	10379	1546.7	10392	1545.6	10408	1543.2
10430	1543.9	10442	1542.9	10465	1542.6	10486	1548.6	10509	1549.3
10557	1549.5	10592	1549.8	10646	1549.9	10686	1549.4	10727	1549.5
10784	1549.4	10846	1549.5						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8244	.045	8828	.055	8985	.045	9477	.04	9667	.055
9941	.04	10083	.055	10357	.04	10486	.035		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9941	10083	500	549.1	540	.1	.3

CROSS SECTION RIVER: RIVER-1

REACH: Reach-1 RS: 13.55

INPUT
Description:
Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8416	1544.6	8496	1544.5	8598	1543.9	8689	1543.5	8797	1542.8
8877	1542.2	8929	1541.9	8950	1541.3	8963	1540.3	8985	1539.6
8993	1540.1	9040	1540.1	9081	1539.8	9104	1540.4	9157	1540
9241	1540.8	9311	1541.2	9346	1540.5	9443	1541	9451	1540.2
9464	1541.2	9477	1541	9510	1541.9	9558	1542.7	9592	1543.1
9645	1543.3	9688	1543.1	9715	1541.9	9736	1539.8	9742	1540.1
9757	1538.2	9776	1537.4	9787	1532.2	9804	1535.6	9828	1540.7
9836	1539.7	9855	1541.7	9877	1541.6	9897	1542	9930	1541.4
9965	1541.8	9988	1535.8	10000	1535.2	10010	1538.4	10031	1540.8
10045	1540.9	10054	1540.5	10065	1541.3	10098	1541.2	10123	1541.8
10132	1541.3	10150	1542.7	10176	1541.1	10191	1539.5	10208	1538.7
10219	1537.7	10233	1539.2	10262	1541.4	10270	1541.1	10283	1542
10307	1542.3	10349	1541.4	10370	1537.3	10380	1537.9	10394	1537
10403	1538.6	10432	1541	10456	1542.6	10494	1543	10550	1544.4
10623	1544.5	10680	1545	10743	1545.2	10802	1544.8	10856	1544.6
10907	1544.2	10973	1544.1	10985	1545.1	10993	1545.3		

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8416	.045	8929	.055	9104	.045	9715	.04	9828	.055
9965	.04	10031	.055	10150	.04	10262	.055	10349	.04
10456	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10031	740	787.3	850	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.4

INPUT
Description: Q100 INCREASED FROM 23300,23300 TO 26700,26700 CFS DUE TO UPSTREAM DEVELOPMENT.
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8520	1540	8940	1538	9105	1536	9155	1535	9197	1536
9202	1536.2	9212	1536	9214.5	1535.9	9217	1536	9287	1536.5
9359	1536	9414	1535.5	9474	1536	9641	1537.5	9670	1537.6
9692	1536.4	9719	1534.6	9732	1527.4	9748	1530.8	9770	1532.1
9782	1530	9800	1534.1	9820	1533.9	9840	1535.3	9849	1534.9
9866	1535.8	9908	1536.5	9939	1537.1	9968	1536.9	9980	1535.2
9994	1529	10000	1528.7	10010	1529.7	10033	1534.5	10063	1534.1
10084	1534.3	10102	1534.3	10133	1536	10164	1536.4	10177	1535
10194	1535.9	10209	1535.2	10246	1526.8	10252	1528.5	10269	1529.1
10289	1537.1	10319	1537.5	10361	1536.6	10379	1535.1	10395	1535.3
10422	1536	10447	1535.1	10465	1535.7	10514	1535.8	10539	1535.1
10600	1535	10653	1535.4	10687	1535.5	10726	1535	10744	1534.3
10772	1534.4	10797	1535.1	10833	1534.7	10874	1535.5	10910	1535.5
10944	1535.1	11001	1534.7	11027	1535.1	11043	1539	11070	1538.8
11080	1537.4	11101	1540.1	11142	1539.6				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8520	.045	9670	.04	9800	.045	9968	.04	10033	.055
10209	.04	10289	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968	10033	650	678.6	590	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.28

INPUT
Description: CROSS-SECTION AT WHICH FLOWS TO CAP OVERCHUTES 1 AND 2 RECOMBINE. WSEL MATCHES AT THIS CROSS-SECTION

Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8217	1536	8297	1534.9	8552	1534.2	8677	1534.3	8812	1534
8979	1532	9107	1530	9165	1529.3	9205	1530	9255	1532
9337	1532.2	9390	1531.5	9439	1531.5	9484	1530.1	9507	1525.7
9523	1526	9537	1529.8	9605	1530.1	9671	1530.9	9682	1530.2
9709	1530.4	9726	1531.2	9776	1531.3	9840	1530.4	9851	1529.7
9901	1530.9	9962	1531.6	9975	1530.6	9991	1522.9	10000	1522.6

10034	1522.9	10052	1530.4	10083	1530.6	10097	1527.4	10110	1531.2
10143	1531	10169	1531.2	10193	1532.3	10222	1532.9	10250	1532.2
10302	1532.2	10347	1532.2	10363	1531.6	10389	1532	10421	1531.1
10475	1531.1	10529	1531.1	10581	1529.7	10594	1530.3	10634	1530.6
10654	1530	10667	1530.5	10697	1529.9	10727	1531.7	10771	1532.2
10840	1532.9	10884	1533.5	10956	1533.9	10961	1533.3	10969	1534.6
10995	1534.9	11002	1534	11019	1533.5	11025	1534.9	11065	1535.4

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8217	.045	9107	.07	9205	.045	9484	.04	9537	.045
9962	.04	10052	.045						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9962 10052 0 0 0 .1 .3
Ineffective Flow num= 1
Sta L Sta R Elev
8217 9537

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach-1	13.28	26700.0	1522.6	1533.7	1533.7	1534.9	0.007372	12.7	3992.1	2106.5	0.8
Reach-1	13.28	26700.0	1522.6	1534.7	1533.7	1535.3	0.003203	9.0	5147.1	1265.0	0.5
Reach-1	13.4	26700.0	1528.7	1538.0		1538.4	0.004110	7.6	5603.8	2108.2	0.6
Reach-1	13.4	26700.0	1528.7	1537.6	1537.6	1539.1	0.012502	12.8	2820.6	932.0	1.0
Reach-1	13.55	26700.0	1535.2	1542.9	1542.8	1543.9	0.012939	11.7	3484.1	1578.2	1.0
Reach-1	13.55	26700.0	1535.2	1544.3		1544.8	0.004605	8.3	4646.5	1334.0	0.6
Reach-1	13.66	26700.0	1542.1	1548.0		1548.4	0.006349	7.0	4942.5	1965.2	0.6
Reach-1	13.66	26700.0	1542.1	1547.8	1547.7	1548.8	0.013974	10.1	3311.3	1427.0	1.0
Reach-1	13.86	26700.0	1546.3	1555.8	1555.5	1556.6	0.009343	9.8	4133.2	1741.9	0.8
Reach-1	13.86	26700.0	1546.3	1556.8	1555.7	1557.4	0.005205	8.3	4604.1	1329.2	0.6
Reach-1	14.07	26700.0	1557.5	1564.9		1565.5	0.007415	8.9	4884.3	2076.9	0.7
Reach-1	14.07	26700.0	1557.5	1564.7		1565.7	0.012262	11.1	3886.3	1724.0	0.9
Reach-1	14.3	26700.0	1559.6	1574.7	1574.7	1575.6	0.004784	11.0	5349.4	2262.8	0.6
Reach-1	14.3	26700.0	1559.6	1575.6	1575.6	1577.1	0.005707	12.7	3559.7	950.0	0.7
Reach-1	14.54	26700.0	1571.6	1582.6	1582.3	1584.6	0.011119	13.9	2736.6	539.0	0.9
Reach-1	14.54	26700.0	1571.6	1583.5		1584.9	0.006825	11.7	3205.4	530.0	0.7
Reach-1	14.74	26700.0	1581.7	1591.7		1593.2	0.005893	12.0	2941.3	785.8	0.7
Reach-1	14.74	26700.0	1581.7	1591.2		1593.6	0.009109	14.4	2209.3	400.0	0.9
Reach-1	14.89	26700.0	1583.2	1596.3	1596.3	1598.5	0.007794	14.1	2664.2	532.6	0.8
Reach-1	14.89	26700.0	1583.2	1597.1	1596.4	1598.9	0.005728	12.8	2848.6	483.7	0.7
Reach-1	15.06	26700.0	1591.3	1603.0		1604.3	0.005587	11.1	3362.9	770.8	0.7
Reach-1	15.06	26700.0	1591.3	1602.9		1604.8	0.007895	13.0	2540.5	418.0	0.8
Reach-1	15.12	26700.0	1595.8	1605.2	1605.2	1606.9	0.008722	12.7	2827.1	822.4	0.8
Reach-1	15.12	26700.0	1595.8	1605.4	1605.4	1608.2	0.012392	15.3	2082.6	376.0	1.0
Reach-1	15.22	26700.0	1598.9	1610.1		1612.2	0.009298	14.2	2563.0	603.1	0.9
Reach-1	15.22	26700.0	1598.9	1611.3		1612.6	0.004979	11.2	3098.1	523.0	0.7
Reach-1	15.41	26700.0	1607.6	1618.5	1616.7	1619.9	0.006912	11.8	2874.7	519.6	0.8
Reach-1	15.41	26700.0	1607.6	1617.6	1616.7	1619.5	0.010633	13.7	2470.3	381.6	0.9
Reach-1	15.55	26700.0	1613.4	1623.0		1625.0	0.007971	12.8	2480.1	532.1	0.8
Reach-1	15.55	26700.0	1613.4	1623.6		1626.6	0.009181	14.4	1976.6	292.0	0.9
Reach-1	15.75	26700.0	1616.3	1630.0	1629.3	1631.2	0.004898	11.2	3335.5	769.9	0.6
Reach-1	15.75	26700.0	1616.3	1630.9	1628.7	1631.8	0.003186	9.6	3712.7	639.0	0.5
Reach-1	15.89	26700.0	1626.8	1635.5	1635.5	1637.3	0.010358	13.7	2900.6	724.5	0.9

Reach-1	15.89	26700.0	1626.8	1636.7	1636.7	1639.4	0.010491	15.4	2300.1	393.0	0.9
Reach-1	16.07	26700.0	1634.3	1644.0		1646.0	0.008034	13.3	2658.2	520.5	0.8
Reach-1	16.07	26700.0	1634.3	1645.1		1647.1	0.006314	12.8	2669.9	370.0	0.7
Reach-1	16.19	26700.0	1637.5	1648.8		1650.3	0.006232	12.5	3314.3	763.7	0.7
Reach-1	16.19	26700.0	1637.5	1649.1		1651.2	0.007263	13.8	2699.1	470.6	0.8
Reach-1	16.27	26700.0	1639.4	1652.8	1652.8	1654.8	0.007406	14.2	3012.4	651.5	0.8
Reach-1	16.27	26700.0	1639.4	1653.7	1653.7	1657.0	0.009168	16.6	2064.0	284.0	0.9
Reach-1	16.49	26700.0	1653.3	1661.8		1663.1	0.006949	11.5	3055.0	654.6	0.8
Reach-1	16.49	26700.0	1653.3	1663.0		1664.1	0.004133	9.7	3396.4	524.0	0.6
Reach-1	16.68	26700.0	1662.3	1669.5		1670.3	0.005863	9.4	3701.5	660.6	0.7
Reach-1	16.68	26700.0	1662.3	1669.1		1670.1	0.007260	10.0	3451.7	650.0	0.7
Reach-1	16.86	27300.0	1670.5	1678.7	1678.7	1682.2	0.012826	14.9	1829.0	554.7	1.0
Reach-1	16.86	27300.0	1670.5	1678.8	1678.8	1682.2	0.012439	14.8	1846.7	270.2	1.0
Reach-1	16.865	Bridge									
Reach-1	16.87	27300.0	1669.9	1685.3	1679.1	1686.2	0.001538	7.6	3599.2	1921.0	0.4
Reach-1	16.87	27300.0	1669.9	1685.3	1679.1	1686.2	0.001535	7.6	3601.4	295.5	0.4
Reach-1	16.96	27300.0	1676.2	1686.0	1684.8	1687.7	0.006471	10.8	2853.9	1561.0	0.7
Reach-1	16.96	27300.0	1676.2	1685.9	1684.8	1687.8	0.006972	11.1	2514.7	456.0	0.8
Reach-1	17.06	27300.0	1678.2	1690.0		1691.3	0.005875	11.3	3824.1	1052.2	0.7
Reach-1	17.06	27300.0	1678.2	1690.1		1692.0	0.007948	13.3	3319.9	870.0	0.8
Reach-1	17.18	27300.0	1686.2	1695.3	1695.3	1697.0	0.009207	13.3	2865.4	857.2	0.9
Reach-1	17.18	27300.0	1686.2	1695.2		1697.1	0.009933	13.6	2710.9	749.1	0.9
Reach-1	17.3	27300.0	1692.2	1701.0		1702.8	0.009536	14.0	3450.5	1025.3	0.9
Reach-1	17.3	27300.0	1692.2	1701.1		1702.8	0.008791	13.6	3455.8	922.0	0.9
Reach-1	17.39	27300.0	1696.2	1705.5		1707.1	0.007567	11.5	3321.0	1127.4	0.8
Reach-1	17.39	27300.0	1696.2	1705.4		1707.2	0.008627	12.1	2985.7	713.0	0.8
Reach-1	17.48	27300.0	1702.2	1709.2		1711.0	0.010728	13.0	3061.3	955.5	0.9
Reach-1	17.48	27300.0	1702.2	1709.4		1711.1	0.009727	12.6	3044.6	851.1	0.9
Reach-1	17.57	27300.0	1702.2	1714.0	1714.0	1715.7	0.006889	12.5	3383.3	889.9	0.8
Reach-1	17.57	27300.0	1702.2	1714.0	1714.0	1715.8	0.007211	12.8	3160.3	746.5	0.8
Reach-1	17.65	27300.0	1704.2	1716.8		1719.2	0.007938	15.4	3109.2	901.9	0.8
Reach-1	17.65	27300.0	1704.2	1716.9		1719.1	0.007102	14.8	3204.0	846.3	0.8
Reach-1	17.78	27300.0	1713.4	1722.4		1723.3	0.005146	10.3	4128.1	960.6	0.7
Reach-1	17.78	27300.0	1713.4	1722.3		1723.2	0.005776	10.7	3948.9	935.9	0.7
Reach-1	17.84	27300.0	1718.2	1724.3	1724.3	1725.9	0.010563	12.0	2997.6	964.5	0.9
Reach-1	17.84	27300.0	1718.2	1724.3		1726.0	0.011067	12.2	2895.6	905.0	0.9
Reach-1	17.95	27300.0	1722.2	1730.1	1730.1	1731.8	0.010079	12.9	3058.4	900.3	0.9
Reach-1	17.95	27300.0	1722.2	1730.0	1730.0	1731.8	0.010395	13.0	2997.0	774.8	0.9
Reach-1	18.09	27700.0	1727.4	1734.8	1733.6	1735.5	0.004778	8.8	4967.6	1505.5	0.6
Reach-1	18.09	27700.0	1727.4	1735.0	1733.4	1736.0	0.005730	9.8	3825.4	715.0	0.7

Reach-1	18.16	27700.0	1728.8	1736.8		1738.2	0.011086	13.3	3310.4	988.8	0.9
Reach-1	18.16	27700.0	1728.8	1737.3		1738.8	0.009720	12.9	3096.9	651.4	0.9
Reach-1	18.23	27700.0	1730.0	1741.9	1741.9	1743.2	0.007537	13.6	4155.7	1317.0	0.8
Reach-1	18.23	27700.0	1730.0	1742.1	1742.1	1744.0	0.009024	15.2	3170.6	700.0	0.9
Reach-1	18.29	27700.0	1733.5	1743.9		1744.7	0.004053	9.6	4330.6	1144.3	0.6
Reach-1	18.29	27700.0	1733.5	1744.7		1745.4	0.003152	9.0	4223.5	700.0	0.5
Reach-1	18.49	27700.0	1741.7	1750.4	1750.4	1752.2	0.013275	14.9	2942.7	826.2	1.0
Reach-1	18.49	27700.0	1741.7	1751.0	1751.0	1753.0	0.012442	15.3	2790.5	643.0	1.0
Reach-1	18.57	27700.0	1744.4	1754.9	1754.3	1756.3	0.007411	12.6	3830.3	942.5	0.8
Reach-1	18.57	27700.0	1744.4	1755.5	1754.7	1756.8	0.006659	12.5	3719.7	780.0	0.8
Reach-1	18.74	27300.0	1755.0	1761.6		1762.5	0.008627	9.1	3672.8	1150.0	0.7
Reach-1	18.74	27300.0	1755.0	1761.8		1762.8	0.008591	9.3	3474.8	745.0	0.7
Reach-1	18.84	27300.0	1755.7	1765.8		1766.8	0.008925	9.8	3434.9	1098.3	0.7
Reach-1	18.84	27300.0	1755.7	1766.2		1767.6	0.011015	11.4	2973.6	564.0	0.8
Reach-1	18.96	27300.0	1762.2	1771.4		1772.6	0.011156	12.5	3848.2	1433.7	0.8
Reach-1	18.96	27300.0	1762.2	1772.1		1773.3	0.008747	11.8	3632.2	841.0	0.7
Reach-1	19.07	27300.0	1764.8	1776.4	1775.6	1777.0	0.004989	8.9	5141.1	1629.7	0.5
Reach-1	19.07	27300.0	1764.8	1776.7		1777.6	0.005675	9.7	4036.3	830.0	0.6
Reach-1	19.18	27300.0	1770.0	1780.8	1780.8	1782.4	0.014737	12.7	3008.3	841.6	0.9
Reach-1	19.18	27300.0	1770.0	1780.8		1782.5	0.015574	13.1	2857.3	748.7	0.9
Reach-1	19.26	27300.0	1773.0	1786.3	1785.4	1787.4	0.008109	12.2	3692.5	1603.0	0.7
Reach-1	19.26	27300.0	1773.0	1786.6	1785.4	1787.7	0.007961	12.2	3573.7	635.0	0.7
Reach-1	19.41	27300.0	1783.9	1791.5		1792.1	0.005506	7.7	4680.1	1058.7	0.5
Reach-1	19.41	27300.0	1783.9	1791.6		1792.2	0.005308	7.6	4623.5	950.0	0.5
Reach-1	19.52	27300.0	1786.2	1795.3		1796.6	0.012918	12.4	3104.6	713.8	0.8
Reach-1	19.52	27300.0	1786.2	1795.3		1796.6	0.012761	12.4	3110.4	680.0	0.8
Reach-1	19.62	27300.0	1790.3	1800.9		1801.9	0.007753	10.2	3513.9	778.8	0.6
Reach-1	19.62	27300.0	1790.3	1800.9		1801.9	0.007788	10.2	3506.5	746.8	0.6
Reach-1	19.72	27300.0	1795.1	1805.1		1806.3	0.009630	11.0	3296.5	762.2	0.7
Reach-1	19.72	27300.0	1795.1	1805.1		1806.3	0.009760	11.1	3227.2	725.0	0.7
Reach-1	19.83	27300.0	1799.3	1810.6		1812.2	0.010889	12.7	3093.2	704.2	0.8
Reach-1	19.83	27300.0	1799.3	1810.7		1812.3	0.010864	12.7	3026.8	650.0	0.8
Reach-1	19.92	27300.0	1802.0	1815.3		1816.2	0.006336	11.3	4245.3	1250.3	0.6
Reach-1	19.92	27300.0	1802.0	1815.6		1816.8	0.007262	12.3	3583.1	683.3	0.7
Reach-1	20.05	27300.0	1810.7	1820.0		1820.7	0.005355	10.3	4270.0	1030.8	0.7
Reach-1	20.05	27300.0	1810.7	1820.3		1821.0	0.004146	9.4	4653.7	1038.3	0.6
Reach-1	20.16	27300.0	1817.7	1824.7	1824.7	1826.1	0.009915	12.1	3210.2	1112.1	0.9
Reach-1	20.16	27300.0	1817.7	1824.7	1824.7	1826.2	0.009985	12.1	3146.3	1068.4	0.9
Reach-1	20.26	27300.0	1825.1	1830.6		1831.8	0.011227	10.0	3461.6	1176.6	0.9
Reach-1	20.26	27300.0	1825.1	1830.7		1831.9	0.011368	10.1	3380.2	1145.3	0.9

Reach-1	20.38	27300.0	1829.6	1835.9		1836.5	0.006481	8.6	4391.3	1251.5	0.7
Reach-1	20.38	27300.0	1829.6	1836.0		1836.6	0.006318	8.5	4391.0	1189.8	0.7
Reach-1	20.48	27300.0	1832.8	1841.1	1841.1	1842.3	0.009294	13.1	3721.4	1280.3	0.9
Reach-1	20.48	27300.0	1832.8	1841.6	1841.6	1843.2	0.009161	13.7	3314.1	906.0	0.9
Reach-1	20.62	27300.0	1839.3	1848.3		1849.8	0.009703	14.4	3549.5	1219.6	0.9
Reach-1	20.62	27300.0	1839.3	1849.1	1849.1	1850.6	0.007650	13.7	3321.4	885.0	0.8
Reach-1	20.64	27300.0	1842.0	1850.0		1850.7	0.004699	8.6	4669.4	1303.9	0.6
Reach-1	20.64	27300.0	1842.0	1850.5		1851.5	0.005735	10.0	3702.7	850.0	0.7
Reach-1	20.71	27300.0	1843.0	1853.2	1853.2	1854.4	0.006964	12.2	4191.8	1434.3	0.8
Reach-1	20.71	27300.0	1843.0	1853.8	1853.8	1855.5	0.007745	13.5	3187.8	810.0	0.8
Reach-1	20.79	27300.0	1847.5	1856.7		1857.5	0.006387	9.3	4504.5	1507.1	0.7
Reach-1	20.79	27300.0	1847.5	1857.5		1858.9	0.007595	11.1	3035.1	660.0	0.8
Reach-1	20.9	27300.0	1852.6	1862.7	1862.7	1864.0	0.006746	11.9	4010.9	1522.8	0.8
Reach-1	20.9	27300.0	1852.6	1863.0	1863.0	1865.0	0.008305	13.6	3025.1	670.0	0.9
Reach-1	20.98	27300.0	1853.2	1866.4	1866.4	1867.8	0.006276	11.8	3864.9	1374.1	0.8
Reach-1	20.98	27300.0	1853.2	1866.4	1866.3	1868.3	0.007334	12.8	3122.4	670.0	0.8
Reach-1	21.05	27300.0	1857.6	1869.7	1869.7	1871.2	0.005743	12.3	3930.8	1303.6	0.7
Reach-1	21.05	27300.0	1857.6	1869.8	1869.8	1871.8	0.006890	13.5	3172.2	695.0	0.8
Reach-1	21.11	27300.0	1860.5	1872.0	1872.0	1873.6	0.006251	12.5	3665.1	1023.3	0.8
Reach-1	21.11	27300.0	1860.5	1871.9		1873.9	0.007418	13.5	3182.1	775.0	0.8
Reach-1	21.18	27300.0	1865.0	1876.0	1876.0	1877.5	0.006016	12.3	3962.1	1446.8	0.8
Reach-1	21.18	27300.0	1865.0	1876.0	1876.0	1877.7	0.006886	12.9	3574.3	900.0	0.8
Reach-1	21.25	27300.0	1868.7	1881.1	1881.1	1882.5	0.004140	12.0	4562.2	1474.1	0.6
Reach-1	21.25	27300.0	1868.7	1881.3	1881.3	1883.3	0.005356	13.6	3442.2	745.0	0.7
Reach-1	21.31	27300.0	1870.7	1882.5		1883.8	0.005226	12.5	3878.4	947.8	0.7
Reach-1	21.31	27300.0	1870.7	1883.3		1884.7	0.004809	12.7	3661.4	650.0	0.7
Reach-1	21.35	27300.0	1871.5	1883.6	1883.6	1885.4	0.007351	16.2	3571.8	848.0	0.9
Reach-1	21.35	27300.0	1871.5	1884.3		1885.9	0.005957	15.2	3674.5	705.0	0.8
Reach-1	21.41	27300.0	1874.2	1887.4		1888.7	0.007771	16.3	3853.8	856.7	0.9
Reach-1	21.41	27300.0	1874.2	1887.4		1888.9	0.008305	16.9	3495.9	600.0	0.9
Reach-1	21.49	27300.0	1882.0	1891.5		1892.6	0.008681	10.5	3538.1	731.2	0.7
Reach-1	21.49	27300.0	1882.0	1891.6		1892.7	0.007598	10.0	3653.5	700.0	0.7
Reach-1	21.58	27300.0	1888.0	1895.6		1896.4	0.008699	8.9	4052.9	1308.9	0.7
Reach-1	21.58	27300.0	1888.0	1895.7		1897.2	0.014488	11.6	3038.3	840.0	0.9
Reach-1	21.63	27300.0	1888.5	1898.4		1899.4	0.011215	11.8	3930.7	1405.6	0.8
Reach-1	21.63	27300.0	1888.5	1899.3	1898.4	1900.1	0.006564	9.9	4243.4	1055.0	0.6
Reach-1	21.69	27300.0	1895.1	1902.1		1902.7	0.006164	8.3	4932.7	1419.8	0.6
Reach-1	21.69	27300.0	1895.1	1902.3		1903.0	0.008966	10.2	4306.8	1330.0	0.7
Reach-1	21.77	27300.0	1897.3	1905.5	1905.5	1907.1	0.015058	12.9	2890.2	929.1	0.9
Reach-1	21.77	27300.0	1897.3	1906.2	1905.5	1907.2	0.009710	11.2	3584.1	1357.7	0.8

Reach-1	21.82	27300.0	1900.5	1909.2		1910.3	0.010810	11.4	3654.2	1179.4	0.8
Reach-1	21.82	27300.0	1900.5	1909.1	1909.1	1910.4	0.013571	12.6	3303.0	1088.0	0.9
Reach-1	21.91	27300.0	1906.0	1913.8	1913.0	1914.6	0.008475	9.1	3881.6	1122.6	0.7
Reach-1	21.91	27300.0	1906.0	1914.4	1913.5	1915.4	0.008762	9.8	3484.2	1031.0	0.7
Reach-1	21.99	27300.0	1909.9	1917.8		1918.8	0.011966	10.4	3632.2	1401.7	0.8
Reach-1	21.99	27300.0	1909.9	1918.3		1919.3	0.010909	10.5	3616.2	1219.1	0.8
Reach-1	22.08	27300.0	1915.0	1922.3		1923.0	0.007558	8.1	4408.9	1542.5	0.7
Reach-1	22.08	27300.0	1915.0	1922.7		1923.6	0.008319	8.9	3660.2	1125.0	0.7
Reach-1	22.15	27300.0	1919.0	1925.2		1926.2	0.011163	8.6	3438.4	1190.6	0.8
Reach-1	22.15	27300.0	1919.0	1925.8		1927.0	0.011220	9.5	3200.5	968.8	0.8
Reach-1	22.22	27300.0	1921.5	1928.7		1930.2	0.012961	10.3	2799.1	772.0	0.8
Reach-1	22.22	27300.0	1921.5	1929.1		1930.7	0.011031	9.7	2731.1	668.8	0.8
Reach-1	22.29	27300.0	1925.5	1932.8		1933.8	0.007971	8.6	3481.1	1219.4	0.7
Reach-1	22.29	27300.0	1925.5	1933.1		1934.3	0.009152	9.7	3119.4	859.2	0.7
Reach-1	22.36	27300.0	1929.0	1936.7	1936.4	1938.2	0.012752	9.9	2836.7	1041.9	0.8
Reach-1	22.36	27300.0	1929.0	1937.2	1936.6	1938.5	0.010539	9.1	2938.9	781.9	0.8
Reach-1	22.43	27300.0	1934.0	1941.4		1942.0	0.007258	7.6	4403.4	1320.6	0.6
Reach-1	22.43	27300.0	1934.0	1942.2		1943.4	0.013801	11.7	3410.6	918.0	0.9
Reach-1	22.48	27300.0	1936.0	1943.8	1943.8	1945.2	0.019666	11.9	2921.0	1351.1	1.0
Reach-1	22.48	27300.0	1936.0	1945.1		1946.5	0.013071	11.5	3006.3	723.0	0.9
Reach-1	22.56	27300.0	1938.6	1948.4		1949.3	0.007049	9.7	3648.7	1101.2	0.7
Reach-1	22.56	27300.0	1938.6	1948.9		1950.1	0.007674	10.6	3135.7	635.0	0.7
Reach-1	22.67	27300.0	1944.5	1953.9	1953.9	1955.8	0.013689	14.0	2885.0	718.1	0.9
Reach-1	22.67	27300.0	1944.5	1954.4	1954.4	1956.5	0.013857	14.4	2711.7	575.0	0.9
Reach-1	22.73	27300.0	1947.0	1958.2		1959.7	0.010937	14.9	3552.5	914.7	0.9
Reach-1	22.73	27300.0	1947.0	1959.0	1959.0	1961.1	0.012507	16.3	2917.2	531.0	0.9
Reach-1	22.79	27300.0	1950.0	1961.2		1962.6	0.007901	12.2	3866.1	1007.8	0.7
Reach-1	22.79	27300.0	1950.0	1962.4		1963.7	0.005902	11.5	3709.3	660.0	0.7
Reach-1	22.86	24400.0	1953.5	1964.4		1965.8	0.009983	14.1	3376.7	970.3	0.8
Reach-1	22.86	24400.0	1953.5	1965.0		1966.3	0.008170	13.2	3294.6	742.0	0.8
Reach-1	22.96	24400.0	1959.6	1974.3	1974.3	1975.7	0.007932	13.9	3550.2	914.1	0.7
Reach-1	22.96	24400.0	1959.6	1974.5	1974.5	1976.7	0.010278	16.0	2940.3	514.8	0.8
Reach-1	23.13	24400.0	1969.8	1981.1		1983.0	0.009873	14.2	2922.8	781.3	0.8
Reach-1	23.13	24400.0	1969.8	1982.1		1983.9	0.007532	13.2	2849.2	561.0	0.7
Reach-1	23.25	24400.0	1977.3	1987.5		1989.0	0.009411	13.3	3284.1	746.9	0.8
Reach-1	23.25	24400.0	1977.3	1988.1	1988.1	1991.0	0.013198	16.6	2156.3	334.0	1.0
Reach-1	23.33	24400.0	1981.1	1991.3		1993.0	0.010010	13.2	2597.8	599.8	0.8
Reach-1	23.33	24400.0	1981.1	1993.3		1994.6	0.005903	11.1	2665.1	331.0	0.6
Reach-1	23.45	24400.0	1991.5	1998.8		2000.1	0.013137	12.9	2837.0	617.9	0.9
Reach-1	23.45	24400.0	1991.5	1998.6	1997.6	2000.1	0.014700	13.4	2544.0	465.0	0.9

Reach-1	23.55	24400.0	1997.0	2004.4		2005.6	0.009858	10.8	3009.3	781.2	0.8
Reach-1	23.55	24400.0	1997.0	2005.0		2006.7	0.011599	12.4	2553.4	467.0	0.9
Reach-1	23.64	12587.0	2000.0	2009.3		2010.2	0.007520	11.4	2244.6	766.3	0.7
Reach-1	23.64	12587.0	2000.0	2010.1		2010.7	0.004009	8.9	2777.5	662.0	0.5
Reach-1	23.87	12587.0	2008.8	2018.6		2020.3	0.009757	12.5	1546.0	538.8	0.8
Reach-1	23.87	12587.0	2008.8	2019.1	2019.1	2021.0	0.009459	12.7	1409.6	353.0	0.8
Reach-1	23.94	12587.0	2010.4	2022.2		2023.0	0.004833	8.4	2010.8	637.0	0.6
Reach-1	23.94	12587.0	2010.4	2022.7		2023.5	0.004175	8.2	2007.7	500.0	0.5
Reach-1	24.03	12587.0	2017.5	2025.0		2025.8	0.008255	8.6	1918.0	649.6	0.7
Reach-1	24.03	12587.0	2017.5	2025.7	2025.7	2028.0	0.018625	14.0	1067.7	223.0	1.0
Reach-1	24.12	12587.0	2020.6	2029.3	2029.3	2031.0	0.009008	10.9	1387.6	453.4	0.7
Reach-1	24.12	12587.0	2020.6	2030.8		2032.1	0.005041	9.2	1444.2	207.0	0.6
Reach-1	24.25	11837.0	2024.0	2035.1		2036.1	0.005949	9.7	1610.8	549.5	0.6
Reach-1	24.25	11837.0	2024.0	2035.1		2036.5	0.008062	11.2	1298.3	248.0	0.7
Reach-1	24.38	11837.0	2031.5	2039.2		2040.3	0.007709	9.9	1604.3	428.1	0.7
Reach-1	24.38	11837.0	2031.5	2039.8		2041.0	0.006341	9.6	1511.2	266.0	0.6
Reach-1	24.48	11837.0	2036.8	2043.7	2043.7	2045.1	0.012670	11.6	1365.1	472.2	0.9
Reach-1	24.48	11837.0	2036.8	2044.9	2044.9	2047.2	0.013734	13.5	1069.5	214.0	0.9
Reach-1	24.61	11837.0	2040.2	2050.4	2050.3	2051.5	0.006824	10.5	1888.2	715.7	0.7
Reach-1	24.61	11837.0	2040.2	2052.7	2051.7	2056.2	0.011980	15.0	789.5	79.0	0.8
Reach-1	24.74	11837.0	2045.8	2056.5	2056.5	2057.7	0.006595	9.7	1799.4	712.7	0.6
Reach-1	24.74	11837.0	2045.8	2059.5		2060.9	0.004257	9.4	1257.8	125.0	0.5
Reach-1	24.87	8811.0	2054.6	2062.1		2063.5	0.010180	10.4	1143.8	533.8	0.8
Reach-1	24.87	8811.0	2054.6	2063.4		2065.2	0.008709	11.0	865.5	151.0	0.7
Reach-1	24.95	8811.0	2057.4	2065.5		2066.1	0.004960	7.3	1500.6	363.9	0.5
Reach-1	24.95	8811.0	2057.4	2066.9		2068.1	0.006090	9.4	1019.9	180.0	0.6
Reach-1	25.12	8811.0	2064.7	2073.3	2073.3	2075.9	0.013629	13.0	742.7	464.7	0.9
Reach-1	25.12	8811.0	2064.7	2073.5		2075.9	0.012820	12.7	760.1	155.9	0.9
Reach-1	25.28	8811.0	2071.5	2082.2		2082.9	0.004514	8.1	1675.8	636.4	0.5
Reach-1	25.28	8811.0	2071.5	2082.7		2083.9	0.006337	9.9	1087.5	190.8	0.6
Reach-1	25.38	8811.0	2079.8	2085.1		2085.4	0.006636	5.7	2141.9	1280.5	0.6
Reach-1	25.38	8811.0	2079.8	2086.3		2086.6	0.003892	5.4	2182.5	646.0	0.5
Reach-1	25.45	8811.0	2084.8	2088.6	2088.6	2089.5	0.017255	7.8	1160.9	1058.7	0.9
Reach-1	25.45	8811.0	2084.8	2089.3	2089.3	2090.2	0.022397	10.3	1226.5	632.0	1.0
Reach-1	25.56	8811.0	2091.6	2095.7	2095.6	2096.4	0.008208	6.3	1421.4	1298.0	0.6
Reach-1	25.56	8811.0	2091.6	2096.0	2095.6	2096.5	0.006142	5.8	1596.5	807.8	0.6
Reach-1	25.63	8811.0	2095.2	2098.7		2099.2	0.007674	6.3	1444.4	711.9	0.6
Reach-1	25.63	8811.0	2095.2	2098.7		2099.7	0.012386	8.0	1146.4	413.2	0.8
Reach-1	25.69	8811.0	2098.0	2100.5		2100.8	0.004438	4.0	2064.4	1237.3	0.4
Reach-1	25.69	8811.0	2098.0	2101.6		2102.5	0.010605	7.8	1127.4	321.8	0.7

Reach-1	25.73	8811.0	2100.0	2103.9	2103.9	2105.8	0.018894	10.9	807.4	214.8	1.0
Reach-1	25.73	8811.0	2100.0	2103.9	2103.9	2105.8	0.018894	10.9	807.4	214.8	1.0
Reach-1	25.735	Bridge									
Reach-1	25.74	8811.0	2100.0	2106.4	2103.9	2107.1	0.003520	6.5	1351.0	230.1	0.5
Reach-1	25.74	8811.0	2100.0	2106.4	2103.9	2107.1	0.003550	6.5	1351.0	221.0	0.5
Reach-1	25.78	8811.0	2100.0	2107.1	2104.4	2107.8	0.003704	7.0	1266.4	1454.7	0.5
Reach-1	25.78	8811.0	2100.0	2107.1	2104.4	2107.8	0.003699	7.0	1267.0	193.3	0.5
Reach-1	25.83	8811.0	2105.1	2112.7	2112.7	2114.0	0.013761	10.5	1121.6	2119.7	0.9
Reach-1	25.83	8811.0	2105.1	2113.5	2113.5	2116.2	0.017412	13.0	675.7	126.0	1.0
Reach-1	25.95	8811.0	2110.4	2119.4		2120.3	0.007765	9.7	1383.6	2056.8	0.7
Reach-1	25.95	8811.0	2110.4	2121.3	2120.7	2123.3	0.007987	11.8	824.6	141.0	0.7
Reach-1	26.17	8811.0	2121.7	2132.7	2132.7	2133.8	0.009610	10.1	1337.9	597.1	0.7
Reach-1	26.17	8811.0	2121.7	2133.4	2133.3	2136.5	0.017100	14.2	618.9	96.0	1.0

ERRORS WARNINGS AND NOTES
Errors Warnings and Notes for Plan : Floodway Str

River: RIVER-1 Reach: Reach-1 RS: 26.17 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 26.17 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.95 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.95 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.83 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.83 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.78 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Cont. 100-yr

Warning:The flow regime calculated by the momentum equation shows class B flow. For the best solution, this profile should
be run as a mixed flow problem.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Cont. 100-yr Enc
Warning:The flow regime calculated by the momentum equation shows class B flow. For the best solution, this profile should
be run as a mixed flow problem.
River: RIVER-1 Reach: Reach-1 RS: 25.73 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 25.73 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.69 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.69 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.63 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.
River: RIVER-1 Reach: Reach-1 RS: 25.63 Profile: Cont. 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.
River: RIVER-1 Reach: Reach-1 RS: 25.56 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.56 Profile: Cont. 100-yr Enc
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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.45 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The 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.
River: RIVER-1 Reach: Reach-1 RS: 25.45 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.38 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.38 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.28 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.28 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.12 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.12 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.95 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.95 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.87 Profile: Cont. 100-yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.87 Profile: Cont. 100-yr Enc
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.74 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 24.74 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.61 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.61 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.48 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 24.48 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.38 Profile: Cont. 100-yr
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.

River: RIVER-1 Reach: Reach-1 RS: 24.38 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.25 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.25 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.12 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.12 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.03 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 24.03 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.94 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.94 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.87 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.87 Profile: Cont. 100-yr Enc

Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.64 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 23.64 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.55 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 23.55 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.45 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.45 Profile: Cont. 100-yr Enc
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.33 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.33 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.25 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.25 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.13 Profile: Cont. 100-yr

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.13 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.96 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.96 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.86 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.86 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.79 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.79 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.73 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.73 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.67 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.67 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.56 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.56 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.48 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The 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.
River: RIVER-1 Reach: Reach-1 RS: 22.48 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.43 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.43 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.36 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.36 Profile: Cont. 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.29 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.29 Profile: Cont. 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 22.22 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.22 Profile: Cont. 100-yr Enc

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.
River: RIVER-1 Reach: Reach-1 RS: 22.15 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.15 Profile: Cont. 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 22.08 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.08 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.99 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.99 Profile: Cont. 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 21.91 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.91 Profile: Cont. 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.82 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.82 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.77 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.77 Profile: Cont. 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.69 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

River: RIVER-1 Reach: Reach-1 RS: 21.69 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.63 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.63 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.58 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.58 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.49 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.49 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.41 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.41 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.35 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 21.35 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.31 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.31 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.25 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.25 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.18 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.18 Profile: Cont. 100-yr Enc
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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.11 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 21.11 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.05 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 21.05 Profile: Cont. 100-yr Enc
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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.98 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 20.98 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.9 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 20.9 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.79 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.79 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.71 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.71 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.64 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.64 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.62 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

River: RIVER-1 Reach: Reach-1 RS: 20.62 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.48 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.48 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.38 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.38 Profile: Cont. 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.26 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 20.26 Profile: Cont. 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 20.16 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.16 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.05 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 20.05 Profile: Cont. 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.92 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.92 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.83 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.83 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.72 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.72 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.62 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 19.62 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.52 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.52 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.41 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.41 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

River: RIVER-1 Reach: Reach-1 RS: 19.26 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.26 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.18 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.18 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.07 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.07 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.96 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.96 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.84 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 18.84 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.74 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.74 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.57 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.57 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.49 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.49 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.29 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.29 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.23 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.23 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.16 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.16 Profile: Cont. 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.09 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.09 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.95 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.95 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.84 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.84 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.78 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.78 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.65 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.65 Profile: Cont. 100-yr Enc

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.57 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.57 Profile: Cont. 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.48 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.48 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.39 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 17.39 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.3 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.3 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.18 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.18 Profile: Cont. 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 17.06 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.06 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.96 Profile: Cont. 100-yr

Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: RIVER-1 Reach: Reach-1 RS: 16.96 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.87 Profile: Cont. 100-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.87 Profile: Cont. 100-yr Enc
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Cont. 100-yr
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer
has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used
for pressure flow.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Cont. 100-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Cont. 100-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Cont. 100-yr Enc
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer
has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used
for pressure flow.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Cont. 100-yr Enc Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Cont. 100-yr Enc Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.86 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The 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, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.86 Profile: Cont. 100-yr Enc

Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.68 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.68 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.49 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.49 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.27 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 16.27 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 16.19 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.19 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.07 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

River: RIVER-1 Reach: Reach-1 RS: 16.07 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.89 Profile: Cont. 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 15.89 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 15.75 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.75 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.55 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.55 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.41 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: RIVER-1 Reach: Reach-1 RS: 15.41 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.22 Profile: Cont. 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.22 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.12 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 15.12 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.06 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.06 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.89 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 14.89 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.74 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.74 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

River: RIVER-1 Reach: Reach-1 RS: 14.54 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.54 Profile: Cont. 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.3 Profile: Cont. 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 14.3 Profile: Cont. 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 14.07 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 14.07 Profile: Cont. 100-yr Enc
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.86 Profile: Cont. 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 13.86 Profile: Cont. 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 13.66 Profile: Cont. 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.66 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.55 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.55 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.4 Profile: Cont. 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.4 Profile: Cont. 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.28 Profile: Cont. 100-yr
Warning:User specified water surface is not possible for the specified flow regime. The program used critical depth as the
starting water surface.
Warning:Divided flow computed for this cross-section.
River: RIVER-1 Reach: Reach-1 RS: 13.28 Profile: Cont. 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.

HEC-RAS Low Impact Structural Controlling100-year Peak Discharge Alternative Model

HEC-RAS September 1998 Version 2.2
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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

PROJECT DATA
Project Title: Watercourse Master Plan - Skunk Creek
Project File : WMP_SC.prj
Run Date and Time: 6/24/01 11:45:10 AM

Project in English units

Project Description:
Skunk Creek Watercourse Master Plan. Prepared for Skunk Creek from the CAP Canal to north of New River Road
by Stantec Consulting Inc. for ASL Consulting
and the Flood Control District of Maricopa County
FCD: 99-23

Project Start Date:October 1999

This
HEC-RAS model is based on HEC-2 models prepared by Montgomery Watson , Erie and Associates, and Hoskin Engineering Consultants. Montgomery Watson and Erie and Associates models reffect the FIS effective model for FEMA. Hoskins Engineering Counsultants model reflect a CLOMR submiital to FEMA (Case No. 99-09-592R, date of submittal responce 6/2/99).

PLAN DATA

Plan Title: Low Impact Structural Alt. 100-yr Controlling
Plan File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.p05

Geometry Title: Low Impact Structural Alt.
Geometry File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.g05

Flow Title : Low Impact Structural Alt. Controlling Q 100
Flow File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.f05

Plan Description:
Plan for Low Impact Structural Alt. 100-yr Q Controlling
Phase I and Phase
2
Use Profile 2 for results.

Plan Summary Information:

Number of:	Cross Sections	= 122	Mulitple Openings	=	0
	Culverts	= 0	Inline Weirs	=	0
	Bridges	= 2			

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

Computation Options
Critical depth computed at all cross sections
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

Encroachment Data
Equal Conveyance = True
Left Offset = 0
Right Offset = 0

River = RIVER-1 Reach = Reach-1

RS	Profile	Method	Value1	Value2
26.17	Ex 100-yr Enc	1	9897.07	10486.26
25.95	Ex 100-yr Enc	1	9841.65	10675.33
25.83	Ex 100-yr Enc	1	9816.88	11273.1
25.78	Ex 100-yr Enc	1	9703.81	10023.43
25.73	Ex 100-yr Enc	1	9644.25	11011.22
25.69	Ex 100-yr Enc	1	9405.99	10746.17
25.63	Ex 100-yr Enc	1	9184.99	10584.76
25.56	Ex 100-yr Enc	1	9183.39	10504.07
25.45	Ex 100-yr Enc	1	9301.45	10674.66
25.38	Ex 100-yr Enc	1	9016.73	10316.85
25.28	Ex 100-yr Enc	1	9102.14	10054.51
25.12	Ex 100-yr Enc	1	9737.03	10271.01
24.95	Ex 100-yr Enc	1	9857.51	0282.36
24.87	Ex 100-yr Enc	1	9643.61	0158.01
24.74	Ex 100-yr Enc	1	9685.53	10214.29
24.61	Ex 100-yr Enc	1	9546.28	10300.32
24.48	Ex 100-yr Enc	1	9602.24	10099.65
24.38	Ex 100-yr Enc	1	9713.16	10126.88
24.25	Ex 100-yr Enc	1	9801	10216.64
24.12	Ex 100-yr Enc	1	9811.21	0121.88
24.03	Ex 100-yr Enc	1	9833.39	10288.25
23.94	Ex 100-yr Enc	1	9525.69	10148.97
23.87	Ex 100-yr Enc	1	9607.51	0137.13
23.64	Ex 100-yr Enc	1	9072.71	0131.91
23.55	Ex 100-yr Enc	1	9472.87	10209.43
23.45	Ex 100-yr Enc	1	9778.05	10371.07
23.33	Ex 100-yr Enc	1	9753.83	10350.19
23.25	Ex 100-yr Enc	1	9667.75	10432.31
23.13	Ex 100-yr Enc	1	9534.19	10233.54
22.96	Ex 100-yr Enc	1	9482.83	10046.26
22.86	Ex 100-yr Enc	1	9434.93	10189.4
22.79	Ex 100-yr Enc	1	9412.02	10204.06
22.73	Ex 100-yr Enc	1	9386.37	10152.35
22.67	Ex 100-yr Enc	1	9381.96	10171.18
22.56	Ex 100-yr Enc	1	9455.11	0415.32
22.48	Ex 100-yr Enc	1	9094.36	10343.98
22.43	Ex 100-yr Enc	1	8968.41	0281.25
22.36	Ex 100-yr Enc	1	9040.92	10627.7
22.29	Ex 100-yr Enc	1	8954.63	10451.76
22.22	Ex 100-yr Enc	1		10265.68
22.15	Ex 100-yr Enc	1	8517.21	0161.36
22.08	Ex 100-yr Enc	1	8744.04	10325.77
21.99	Ex 100-yr Enc	1		10339.07
21.91	Ex 100-yr Enc	1	8803.04	
21.82	Ex 100-yr Enc	1	8678.27	10245.52
21.77	Ex 100-yr Enc	1	8687.88	10180.32
21.69	Ex 100-yr Enc	1		10297.48
21.63	Ex 100-yr Enc	1	9128.32	10548.58
21.58	Ex 100-yr Enc	1	9356.63	10479.88
21.49	Ex 100-yr Enc	1	9609.49	10411.98
21.41	Ex 100-yr Enc	1	9380.68	10118.89
21.35	Ex 100-yr Enc	1	9311.06	10135.11
21.31	Ex 100-yr Enc	1	9262.11	0124.84
21.25	Ex 100-yr Enc	1	9220.79	10499.39
21.18	Ex 100-yr Enc	1	9210.31	10226.73
21.11	Ex 100-yr Enc	1	9296.62	10200.51
21.05	Ex 100-yr Enc	1	9354.21	10291.83
20.98	Ex 100-yr Enc	1	9401.32	10398.68
20.9	Ex 100-yr Enc	1	9482.31	0484.83
20.79	Ex 100-yr Enc	1	9430.07	10560.28

20.71	Ex 100-yr Enc	1	9413.29 10478
20.64	Ex 100-yr Enc	1	9481.18 10441.3
20.62	Ex 100-yr Enc	1	9496.6410428.14
20.48	Ex 100-yr Enc	1	9432.4610490.86
20.38	Ex 100-yr Enc	1	9208.6710479.91
20.26	Ex 100-yr Enc	1	9203.8210480.69
20.16	Ex 100-yr Enc	1	9179.7810575.74
20.05	Ex 100-yr Enc	1	10565.8
19.92	Ex 100-yr Enc	1	9679.1810474.96
19.83	Ex 100-yr Enc	1	9711.0710421.19
19.72	Ex 100-yr Enc	1	891710554.22
19.62	Ex 100-yr Enc	1	9790.7310682.69
19.52	Ex 100-yr Enc	1	9767.5610621.35
19.41	Ex 100-yr Enc	1	9658.9210657.42
19.26	Ex 100-yr Enc	1	925810210.63
19.18	Ex 100-yr Enc	1	9170.2910221.66
19.07	Ex 100-yr Enc	1	9218.7810325.51
18.96	Ex 100-yr Enc	1	9436.5610469.18
18.84	Ex 100-yr Enc	1	9462.7110171.93
18.74	Ex 100-yr Enc	1	924510200.74
18.57	Ex 100-yr Enc	1	9630.2110640.67
18.49	Ex 100-yr Enc	1	9733.0110634.52
18.29	Ex 100-yr Enc	1	9577.4710290.32
18.23	Ex 100-yr Enc	1	9555.2410359.96
18.16	Ex 100-yr Enc	1	9706.9510555.62
18.09	Ex 100-yr Enc	1	9863.3110783.64
17.95	Ex 100-yr Enc	1	9803.8510764.51
17.84	Ex 100-yr Enc	1	9727.0810668.14
17.78	Ex 100-yr Enc	1	9630.31 10592.5
17.65	Ex 100-yr Enc	1	9412.4710275.26
17.57	Ex 100-yr Enc	1	9497.4710266.61
17.48	Ex 100-yr Enc	1	9484.810354.99
17.39	Ex 100-yr Enc	1	9525.6310473.53
17.3	Ex 100-yr Enc	1	9593.4410554.57
17.18	Ex 100-yr Enc	1	9760.6710685.55
17.06	Ex 100-yr Enc	1	9582.9410485.75
16.96	Ex 100-yr Enc	1	9129.3710459.32
16.87	Ex 100-yr Enc	1	9315.510948.94
16.86	Ex 100-yr Enc	1	10978.26
16.68	Ex 100-yr Enc	1	9915 10647
16.49	Ex 100-yr Enc	1	9790 10535
16.27	Ex 100-yr Enc	1	9355 10155
16.19	Ex 100-yr Enc	1	9315 10170
16.07	Ex 100-yr Enc	1	9610 10220
15.89	Ex 100-yr Enc	1	9355 10300
15.75	Ex 100-yr Enc	1	947710198.22
15.55	Ex 100-yr Enc	1	978510360.78
15.41	Ex 100-yr Enc	1	9805 10501.9
15.22	Ex 100-yr Enc	1	986510551.19
15.12	Ex 100-yr Enc	1	979510538.65
15.06	Ex 100-yr Enc	1	973210503.38
14.89	Ex 100-yr Enc	1	9525 10190
14.74	Ex 100-yr Enc	1	961510308.01
14.54	Ex 100-yr Enc	1	9560 10500
14.3	Ex 100-yr Enc	1	8665 10895
14.07	Ex 100-yr Enc	1	8620 10605
13.86	Ex 100-yr Enc	1	8255 10295
13.66	Ex 100-yr Enc	1	8528 10565
13.55	Ex 100-yr Enc	1	8785 10655
13.4	Ex 100-yr Enc	1	8895 11045
13.28	Ex 100-yr Enc	1	8915 10820

FLOW DATA

Flow Title: Low Impact Structural Alt. Controlling Q 100
Flow File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.f05

Flow Data (cfs)

River	Reach	RS	Ex 100-yr	Ex 100-yr Enc
RIVER-1	Reach-1	26.17	8811	8811
RIVER-1	Reach-1	24.74	11837	11837
RIVER-1	Reach-1	24.12	12587	12587
RIVER-1	Reach-1	23.55	24400	24400
RIVER-1	Reach-1	22.79	27300	27300
RIVER-1	Reach-1	18.57	27700	27700
RIVER-1	Reach-1	17.95	27300	27300
RIVER-1	Reach-1	16.68	26700	26700

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
RIVER-1	Reach-1	Ex 100-yr		Known WS = 1533.7
RIVER-1	Reach-1	Ex 100-yr Enc		Known WS = 1533.7

GEOMETRY DATA

Geometry Title: Low Impact Structural Alt.
Geometry File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.g05

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 26.17

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9940	2138.3	9957	2136.6	9967	2132.3	9980	2122.5	9988	2121.9
10000	2121.7	10020	2128.2	10039	2129.9	10063	2131.5	10085	2131.2
10098	2131.5	10122	2130.8	10141	2129.5	10155	2130.1	10165	2130.2
10194	2131.5	10227	2131.8	10274	2131.3	10286	2130.2	10302	2128.2
10313	2129.3	10335	2130.8	10373	2131.2	10391	2129.7	10403	2128.3
10418	2129.7	10448	2132.6	10472	2131.9	10501	2132.9	10535	2133.3
10566	2133.4	10609	2132.5	10640	2131.9	10651	2131.7	10668	2132.7
10720	2134.4	10759	2135.1	10820	2136.1	10860	2136.5	10933	2136
10948	2136.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9940	.045	9967	.045	10063	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr	Expan.
9967	10063	1225	1132	1040	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10472	10948	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.95

INPUT
Description:
Station Elevation Data num= 81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9254	2123.2	9297	2119.8	9322	2117.2	9353	2116.1	9368	2116.6
9416	2115.7	9426	2115.9	9474	2115.4	9487	2112.1	9494	2114.1
9507	2113.7	9517	2111.4	9520	2111.4	9529	2115	9568	2116.1
9609	2115.2	9623	2114	9634	2115.1	9657	2115.8	9681	2116.6
9694	2115.6	9727	2116.5	9777	2117.5	9802	2117.4	9841	2117.8
9912	2117.6	9923	2119	9936	2118.9	9941	2117.6	9969	2117.5
9986	2118.1	10000	2110.8	10020	2110.4	10032	2113.5	10046	2114.2
10057	2117.7	10072	2119.5	10096	2119.9	10103	2119.4	10132	2119.1
10144	2117.6	10154	2117.5	10169	2119.2	10217	2119.1	10258	2118.1
10282	2118.8	10315	2118.9	10363	2118.6	10380	2116.5	10387	2116.4
10398	2117.4	10425	2117.6	10461	2117.2	10490	2116.9	10512	2116
10538	2116.2	10580	2115.9	10593	2116.3	10616	2116.8	10644	2116.5
10658	2116.2	10680	2116.1	10729	2116.1	10781	2115.9	10829	2115.7
10882	2115.5	10993	2115.9	11030	2115.8	11108	2115	11161	2114.4
11189	2113.5	11205	2110.3	11222	2110.5	11235	2112.9	11242	2109.1
11249	2109.1	11264	2112.8	11290	2114.5	11327	2117	11367	2118.6
11510	2123.3								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9254	.045	9681	.035	9986	.045	10057	.055	10363	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986	10057	600	620.6	625	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9254	9923		10616	11510	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.83

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9211	2114.5	9263	2109.9	9290	2108.9	9328	2107.8	9372	2106.5
9395	2103.6	9420	2106.3	9450	2108.1	9502	2109.1	9536	2108.8
9569	2109.2	9592	2108.7	9604	2107.9	9618	2108.9	9668	2109.6
9705	2110.4	9758	2110.5	9812	2111	9853	2110.6	9906	2110.8
9914	2111.8	9938	2110.2	9966	2108.1	10000	2106	10012	2105.1
10025	2105.3	10040	2112.7	10048	2111	10092	2111.1	10157	2110.8
10190	2109.6	10217	2110.4	10245	2109.9	10299	2110.7	10312	2113
10327	2113.3	10343	2113.7	10361	2113.6	10375	2113.1	10387	2111.3
10441	2111.1	10482	2110.5	10503	2110.8	10535	2111.1	10556	2110.7
10612	2110	10639	2108.4	10665	2109.7	10700	2110.1	10738	2109.5
10759	2108.4	10779	2108.1	10805	2108.8	10831	2109.2	10856	2108.6
10900	2109.7	10946	2110.1	10987	2109.6	11018	2109.2	11025	2109.6
11062	2109	11099	2108.7	11124	2108.2	11135	2106.6	11149	2108.1
11202	2106.3	11211	2104.6	11220	2104.6	11228	2107	11262	2108
11305	2109.4	11347	2110.1	11359	2110.5	11456	2114		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9211	.055	9502	.045	9914	.045	10040	.055	10299	.035
10387	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9914	10040	220	250	350	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9211	9914		10327	11456	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.78

INPUT
Description: Modified river to add a trapz. section
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9155	2110	9185	2108	9215	2106	9245	2104	9275	2102
9290	2102	9325	2104	9380	2105	9435	2104	9493	2105
9558	2104.5	9580	2106	9660	2107.5	9765	2107	9795	2108
9903	2108	9919	2100	10000	2100	10084	2100	10100	2108
10110	2110	10139	2111.77	10158	2112.14	10177	2111.84	10200	2110
10210	2108	10370	2106	10625	2106	10720	2104	10775	2104
10800	2102	10821	2102	10839	2103	10858	2102	10868	2102
10915	2104	10955	2102	10970	2100	10980	2100	11015	2102
11040	2104	11075	2106	11105	2108	11175	2110		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9155	.055	9380	.045	9903	.045	10110	.035	10210	.045
10625	.055	10915	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9903	10110	195	195	195	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9155	9903.58	2112.33	10158	11175	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.74

INPUT
Description: Modified to allow flow in all cells in bridge.
Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9889.9	2111.64	9889.9	2105	9894.9	2105	9903	2100	10100	2100
10105	2102	10115	2105	10120	2105	10120	2113.27		

Manning's n Values num= 1

Sta	n Val
9889.9	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9889.9	10120	84	84	84	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9889.9	9894.83	2113.46	10115	10120	

BRIDGE RIVER: RIVER-1

```
REACH: Reach-1            RS: 25.735

INPUT
Description: New River Bridge
Distance from Upstream XS =       0
Deck/Roadway Width        =      84
Weir Coefficient          =     2.6
Bridge Deck/Roadway Skew  =       0
Upstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  9877.9 2109.73    2100 9888.38 2109.82    2100 9888.38 2111.64    2100
  9889.9  2111.7 2105.84    9903 2111.83 2105.84  9927.1 2111.83 2105.84
 10072.9 2113.27 2107.28   10105 2113.27 2107.28   10120 2111.73 2107.28
 10122.1 2111.73    2100

Upstream Bridge Cross Section Data
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9889.9 2111.64  9889.9    2105  9894.9    2105    9903    2100   10100    2100
   10105    2102   10115    2105   10120    2105   10120 2113.27

Manning's n Values        num=       1
     Sta   n Val
  9889.9    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
        9889.9   10120             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
  9889.9 9894.83 2113.46   10115   10120

Downstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  9877.9 2109.73    2100 9888.38 2109.82    2100 9888.38 2111.64    2100
  9889.9  2111.7 2105.84    9903 2111.83 2105.84  9927.1 2111.83 2105.84
 10072.9 2113.27 2107.28   10105 2113.27 2107.28   10120 2111.73 2107.28
 10122.1 2111.73    2100

Downstream Bridge Cross Section Data
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9889.9 2111.64  9889.9    2105  9894.9    2105    9903    2100   10100    2100
   10105    2102   10115    2105   10120    2105   10120 2113.27

Manning's n Values        num=       1
     Sta   n Val
  9889.9    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
        9889.9   10120             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
  9889.9 9894.83 2113.46   10115   10120

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 Piers =  4

Pier Data
Pier Station     Upstream=  9927.1    Downstream=  9927.1
Upstream     num=       2
    Width   Elev    Width   Elev
        3   2098        3   2109
Downstream     num=       2
    Width   Elev    Width   Elev
        3   2098        3   2109

Pier Data
Pier Station     Upstream=  9975.7    Downstream=  9975.7
Upstream     num=       2
    Width   Elev    Width   Elev
        3   2098        3   2109
Downstream     num=       2
```

```
    Width   Elev    Width   Elev
       3    2098       3    2109

Pier Data
Pier Station     Upstream= 10024.3    Downstream= 10024.3
Upstream     num=        2
    Width   Elev    Width   Elev
       3    2098       3    2109
Downstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109

Pier Data
Pier Station     Upstream=10072.29    Downstream=10072.29
Upstream     num=        2
    Width   Elev    Width   Elev
       3    2098       3    2109
Downstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum                Cd   =      1.2
       Yarnell                 KVal =       .9
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =       .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.73

INPUT
Description: Modified to have flow in all the cell of the bridge.
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9889.9 2111.64  9889.9    2105  9894.9    2105    9903    2100   10100    2100
   10105    2102   10115    2105   10120    2105   10120 2113.27

Manning's n Values        num=       1
     Sta   n Val
  9889.9    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9889.9   10120              200     200     200              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
  9889.9 9894.83 2113.46   10115   10120

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.69

INPUT
Description: Modified cross-section, beginning of training dike for the west
             side
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9130    2104    9180    2102    9225    2100    9280    2098    9290    2096
    9300    2094    9320    2094    9330    2096    9340    2098    9460    2100
    9630    2100    9660    2102    9720    2104    9730    2106    9795    2108
    9801 2109.08    9820 2109.48    9839 2109.21    9865    2108    9875    2106
    9880    2104    9885    2102    9894    2098    9990    2098   10010    2098
   10202    2098   10210    2103   10340    2100   10430    2098   10515    2096
   10550    2096   10575    2098   10650    2099   10670    2098   10685    2096
   10710    2096   10765    2098   10810    2100   10835    2102   10880    2104
   10890    2104

Manning's n Values        num=       7
```

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9130	.055	9460	.045	9630	.035	9885	.045	10210	.055
10430	.045	10765	.035						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9885 10210 250 250 250 .3 .5
Ineffective Flow num= 1

Sta L	Sta R	Elev
9130	9820	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.63

INPUT
Description: Modified x-section
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9056	2104.7	9103	2102.4	9143	2100.5	9174	2098.6	9198	2095.5
9214	2092.8	9227	2089.7	9244	2090.3	9261	2093.5	9275	2094.7
9289	2095.8	9335	2097.9	9384	2099.1	9438	2099.6	9493	2099.9
9543	2100.2	9596	2100.5	9624	2100.9	9647	2106.9	9662	2107.2
9693	2106.8	9707	2106.2	9728	2102.4	9762	2101.7	9788	2101.2
9832	2101.2	9886	2101.1	9904	2100.3	9919	2098.8	9934	2098.6
9939	2101	9948	2096	9954	2095.4	9965	2095.2	10131.6	2095.2
10150	2099.8	10155	2099.8	10209	2099.6	10251	2099.2	10299	2098
10317	2096.3	10334	2097.8	10367	2097.6	10381	2097	10417	2096.4
10431	2093	10444	2093	10458	2094.6	10468	2094.7	10477	2095.1
10487	2096.5	10508	2096.8	10530	2093.2	10540	2093.3	10570	2096.9
10603	2101.2	10627	2104.4						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9056	.055	9335	.045	9624	.035	9939	.045	10131.6	.055
10417	.045	10570	.035						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9939 10150 375 365.7 350 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev
9056	9707	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.56

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8984	2100.4	9019	2098.8	9059	2098	9098	2096	9131	2094
9168	2093	9193	2092.3	9224	2089.6	9237	2086.1	9256	2085.5
9268	2087.2	9288	2092.9	9307	2094.5	9336	2095.3	9368	2095.4
9413	2095.2	9460	2095	9487	2095	9519	2094.8	9538	2094.4
9554	2098.2	9566	2098.6	9595	2098.5	9608	2097.9	9624	2095
9642	2094.1	9652	2095.3	9680	2096.3	9687	2095.9	9706	2096.2
9716	2095.4	9745	2095.2	9777	2094.6	9800	2094.9	9817	2094.6
9823	2093.7	9842	2094.9	9883	2094.8	9898	2095.2	9927	2095.2
9952	2094.7	9968	2092.3	9977	2091.6	9996	2091.8	10000	2091.9
10010	2095.6	10048	2095.6	10094	2095.1	10121	2093.8	10134	2094.6
10169	2094.8	10215	2094	10221	2093.5	10231	2094.1	10277	2094.3
10298	2094.6	10305	2094	10315	2094.7	10348	2094.9	10375	2094.8
10390	2092.6	10406	2086	10413	2085.6	10422	2086.2	10446	2091
10478	2093	10511	2094.8	10542	2096.6	10564	2097.9		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8984	.055	9307	.045	9538	.035	9680	.055	9952	.045
10010	.055	10390	.045	10446	.035				

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9952 10010 535 583.5 600 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev
8984	9608	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.45

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

9124	2092.6	9188	2091	9236	2089.7	9290	2088.1	9314	2086.9
9329	2085.1	9367	2084.6	9383	2081	9394	2081	9412	2083.6
9434	2085.2	9464	2086.6	9517	2087.6	9557	2088.1	9570	2088
9600	2088.4	9633	2089.3	9650	2088.7	9679	2088.5	9715	2088.2
9731	2088.9	9761	2089.3	9775	2089.8	9813	2090.2	9861	2090.2
9909	2089.6	9941	2088.8	9966	2088.8	9975	2085.1	10000	2084.8
10010	2086.9	10026	2086.9	10038	2088.5	10053	2086.9	10072	2087.9
10093	2088.3	10113	2088.1	10127	2084.7	10132	2084.6	10148	2087.4
10182	2088	10230	2088.5	10266	2088.2	10301	2087.8	10312	2085.6
10322	2087.2	10347	2087.7	10374	2087.3	10388	2086.2	10394	2086.2
10414	2087.9	10440	2088.5	10488	2089	10513	2088.4	10533	2086.7
10551	2086.8	10575	2085.6	10598	2082	10615	2081.7	10641	2082.7
10653	2087.7	10679	2089.2	10705	2089.8	10742	2090.3	10771	2091.5
10780	2090.5	10793	2092.7						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9124	.055	9434	.045	9517	.035	9861	.045	9966	.045
10038	.055	10575	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9966	10038	375	362.2	375	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9124	9861	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.38

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8816	2090.3	8849	2088.6	8903	2087.3	8954	2085.3	9005	2083.9
9032	2082.6	9045	2082.1	9053	2082.7	9066	2082.1	9076	2080.1
9083	2080	9098	2081.8	9126	2081.8	9174	2083.8	9211	2084.9
9235	2085.4	9244	2085.7	9247	2084.8	9262	2085.9	9276	2086
9287	2085.7	9308	2085	9333	2084.6	9379	2084.1	9415	2083.9
9447	2083.6	9487	2082.2	9510	2081.2	9523	2081.6	9549	2082
9565	2081.8	9571	2082.4	9601	2082.5	9624	2082.8	9672	2083.3
9697	2083.3	9725	2082.4	9760	2083.4	9775	2084.1	9795	2084
9810	2083.4	9830	2084.8	9865	2084.7	9873	2081.6	9883	2081.7
9892	2082.7	9910	2083.3	9940	2082.8	9952	2080.6	9967	2082.1
9984	2080.3	10000	2079.8	10012	2083.8	10026	2083.2	10037	2083.3
10071	2081.7	10085	2081.5	10094	2084	10109	2084.6	10140	2084.3
10152	2082.2	10162	2084.6	10174	2084	10194	2080.9	10203	2084.5
10236	2084.5	10262	2078.2	10281	2078.9	10296	2084.1	10336	2085.8
10404	2087	10466	2089.1	10498	2089.3	10528	2090.7	10546	2091.2

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8816	.055	9174	.045	9244	.035	9287	.055	9697	.07
9865	.045	10012	.07	10236	.045	10296	.055		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9865	10012	255	538.7	760	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8816	9287	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.28

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8848	2089.8	8893	2088.3	8943	2087.1	8997	2086.2	9033	2085
9077	2083.4	9099	2081.8	9134	2081.2	9154	2080.2	9166	2078.5
9174	2078	9181	2080.2	9199	2080.4	9222	2081.1	9234	2082.1
9269	2082.8	9292	2084.1	9320	2085	9323	2084.5	9330	2084.8
9337	2085.5	9360	2085.8	9378	2085.7	9386	2084.3	9409	2084
9433	2083.4	9450	2082.5	9487	2082	9498	2082.2	9523	2082.7
9552	2082.6	9577	2082.3	9606	2081.3	9632	2079.8	9648	2079.1
9657	2079.9	9675	2080.1	9687	2078.5	9707	2079.9	9725	2079.3
9767	2079.4	9791	2079.5	9807	2079	9838	2079.3	9849	2078.9
9887	2078.6	9899	2077.3	9919	2078.7	9954	2078.7	9965	2077.8
9978	2075.1	9995	2072.6	10000	2072.3	10014	2071.5	10024	2074
10052	2089.4	10060	2090.5						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8848	.055	9320	.035	9378	.055	9954	.045	10052	.045

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9954 10052 950 867.5 715 .3 .5
Ineffective Flow num= 1

Sta L	Sta R	Elev
8848	9552	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.12

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9560	2078.3	9570	2077.5	9586	2077.5	9612	2076.9	9632	2076.2
9637	2077.3	9654	2074.7	9667	2074.1	9676	2075.1	9703	2074.3
9721	2072.5	9740	2071.6	9774	2069.4	9798	2066.9	9819	2069.4
9826	2068.6	9836	2069.9	9855	2071	9872	2071.7	9903	2074.9
9928	2074.9	9949	2073.5	9976	2066.7	9985	2066.2	10000	2064.7
10008	2065.2	10033	2065	10053	2070.6	10079	2072.1	10092	2071.5
10104	2072.4	10113	2075.3	10125	2075	10138	2071.2	10173	2073
10184	2072.5	10211	2072	10240	2072.3	10242	2077.9	10253	2072.5
10267	2072.4	10289	2075.6	10312	2082.4				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9560	.055	9949	.045	10053	.07

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9949 10053 900 867.7 800 .1 .3
Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9560	9928		10113	10312	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.95

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9846	2075.2	9874	2073.3	9901	2070	9920	2064.7	9939	2064.6
9953	2064.3	9975	2063.7	9989	2057.4	10000	2057.7	10007	2059.4
10018	2059.9	10024	2059.3	10033	2060.4	10069	2060.5	10086	2059.2
10097	2060.5	10121	2060.3	10135	2061.5	10159	2062.9	10173	2062.7
10185	2062.2	10201	2060.8	10204	2061.1	10226	2060.5	10236	2061.2
10248	2061.2	10258	2060.2	10266	2060	10275	2063.2	10296	2070.9

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9846	.07	9920	.045	9975	.045	10097	.055

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9975 10097 485 405.6 285 .1 .3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.87

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9592	2071.9	9602	2067.9	9659	2061.1	9754	2061.7	9770	2061.3
9816	2061.2	9870	2061.7	9911	2061.6	9917	2059.7	9929	2061.1
9962	2060.7	9978	2055	10000	2054.6	10012	2056.3	10042	2056.4
10057	2057.8	10071	2059.1	10100	2058.6	10124	2057.2	10135	2060.1
10157	2060.8	10172	2061.5	10198	2062.8	10237	2071		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9592	.055	9659	.045	9911	.055	9962	.045	10071	.045

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9962 10071 775 732.8 685 .1 .3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.74

INPUT

Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9431	2065.3	9450	2062.9	9482	2060.4	9498	2058.1	9511	2057.8
9536	2057	9547	2056.2	9561	2055.2	9579	2054.7	9591	2055.9
9620	2055.8	9659	2055.4	9701	2055.4	9721	2055.2	9748	2055.4
9770	2055.3	9802	2055.6	9824	2054.7	9841	2055.2	9891	2055.4
9906	2055.2	9937	2055.1	9961	2055	9981	2045.8	10000	2046.1
10011	2048.3	10036	2049.5	10065	2051.2	10086	2053.8	10124	2053.9
10146	2054.1	10180	2053.1	10189	2052	10200	2052	10217	2055.6
10239	2055.5	10273	2057.7	10328	2062.1	10369	2063.9	10394	2065.4
10436	2065.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9431	.035	9961	.045	10086	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9961	10086	615	668.8	615	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.61

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9419	2052.5	9428	2050.4	9460	2049.9	9502	2049.7	9538	2049.3
9575	2049.2	9619	2048.9	9675	2048.8	9704	2048.7	9738	2048.4
9755	2044.8	9775	2044.9	9782	2046.7	9798	2047.7	9821	2048.5
9858	2048.6	9893	2048	9915	2046	9921	2046.2	9934	2045.9
9944	2046.1	9959	2042.9	9984	2040.7	10000	2040.2	10012	2045.3
10023	2046.5	10037	2045.5	10050	2047	10074	2048.1	10086	2049.2
10096	2049.8	10130	2050.2	10157	2050.7	10182	2051	10196	2051.4
10219	2051.6	10244	2051.8	10250	2052.4	10264	2052.8	10291	2054.9
10312	2056.3								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9419	.035	9738	.045	9798	.07	9944	.045	10023	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9944	10023	730	668.9	725	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.48

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9589	2047	9620	2043.8	9644	2042.3	9664	2042.4	9675	2039.1
9685	2039.4	9706	2039.2	9717	2038.5	9726	2040.8	9753	2042.6
9785	2043.3	9802	2040.4	9842	2040.4	9882	2041.8	9921	2041.7
9951	2041.5	9962	2037.2	10000	2036.8	10008	2038.7	10037	2037.8
10048	2042.9	10072	2042.5	10105	2044.3	10138	2046.9	10176	2048.9

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9589	.055	9675	.035	9717	.055	9951	.045	10048	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10048	385	501.7	550	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.38

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9708	2051.6	9743	2042	9780	2037.7	9794	2036	9811	2035.7
9834	2035.6	9863	2035.8	9875	2033.7	9888	2033.6	9897	2031.6
9911	2032.7	9930	2032.8	9944	2031.5	9954	2033.6	9974	2034
9981	2032.9	10000	2032.7	10004	2034	10038	2035.1	10077	2036.3
10089	2035.5	10095	2036.1	10138	2037.2	10160	2043	10176	2037.4
10193	2038	10210	2037.8	10223	2039.4	10290	2039.9	10329	2039.4
10377	2039.7	10388	2041	10437	2041.6	10478	2044	10503	2045.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
    9708    .055    9888    .045   10004    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9888   10004              640   708.8     450             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10160   10503

CROSS SECTION           RIVER: RIVER-1
REACH: Reach-1             RS: 24.25

INPUT
Description:
Station Elevation Data     num=      35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9735  2047.9    9770  2040.4    9798  2037.4    9809  2035.3    9832  2034.2
    9842  2033.9    9867  2034.4    9901  2033.8    9951  2034.6    9968  2025.5
    9981  2024.8   10000  2024.2   10004    2024   10018  2034.5   10045  2032.8
   10052  2033.1   10070  2031.6   10114    2032   10129    2031   10144    2031
   10162  2027.1   10175  2027.4   10199  2027.2   10247  2035.8   10261  2034.3
   10281  2033.5   10295  2034.3   10311  2033.9   10361    2035   10407  2035.5
   10444    2036   10491  2037.1   10532  2038.2   10565  2038.8   10589  2040.1

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9735    .055    9809    .045    9951    .045   10018    .055   10144    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9951   10018              765   708.6     665             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10247   10589

CROSS SECTION           RIVER: RIVER-1
REACH: Reach-1             RS: 24.12

INPUT
Description:
Station Elevation Data     num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9627    2040    9648  2033.7    9664  2033.1    9693  2033.6    9726  2033.9
    9737  2028.6    9750  2028.2    9778  2028.8    9813  2028.5    9838    2028
    9859  2027.8    9911  2026.6    9920  2024.1    9941  2023.5    9944  2020.6
    9956  2020.7    9961  2021.2    9986  2021.6   10000  2021.8   10027  2022.2
   10043  2023.4   10067  2027.2   10094  2028.1   10126  2027.9   10153  2028.3
   10187  2029.3   10228  2029.8   10272  2030.5   10330  2032.1   10374  2033.3
   10393  2034.3   10430  2035.9   10455  2036.7   10506    2038   10545  2039.2
   10570  2040.1

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9627    .045    9911    .045   10067    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9911   10067              450   451.7     440             .1       .3

CROSS SECTION           RIVER: RIVER-1
REACH: Reach-1             RS: 24.03

INPUT
Description:
Station Elevation Data     num=      38
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9750    2028    9768  2019.6    9783  2023.4    9793  2023.5    9806  2021.3
    9819  2018.8    9824  2018.8    9838  2022.7    9872  2024.3    9889  2024.4
    9903  2023.6    9917  2022.7    9932  2025.1    9958  2021.5    9976  2017.5
   10000  2017.6   10003  2017.8   10023  2022.1   10063    2021   10077  2021.8
   10095  2021.2   10109  2017.8   10123  2017.9   10134  2019.5   10146  2019.9
   10165  2018.6   10194  2023.3   10218    2024   10256  2022.9   10289  2023.4
   10362  2024.1   10370  2023.3   10375  2024.5   10405  2024.9   10435  2026.5
   10485  2026.3   10501  2027.5   10536  2029.8

Manning's n Values         num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9750    .045    9932    .045   10023    .055   10194    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9932   10023              585   457.8     300             .1       .3

CROSS SECTION           RIVER: RIVER-1
REACH: Reach-1             RS: 23.94
```

INPUT
Description: THE PRESENCE OF INNER-CHANNEL ISLANDS AT THIS CROSS-SECTION CAUSE FLOODWAY TOPWID TO EXCEED FLOODPLAIN TOPWID HOWEVER, FLOODWAY IS WITHIN BOUNDARIES OF FLOODPLAIN

Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9516	2027.1	9533	2017.8	9551	2016	9572	2015.9	9596	2019.4
9626	2019.8	9671	2020.8	9700	2021	9725	2021.4	9769	2021
9789	2020.7	9809	2021.5	9827	2020.9	9848	2021	9880	2020.6
9894	2017.4	9919	2016.4	9946	2015.4	9968	2013.2	9979	2011.7
10000	2010.6	10002	2010.4	10020	2020.1	10036	2020.1	10042	2015.1
10055	2020.1	10073	2020.4	10100	2020.9	10118	2020.8	10131	2021.6
10153	2021.9	10190	2023.1	10226	2025.2	10261	2026.9	10293	2029.9

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9516	.045	9596	.055	9880	.045	10020	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9880	10020	340	403.2	435	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.87

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9487	2023.3	9499	2022.3	9550	2020.6	9575	2020.9	9594	2019.9
9628	2018	9648	2013.9	9662	2013.6	9669	2013.8	9681	2013.5
9700	2015.5	9728	2016.7	9769	2017	9804	2016.9	9825	2016.1
9842	2017	9875	2017.1	9907	2017.7	9934	2016.7	9951	2010.1
9969	2009.9	9975	2009.2	10000	2008.8	10006	2009	10021	2016.7
10039	2017	10054	2016.6	10083	2016.7	10098	2017.3	10134	2018
10166	2018.8	10207	2020.4	10234	2020.9	10273	2023.6	10306	2025.8

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9487	.045	9628	.045	9728	.07	9934	.045	10021	.1
10098	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9934	10021	1125	1179.6	1200	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.64

INPUT
Description:
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9081	2012	9109	2009.1	9138	2010.9	9200	2010.6	9231	2010.6
9271	2010	9295	2008.5	9317	2009.8	9349	2009.9	9387	2008.2
9404	2009.2	9421	2009.5	9435	2008.6	9458	2008.8	9510	2007.8
9517	2007.1	9528	2007	9537	2007.6	9556	2007.1	9572	2008.1
9599	2007.9	9630	2007.7	9658	2006.6	9671	2006.6	9677	2005.6
9691	2005.5	9701	2007.7	9715	2007.4	9720	2008.3	9732	2008.1
9747	2006.4	9767	2007.3	9799	2006.7	9846	2004.9	9855	2003.6
9863	2002.8	9877	2004.4	9889	2003	9912	2002.9	9925	2004.6
9941	2003.7	9970	2003.6	9978	2000.1	10000	2000	10005	2000.5
10019	2005.1	10032	2004.9	10039	2003.1	10054	2006	10071	2006.1
10078	2005.8	10097	2007	10114	2009.5	10136	2012.2	10155	2015.7

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9081	.055	9846	.07	9970	.045	10019	.1

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970	10019	525	500.2	460	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9081	9421	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.55

INPUT
Description: Cross Section 23.55 Lengthened 44 feet At Right Overbank Using Topographic Maps

Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9263	2009.4	9315	2008.5	9335	2008.3	9375	2007.2	9405	2006.5
9440	2005.9	9466	2005.3	9486	2004.5	9531	2003.7	9555	2003.9
9559	2004.9	9569	2003.2	9588	2003.1	9594	2003.9	9603	2003.2
9647	2002.1	9661	2001.6	9696	2002.5	9730	2001.9	9743	1996.9
9766	1996.7	9781	1999.4	9791	1999	9801	1999.7	9809	1999.5
9835	2000.3	9840	1999.1	9849	1999.5	9869	1999.2	9882	2000.3
9905	2000.6	9916	2001.2	9945	2000.5	9959	1997.4	9976	1997
10000	1997.7	10014	1997.9	10028	1999.2	10062	1999.6	10069	1999.4
10076	1997.9	10081	1997.7	10091	1998.5	10102	2001.1	10131	2001.7
10157	2001.3	10184	2000.2	10202	1998.8	10213	1999.1	10233	1998.6
10242	1997.8	10248	1997.9	10264	2003.1	10289	2006	10308	2010

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9263	.045	9730	.045	9781	.055	9945	.045	10102	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945	10102	325	545.1	595	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9263	9559	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.45

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9460	2004	9576	2001.8	9590	2001.7	9623	2000.8	9662	1999.9
9712	1999.2	9731	1998.8	9753	1998	9787	1997.6	9817	1998.1
9850	1997.8	9874	1993.1	9888	1991.8	9909	1991.4	9927	1993.8
9951	1994.2	9959	1995.1	9979	1994.8	9985	1991.5	9991	1991.5
10000	1991.8	10005	1992	10020	1993.9	10039	1993.4	10058	1994.5
10103	1995.7	10137	1994.5	10151	1994.5	10157	1993.7	10172	1994.8
10236	1994.3	10252	1989.9	10260	1991.7	10270	1991.5	10279	1988.5
10305	1988.4	10314	1989.5	10328	1989.5	10352	2000.1		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9460	.045	9787	.045	9927	.1	9979	.045	10020	.1
10270	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979	10020	530	623.5	630	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.33

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9541	1997.8	9565	1998	9582	1997.1	9646	1995.9	9703	1994.4
9741	1992.7	9769	1990.4	9809	1989.2	9819	1988.3	9835	1989.6
9858	1990.8	9896	1990.9	9924	1989.9	9942	1990.4	9963	1989
9981	1981.3	10000	1981.1	10004	1981.1	10017	1985.3	10026	1985.4
10038	1981.8	10048	1979.5	10057	1979.9	10065	1982	10082	1983.8
10100	1983.9	10111	1985.4	10129	1985.6	10146	1987.8	10164	1988.1
10182	1986.2	10202	1986.4	10222	1988.2	10253	1988.1	10269	1987.4
10289	1985.8	10314	1986.7	10333	1985.1	10339	1984.6	10352	1988.4
10368	1997.3	10386	2000.4						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9541	.055	9963	.045	10017	.045	10065	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9963	10017	490	432.6	375	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.25

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

9293	1995.4	9364	1994.8	9421	1994	9518	1993.5	9602	1992.6
9609	1991.5	9613	1991.8	9632	1991.8	9639	1991.3	9660	1989.2
9694	1985	9713	1984.5	9766	1983.9	9801	1985.6	9827	1985.9
9861	1983.8	9874	1983.5	9900	1984	9928	1983.4	9945	1980.3
9954	1977.5	9973	1977.8	10000	1977.3	10025	1981.3	10054	1981.3
10078	1981.9	10105	1982.1	10118	1982.9	10150	1983.4	10165	1982.6
10181	1984.1	10208	1983	10226	1984.4	10257	1984.9	10299	1984.8
10332	1983	10353	1983	10361	1981.5	10374	1982.6	10385	1980.9
10400	1983	10408	1983.2	10424	1988.6				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9293	.055	9928	.045	10025	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9928	10025	675	619.4	550	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.13

INPUT
Description: Cross Section 23.12 Lengthened 138 feet At Left Overbank Using Topographic Maps

Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9370	1982	9508	1980.4	9530	1979.3	9541	1978.8	9554	1976.9
9580	1975.8	9638	1976.1	9690	1978	9720	1979.4	9787	1979.7
9868	1980	9895	1978.3	9917	1976.9	9932	1970.6	9945	1970.6
9951	1972	9965	1972.1	9979	1971	10000	1969.8	10011	1977.2
10035	1976.9	10067	1978	10101	1977.4	10129	1976.4	10151	1976.3
10162	1974.6	10170	1975.4	10183	1974.1	10212	1979.6	10262	1984.6
10301	1987.7	10311	1989.9	10332	1990.6				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9370	.035	9720	.055	9917	.045	10011	.1	10212	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9917	10011	730	880.2	900	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.96

INPUT
Description: Beginning of Montgomery Watson's Analysis Cross Section 22.96 Lengthened 339 feet At left overbank using topographic maps

Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8982	1976	9119	1974	9307	1972	9320	1972.6	9386	1972.3
9440	1971.4	9470	1970.3	9513	1970	9589	1970.3	9618	1970.5
9642	1969.4	9660	1968	9669	1968.3	9686	1969.4	9718	1970
9775	1970.9	9827	1970.6	9844	1969.3	9876	1969.6	9900	1968.6
9951	1966	9963	1962.9	9977	1960.8	10000	1959.6	10016	1975.7
10023	1976.9	10050	1976.7	10090	1978	10124	1979.7	10128	1979.9

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8982	.055	9307	.035	9513	.07	9844	.1	9951	.045
10016	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10016	1025	1033	1031.3	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.86

INPUT
Description:

Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8772	1970	8806	1969	8932	1968	9108	1966	9274	1964
9360	1962	9434	1960	9442	1959.5	9452	1960	9480	1961
9530	1962	9585	1962.5	9636	1962	9646	1960	9651	1961
9660	1960	9672	1960.5	9686	1960	9690	1958	9702	1958
9718	1960	9834	1962	9888	1962.5	9912	1962	9968	1960

9976	1958	10000	1953.5	10024	1954	10030	1956	10034	1958
10078	1960	10108	1960.5	10124	1960	10192	1962	10202	1964
10232	1966	10262	1968	10300	1970	10440	1972		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8772	.055	9672	.045	9718	.055	9834	.035	9912	.1
9968	.045	10034	.1	10108	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968	10034	370	370	370	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.79

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9140	1962	9195	1961	9240	1960	9270	1959	9310	1958
9380	1957	9390	1956	9410	1955.5	9420	1956	9440	1957
9510	1958	9550	1957	9590	1956.7	9660	1956	9690	1956
9700	1958	9720	1958.2	9785	1959.8	9830	1958	9880	1959
9900	1958	9930	1956	9940	1954	9965	1952	9985	1950
10000	1950	10010	1952	10040	1954	10060	1956	10100	1958
10125	1960	10165	1961	10295	1962				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9140	.055	9880	.1	9930	.045	10060	.1	10125	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10060	295	316.8	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.73

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9200	1960	9300	1955.5	9310	1955	9357	1954	9390	1953
9410	1953	9435	1954	9450	1954.2	9460	1954	9480	1953
9510	1952	9520	1952.5	9530	1952	9540	1954	9570	1953
9580	1952	9580.5	1953	9590	1953	9600	1954	9620	1954
9670	1954	9690	1956	9720	1957	9750	1956	9780	1954.8
9810	1956	9840	1956.2	9870	1956	9880	1954	9900	1952
9965	1950	9980	1948	9985	1947	10010	1947	10010	1948
10020	1950	10025	1954	10030	1956	10085	1957.5	10125	1958
10450	1960								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9200	.055	9870	.1	9965	.045	10030	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10030	330	316.8	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.67

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9165	1960	9230	1957	9290	1956	9400	1954	9430	1952
9440	1950	9450	1948	9460	1945	9480	1948	9540	1949
9560	1950	9610	1950.7	9665	1950	9680	1949	9690	1949
9700	1950	9730	1951	9785	1951	9800	1950.3	9850	1952
9930	1952	9950	1950	9980	1946	10000	1944.5	10020	1944.5
10040	1946	10050	1950	10070	1950	10087	1952	10120	1954
10195	1954.6	10275	1956						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9165	.045	9480	.055	9930	.045	10050	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10050	620	528	450	.1	.3

CROSS SECTION RIVER: RIVER-1

REACH: Reach-1 RS: 22.56

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9125	1952	9340	1950	9420	1945	9455	1940	9525	1940
9530	1938.5	9550	1940	9565	1942	9610	1944	9660	1945
9750	1946	9770	1946	9790	1946	9905	1946.5	9970	1946
9980	1940	9990	1938.6	10010	1938.6	10020	1940	10055	1942
10060	1944	10095	1946	10180	1946	10190	1944	10200	1944
10240	1946	10255	1948	10300	1947.5	10400	1948	10475	1948.4
10600	1950	10740	1952						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9125	.045	9610	.055	9970	.045	10095	.07	10180	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970	10095	335.4	422.4	390	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10255	10740	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.48

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8700	1946	8780	1944	8990	1942	9025	1938	9040	1937
9070	1936	9080	1935	9095	1937	9115	1938	9133	1940
9178	1945	9230	1945	9268	1943	9310	1940	9338	1938
9350	1937.5	9395	1938	9415	1939	9440	1940	9460	1940
9485	1940	9503	1940	9515	1940.7	9565	1940	9578	1939.6
9583	1940	9645	1941	9670	1942	9690	1942.6	9705	1942
9720	1941	9730	1940.4	9745	1942	9765	1942	9805	1943
9900	1944	9932	1944	9952	1942	9967	1940	9980	1936
10013	1936	10045	1940	10055	1942	10072	1942	10085	1942
10095	1944	10113	1944	10140	1942	10155	1942	10172	1942.5
10185	1942	10212	1940	10225	1938	10237	1938	10245	1940
10255	1942	10330	1944	10420	1944.8	10650	1946		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8700	.055	8990	.045	9440	.055	9932	.045	10095	.07
10212	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9932	10095	210.7	264	220	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8700	9230	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.43

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8745	1944	8955	1942	9000	1936	9020	1934	9060	1935
9070	1933.4	9080	1935	9098	1936.8	9140	1936	9163	1935
9173	1934	9180	1935	9185	1936	9287	1938	9295	1939
9340	1939	9367	1938	9375	1937	9400	1936	9415	1935
9425	1935	9440	1937	9452	1935	9535	1940	9570	1937.5
9630	1939.3	9665	1939	9690	1939	9745	1940	9827	1940
9880	1941.5	9915	1940	9950	1940	9960	1938	9970	1934
9980	1936.2	10000	1936.2	10010	1934	10025	1938	10050	1940
10065	1939.8	10080	1940	10110	1941.5	10135	1940	10165	1940
10175	1936	10190	1936	10210	1934	10223	1936	10225	1938
10240	1940	10310	1942	10825	1942	10965	1944		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8745	.055	9000	.045	9080	.055	9140	.045	9185	.055
9950	.045	10050	.07	10165	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10050	410	369.6	340	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.36

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9050	1940	9110	1930	9150	1928	9172	1927	9185	1926
9200	1929	9210	1925	9220	1926	9236	1930	9250	1932
9305	1933	9333	1934	9365	1935	9402	1936	9460	1937
9525	1937.8	9605	1937	9630	1936	9632	1934	9635	1934
9650	1933.3	9660	1934	9675	1934.7	9735	1936	9750	1937
9765	1936	9787	1934	9800	1932.5	9822	1936	9850	1935
9860	1936	9890	1938	9940	1938	9975	1930	9985	1929
10000	1929	10010	1930	10025	1934	10040	1936	10070	1938
10110	1938	10140	1936	10155	1934	10180	1932.2	10195	1934
10202	1936	10232	1938	10285	1938.8	10345	1938	10420	1937.3
10485	1936	10490	1935	10525	1936	10650	1936	10655	1935
10670	1936	10710	1938	10805	1940	10845	1940.7		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9050	.055	9110	.045	9402	.035	9630	.07	9940	.045
10070	.07	10110	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10070	435.7	369.6	370	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10284	10845	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.29

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8908	1935	8955	1930	8960	1925	8965	1924.5	8985	1924
9005	1923.5	9015	1924	9050	1923	9055	1923.5	9065	1924
9085	1924.5	9100	1926.5	9110	1927	9120	1927.2	9140	1927.8
9175	1928.5	9250	1929.5	9300	1931	9350	1932.5	9400	1933.2
9465	1934	9491	1934	9630	1932	9640	1930	9652	1925
9672	1926	9710	1928	9740	1930	9770	1932	9860	1932
9880	1931	9890	1932	9908	1934	9930	1934	9972	1932
9980	1930	9982	1928	9984	1926	9990	1925.5	10010	1925.5
10020	1926	10030	1930	10040	1932	10060	1934	10072	1934
10100	1932	10110	1931.9	10115	1932	10155	1932.4	10205	1932
10240	1931.6	10273	1932	10320	1932.4	10380	1931.7	10410	1932
10534	1934	10678	1936						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8908	.055	8955	.045	9350	.035	9630	.045	9770	.07
9972	.045	10040	.07	10155	.045	10320	.07		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10040	358.9	369.6	280	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.22

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8685	1930	8800	1928	8895	1925	8907	1924	8920	1923
8935	1920	8970	1918	8990	1923	9058	1924	9105	1924
9125	1925	9138	1927	9210	1929	9410	1929.8	9510	1928
9530	1922	9533	1920	9552	1919.6	9565	1920	9577	1922
9585	1924	9590	1926	9600	1928	9648	1928	9657	1926
9662	1925.6	9670	1926	9680	1928	9712	1930	9795	1929.5
9915	1930	9935	1930.2	9955	1930	9975	1928	9985	1922
10000	1921.5	10020	1921.5	10055	1928	10067	1930	10080	1930.2
10097	1930	10117	1930	10145	1930.2	10170	1930	10205	1928
10240	1930	10305	1932	10455	1932.5	10555	1933		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8685	.045	9210	.035	9510	.045	9600	.055	9955	.045

10067 .07

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9935 10080 312.4 369.6 473.3 .1 .3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.15

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8312	1926	8385	1925	8520	1923	8540	1918	8550	1916
8560	1918	8565	1920	8579	1923	8585	1923.3	8615	1923
8680	1922	8705	1921	8722	1922	8756	1922.8	8822	1922
8840	1921	8853	1920	8867	1918	8885	1916	8895	1915
8905	1916	8915	1920	9030	1922	9045	1924	9075	1925
9105	1926	9170	1927	9308	1926	9325	1924	9350	1922
9360	1920	9385	1918.4	9410	1920	9430	1922	9445	1924
9456	1926	9515	1926	9535	1923	9550	1926	9575	1927.2
9662	1926	9786	1924	9800	1924	9815	1925.3	9825	1924
9853	1924	9870	1923.3	9917	1926	9960	1924	9972	1922
9985	1920	9990	1919	10010	1919	10015	1920	10022	1922
10050	1924	10075	1926	10135	1927.4	10160	1926	10185	1925.8
10210	1926	10265	1926.4	10295	1926	10325	1926	10376	1928

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8312	.055	8520	.045	9105	.035	9308	.045	9575	.055
9815	.07	9960	.045	10050	.045				

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9960 10050 330.7 369.6 378.9 .1 .3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.08

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8620	1930	8660	1925	8700	1930	8720	1919	8765	1920
8785	1920	8835	1915	8850	1919	8875	1919	8895	1916
8910	1919	8950	1921	9090	1921	9120	1920	9150	1918
9170	1918	9180	1916	9200	1915	9210	1913	9235	1915
9250	1918	9260	1918	9270	1917	9280	1916	9290	1915.8
9315	1918	9345	1920	9360	1918	9390	1916.2	9450	1918
9465	1920	9480	1921.2	9515	1920	9525	1918.5	9555	1920
9565	1920.3	9575	1920	9585	1918.6	9605	1920	9635	1922
9655	1922.7	9770	1922	9870	1921	9905	1922	9915	1922.2
9930	1922	9950	1920	9970	1917	9975	1916	9990	1915
10010	1915	10020	1916	10040	1918	10055	1922	10080	1922
10110	1920	10130	1920	10155	1918.3	10175	1920	10220	1922
10270	1920	10305	1922	10420	1924	10545	1926		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8620	.055	8950	.045	9480	.045	9930	.045	10055	.055

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9930 10055 450.7 475.2 300 .1 .3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.99

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8660	1925	8675	1910	8740	1915	8765	1916	8835	1918
8895	1914	9025	1918	9095	1917	9105	1912	9130	1910
9147	1911	9175	1912	9218	1913	9272	1916	9320	1916
9390	1914	9445	1914	9485	1916	9500	1916	9518	1914
9550	1916	9603	1916	9700	1917.8	9740	1916.6	9800	1918
9850	1919	9960	1918	9975	1912	9985	1910	10000	1909.9
10008	1910	10022	1912	10090	1916	10160	1918	10185	1918
10195	1916	10210	1916	10235	1917.2	10255	1916	10260	1914
10270	1913.4	10275	1914	10285	1916	10320	1918	10362	1920
10435	1922								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8660	.055	8675	.045	8765	.055	9105	.045	9800	.035
9960	.045	10090	.055	10320	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960	10090	400	422.4	470	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.91

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8740	1925	8780	1920	8805	1915	8826	1910	8835	1907
8850	1906	8863	1906	8883	1906	8895	1905	8915	1902
8935	1905	8945	1909	8990	1910	9030	1912	9070	1912.5
9125	1912	9190	1910	9250	1911.1	9320	1910	9370	1908
9380	1910	9410	1908	9425	1910	9460	1912	9490	1910
9500	1912	9525	1914	9730	1914.6	9830	1914	9878	1912
9940	1910	9975	1908	9990	1906	10000	1906	10020	1910
10040	1912	10060	1912.5	10080	1912	10120	1912.5	10150	1912
10180	1910.6	10210	1912	10250	1914	10370	1916		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8740	.055	8883	.045	9500	.035	9830	.07	9940	.045
10040	.07	10250	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10040	450.3	475.2	450.3	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.82

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8655	1920	8700	1906	8720	1906	8740	1904	8750	1903
8760	1902	8790	1901	8805	1900	8830	1901	8850	1905
8860	1907	8935	1908	8970	1908	9025	1908.7	9080	1908.2
9110	1908.9	9135	1908	9185	1906	9195	1905	9210	1906
9240	1905.2	9250	1906	9260	1906.5	9285	1906	9300	1904
9310	1902.3	9340	1904	9355	1906	9375	1908	9475	1909.4
9605	1909.3	9805	1909.6	9830	1908	9855	1906	9865	1904.3
9885	1905.8	9915	1906	9950	1906	9965	1904	9970	1902
9980	1900.5	10000	1900.5	10015	1902	10040	1904.5	10070	1906
10150	1906.7	10180	1908	10250	1910	10350	1911		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8655	.055	8720	.045	9475	.035	9805	.07	9855	.045
9885	.07	9950	.045	10070	.055				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10070	240.7	264	297.2	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.77

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8630	1915	8652	1910	8680	1909	8697	1905	8705	1900
8720	1895	8745	1899	8815	1900	8837	1904	8850	1905
8876	1905	8952	1905	9005	1906	9075	1906	9115	1906
9180	1904	9205	1902	9240	1902	9255	1900	9270	1902
9290	1904	9320	1904	9325	1902	9340	1902	9355	1906
9395	1906	9445	1906	9535	1906	9565	1905.3	9620	1906
9740	1906.5	9785	1906	9795	1904	9830	1902	9850	1900
9885	1900	9910	1900	9955	1902	9965	1900	9970	1898
9975	1898	10000	1897.3	10005	1898	10015	1900	10030	1902
10045	1904	10115	1904	10130	1903.1	10150	1904	10205	1906

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8630	.055	8697	.045	9355	.035	9785	.07	9830	.045
9955	.045	10045	.055						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9955	10045	442.2	422.4	422.4	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.69

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8860	1910	8878	1900	8900	1890	8932	1890	8960	1896
8970	1898	9020	1900	9060	1900.9	9070	1900	9080	1899.3
9110	1900	9145	1900	9180	1900.8	9230	1900.8	9290	1900
9310	1898	9365	1896	9380	1894	9390	1896	9415	1898
9480	1899.9	9505	1898	9510	1897.3	9515	1898	9575	1900
9660	1901.6	9685	1901.8	9755	1900.8	9780	1900	9815	1898
9907	1896.1	9940	1898	9982	1896	10000	1895.1	10015	1896
10025	1898	10085	1900	10157	1898	10160	1897.1	10175	1898
10265	1900	10280	1902	10300	1902.2	10615	1904		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8860	.055	8878	.045	9780	.07	9940	.045	10025	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10025	408	422.4	320	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.63

INPUT
Description:
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9060	1910	9130	1908	9140	1906	9180	1900	9212	1900
9220	1888	9230	1888	9250	1890	9260	1892	9290	1894
9320	1896	9375	1894.9	9435	1897.6	9480	1898	9560	1898
9585	1896	9605	1894	9625	1892	9633	1898.6	9645	1892
9660	1894	9695	1896	9725	1896	9785	1894	9800	1892.6
9805	1894	9830	1896	9930	1898	9980	1896	9990	1890
10000	1888.5	10007	1890	10025	1892	10085	1894	10140	1895.3
10185	1894	10190	1892	10205	1892	10220	1894	10240	1894.8
10255	1894	10270	1893.8	10275	1894	10300	1896	10400	1897.7
10530	1898	10565	1898.3	10585	1898	10600	1898	10705	1900
10840	1902	10950	1904	11015	1906	11085	1908	11175	1910

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9060	.055	9212	.045	9633	.055	9980	.045	10085	.07
10185	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980	10085	280	264	370	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.58

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9220	1906	9250	1904	9320	1900	9365	1886.8	9395	1886.8
9400	1888	9415	1890	9430	1892	9465	1892	9510	1894
9565	1894	9590	1892	9615	1888	9640	1892	9670	1894
9725	1894.7	9750	1894	9780	1893.3	9815	1894	9890	1892
9910	1890.1	9940	1892	9965	1890	10000	1888	10025	1890
10050	1892	10090	1893.8	10155	1890	10170	1888	10185	1890
10235	1892	10255	1894	10310	1894.3	10355	1894	10425	1892.2
10482	1894	10525	1894.8	10630	1895.5	10800	1897		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9220	.035	9320	.045	9430	.07	9590	.045	9640	.055
9940	.045	10090	.055	10155	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10090	525	475.2	250	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.49

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9565	1892.5	9585	1892	9640	1890	9690	1888	9695	1884
9710	1882	9715	1884	9730	1884.5	9755	1884	9770	1883.3
9780	1886	9840	1887	9900	1887.7	9925	1886	9940	1885.3
9950	1886	9990	1886	9995	1884	10000	1883	10010	1884
10035	1885	10040	1884	10060	1882	10070	1884	10080	1888
10130	1889.4	10155	1888	10175	1884	10195	1882.5	10210	1884
10220	1884	10240	1886	10270	1888	10295	1890	10345	1892
10390	1891.5	10515	1894.1						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9565	.045	9690	.07	9780	.1	9900	.045	10080	.1
10155	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9900	10080	475	475	475	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.41

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9110	1890	9250	1888	9330	1886	9510	1885	9575	1884
9590	1880	9600	1879	9620	1880	9630	1882	9670	1882.5
9720	1882	9765	1880	9795	1877.5	9805	1880	9830	1881
9845	1880	9855	1879	9865	1880	9910	1882	9930	1880
9980	1878	10000	1874.2	10010	1880	10020	1882	10030	1884
10060	1886	10165	1888	10290	1889				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9110	.055	9575	.038	9630	.1	9765	.038	9805	.1
9980	.038	10010	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980	10010	422	422	422	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.35

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8755	1888	9110	1886	9225	1884	9320	1882	9330	1880
9350	1879.2	9400	1880	9490	1881.5	9620	1881	9750	1880
9755	1878	9760	1876	9770	1874.2	9800	1876	9810	1878
9895	1878	9915	1876	9970	1874	9980	1872	10000	1871.5
10015	1872	10025	1878	10030	1880	10040	1882	10105	1884
10310	1886	10430	1886.8	10500	1887				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8755	.035	9320	.055	9750	.038	9810	.1	9970	.038
10025	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970	10025	205	211.2	220	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.31

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8660	1887.3	8740	1886	8930	1884.3	9040	1885	9125	1884
9200	1882	9275	1880	9280	1878	9290	1876.4	9310	1878
9410	1880	9500	1880.7	9570	1880	9640	1878.8	9700	1879.8
9825	1878	9855	1872	9870	1871.2	9880	1872	9890	1874
9900	1876	9920	1876.5	9940	1876	9950	1874	9965	1872
10000	1870.7	10015	1872	10050	1878	10065	1880	10105	1882
10190	1883.5	10230	1883.9	10585	1884				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8660	.035	9410	.055	9825	.07	9940	.038	10050	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10050	230	316.8	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.25

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8610	1887	8650	1886	8723	1885.2	8857	1884	8890	1883.2
9025	1884	9125	1882	9220	1880	9225	1878	9260	1875.3
9275	1876	9310	1878	9365	1879	9410	1878.4	9500	1879.8
9515	1879.8	9655	1878	9685	1877	9730	1877.6	9820	1876.5
9860	1876.6	9880	1876	9910	1875	9935	1874	9965	1870
10000	1868.7	10045	1870	10055	1878	10090	1880	10120	1880
10365	1880	10400	1878.3	10430	1878.4	10490	1879.5	10540	1880
10600	1880.7	10715	1882	10850	1884				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8610	.035	9220	.055	9935	.038	10055	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9935	10055	420	369.6	370	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.18

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8610	1880	8650	1878	8800	1875.2	8940	1875	9050	1876
9155	1874	9225	1872	9240	1870	9250	1869.7	9260	1870
9300	1872	9330	1874	9420	1874.4	9490	1874	9650	1872.5
9845	1872.9	9950	1872	9970	1870	9980	1868	9988	1866
10000	1865	10010	1866	10080	1868	10090	1870	10100	1872
10120	1874	10200	1876	10270	1878	10365	1878	10480	1877.3
10535	1878	10700	1880						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8610	.035	9225	.055	9950	.038	10100	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10100	360	369.6	355.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8610	9050	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.11

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8410	1880	8480	1876	8535	1874	8595	1872.3	8735	1872
8910	1874	9025	1874	9160	1872	9280	1870	9325	1868
9365	1866.5	9410	1868	9450	1869.7	9555	1868	9675	1869.3
9715	1869.1	9770	1870	9850	1870	9910	1868	9930	1866
9945	1864	9960	1862	9990	1860.5	10020	1862	10035	1864
10055	1866	10080	1868	10125	1870	10185	1872	10420	1874
10580	1876								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8410	.045	9280	.055	9910	.038	10080	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9910	10080	260	316.8	370	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8410	8950	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.05

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8540	1870	8560	1869.5	8605	1870	8670	1870	8730	1869.5
8750	1870	8825	1872	8875	1872.3	8975	1872	9080	1870
9220	1868	9345	1866	9400	1864.8	9430	1866	9475	1866.4
9520	1866	9545	1865.5	9560	1866	9610	1867	9670	1866.3
9775	1867.4	9830	1866	9892	1866	9920	1864	9930	1862
9960	1860	9990	1858	10000	1857.6	10012	1858	10022	1860
10045	1866	10075	1868	10095	1869.2	10145	1868.3	10375	1870
10475	1872								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8540	.045	9345	.055	9892	.038	10045	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9892	10045	340	369.6	380	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8540	8875	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.98

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8490	1870	8540	1868	8580	1866.2	8660	1866.7	8800	1866.2
8955	1868	9145	1866	9330	1864	9380	1862.8	9390	1863.2
9425	1862	9440	1861	9465	1862	9500	1861.3	9520	1862
9580	1863.6	9615	1863.3	9645	1864	9695	1864.2	9730	1864
9870	1862	9880	1861	9920	1860	9945	1858	9965	1856
9995	1854	10000	1853.2	10005	1854	10020	1860	10060	1864.7
10125	1866	10165	1866.2	10220	1866	10280	1864	10315	1864
10390	1866	10470	1870	10480	1872	10505	1874	10565	1876
10605	1878								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8490	.045	9330	.055	9870	.038	10060	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9870	10060	400	422.4	430.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8490	8955	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.9

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8740	1864	8790	1862.7	8845	1863.2	8915	1862	8950	1861.5
8965	1862	9090	1863.2	9200	1862	9360	1862	9425	1862
9560	1858	9625	1858	9810	1860.7	9830	1860	9850	1858
9865	1857.5	9875	1858	9885	1858.2	9900	1858	9950	1856
9965	1854	10000	1852.6	10030	1854	10042	1858	10050	1860
10090	1860.9	10210	1860.5	10275	1860	10330	1858.5	10385	1860
10475	1861	10520	1864	10545	1866				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8740	.045	9425	.055	9810	.07	9885	.038	10050	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9885	10050	570	580.8	480	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8740	9090	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.79

INPUT
Description:

Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8860	1859	8895	1858	8925	1857.4	8980	1857.2	9030	1857
9070	1856	9240	1855	9300	1854	9350	1854	9385	1853
9415	1852	9440	1851	9450	1852	9585	1853	9907	1855
9937	1854	9950	1852	9980	1850	9990	1848	10000	1847.5
10027	1848	10070	1850	10083	1852	10118	1854	10160	1855.3
10205	1854.3	10300	1855	10350	1854	10385	1853	10465	1854
10530	1856	10645	1860						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
8860	.045	9907	.038	10160	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9907	10160	460	422.4	575	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.71

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9055	1855	9060	1854	9095	1853	9122	1852.9	9212	1852
9265	1851	9290	1850.8	9350	1851	9430	1851	9455	1850
9460	1849	9480	1848	9490	1848	9550	1849	9625	1850
9720	1850	9750	1850	9810	1851	9910	1852	9960	1851
9990	1844	9995	1843	10020	1844	10040	1846	10075	1847
10085	1850	10140	1850	10160	1851	10170	1852	10230	1852
10270	1851	10370	1850	10390	1849	10470	1850	10534	1854
10610	1856								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9055	.045	9625	.035	9750	.055	9960	.038	10085	.055
10470	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960	10085	475	369.6	320	.3	.5

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.64

INPUT
Description: Beginning of Castro Fleet's Analysis (Del Webb Area) Cross Section Identification Numbers Were Increased by a factor ranging from 0.25 to 0.14 miles for consistency with Montgomery Watson Modeling. For example, Castro Fleet cross section 20.39 becomes Montgomery Watson cross section 20.64
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9140	1860	9220	1848	9300	1846.5	9430	1847	9500	1845
9660	1847	9940	1847	9950	1844	9970	1842	10000	1842
10020	1842	10030	1844	10110	1848	10210	1848	10310	1844
10340	1844	10360	1843	10370	1844	10420	1848	10600	1852
10830	1856	11100	1860						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9140	.055	9220	.045	9660	.035	9940	.038	10110	.055
10420	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10110	112.5	135	137.5	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.62

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9218	1854	9257	1848.4	9269	1846.4	9297	1845.8	9324	1844.7
9340	1845.8	9381	1846	9417	1846.6	9438	1845.7	9464	1845.2
9486	1844.5	9511	1843.9	9518	1842.5	9526	1844.1	9552	1844.7
9592	1845.3	9629	1845.8	9687	1846	9735	1846.1	9789	1846.1
9840	1846.5	9863	1847.1	9868	1846.5	9913	1846.9	9953	1846.8
9969	1845.6	9996	1839.7	10000	1839.8	10019	1840	10042	1839.3
10053	1843.3	10074	1844.3	10092	1844	10110	1845.1	10134	1846.7
10182	1847.1	10229	1846.7	10275	1846.6	10310	1845.6	10333	1844.5

10344	1842.9	10354	1844.2	10366	1844	10373	1840.3	10384	1843.4
10407	1844.1	10429	1844.2	10479	1848.4	10531	1849.6	10591	1850.8
10631	1851.3	10692	1851.9	10742	1853.1	10786	1853.8	10840	1854.5
10898	1855.5								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9218	.055	9269	.045	9526	.035	9969	.038	10053	.055
10429	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969	10053	915	788.9	580	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.48

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9183	1846.5	9221	1842.4	9262	1839.1	9283	1838	9345	1837.3
9355	1836.5	9361	1837.5	9412	1837.6	9460	1837.7	9516	1838.6
9572	1839	9640	1839.4	9704	1839.7	9740	1838.6	9768	1834.9
9779	1836.7	9799	1838.1	9823	1838.7	9831	1837.9	9847	1839.3
9864	1838.7	9896	1838.4	9916	1839.8	9931	1840.7	9972	1840.6
9986	1833.9	10000	1834	10014	1833.9	10023	1832.8	10050	1833
10065	1838.6	10087	1838.2	10112	1839	10139	1839.5	10187	1838.8
10195	1838.7	10224	1839.2	10238	1838.6	10261	1835.2	10282	1832.4
10309	1833.4	10327	1838.4	10350	1839	10390	1838.5	10422	1838.9
10485	1840	10529	1841.4	10561	1842.6	10597	1843.7	10655	1844.6
10697	1845.6	10752	1847.1						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9183	.055	9283	.045	9704	.07	9972	.038	10065	.07
10238	.038	10327	.055	10529	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10065	600	526.7	520	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.38

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9126	1840.6	9160	1836.4	9184	1834	9192	1832.5	9230	1830.6
9246	1829.9	9254	1830.6	9288	1830.9	9338	1831.8	9368	1832.3
9434	1832.4	9490	1831.3	9519	1826.9	9537	1827.2	9545	1829.2
9576	1830	9589	1831.6	9612	1831.4	9643	1830.9	9666	1832.2
9709	1833.5	9741	1834.1	9771	1834.7	9813	1835.2	9881	1835.5
9895	1834.7	9900	1835	9927	1834.2	9951	1837.5	9968	1832.6
9990	1830.2	10000	1829.6	10026	1829.6	10043	1835.9	10087	1835.6
10133	1835.6	10164	1834.5	10195	1833.5	10216	1832.2	10229	1830.5
10256	1828.9	10293	1833.1	10312	1833.2	10335	1832.1	10376	1828.9
10386	1826.6	10405	1825.9	10419	1835.3	10447	1836.4	10512	1838.3
10570	1840.2								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9126	.055	9184	.045	9490	.055	9951	.038	10043	.07
10335	.038	10419	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10043	475	622.3	650	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.26

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9079	1841.1	9115	1837.6	9151	1832.2	9182	1823.3	9191	1825.3
9208	1825.4	9218	1824.1	9224	1825.7	9253	1825.2	9307	1826
9342	1826.8	9363	1828.1	9404	1828.4	9465	1829.1	9507	1829.6
9540	1829.5	9622	1830.4	9632	1824.8	9639	1825	9650	1826.2
9664	1826.5	9675	1828.9	9699	1829.6	9705	1828.5	9715	1830.4
9758	1831.4	9814	1830.1	9837	1829.7	9846	1828.3	9865	1829.5
9879	1830.1	9920	1828.2	9945	1828.4	9956	1827.2	9972	1827.2

9988	1826.1	10000	1825.2	10010	1827.3	10026	1827.9	10054	1828.2
10064	1825.5	10080	1825.1	10088	1825.8	10096	1828.7	10154	1828.6
10194	1828.6	10234	1828.5	10252	1828.5	10286	1827.7	10319	1825.4
10332	1822.4	10351	1821.9	10362	1822	10376	1823.4	10399	1831.1
10430	1831.8	10506	1832	10517	1833.5	10529	1830.7	10537	1831.7
10569	1832.9	10610	1833.5	10643	1834.2	10700	1834.9	10737	1835.9

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9079	.07	9307	.045	9622	.038	9675	.07	9945	.038
10096	.055	10319	.038	10399	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945	10096	460	531.6	585	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.16

INPUT
Description: THE PRESENCE OF INNER-CHANNEL ISLANDS AT THIS CROSS-SECTION CAUSE FLOODWAY TOPWID TO EXCEED FLOODPLAIN TOPWID HOWEVER, FLOODWAY IS WITHIN BOUNDARIES OF FLOODPLAIN

Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9031	1830.2	9108	1826.4	9139	1826	9167	1823.8	9194	1822
9200	1820.4	9212	1822.2	9232	1824.2	9258	1825	9304	1825.2
9319	1825	9350	1825.2	9361	1824.4	9371	1825.6	9392	1825.3
9406	1821.1	9412	1821.4	9419	1822.9	9425	1823	9445	1825.8
9480	1825.2	9525	1824.7	9578	1823.3	9589	1820.9	9606	1821.7
9622	1821.1	9642	1819.3	9654	1822.4	9666	1823.6	9722	1823.3
9744	1823.1	9757	1822	9772	1822.7	9783	1821.3	9792	1821.3
9801	1822.8	9815	1822.3	9843	1823.3	9868	1823.6	9878	1821.8
9915	1821.9	9922	1821.2	9937	1821.6	9953	1821.5	9966	1818.5
9969	1818.4	10000	1817.7	10015	1823.9	10071	1823.6	10096	1822.5
10118	1818.7	10139	1819	10178	1818.8	10195	1818.4	10208	1822
10255	1822	10284	1823.5	10336	1823.1	10362	1818.5	10374	1816.2
10399	1815.5	10419	1821.2	10433	1823.5	10460	1821.4	10473	1821.3
10501	1827.1	10517	1828.7						

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9031	.035	9167	.07	9232	.055	9392	.038	9445	.055
9578	.038	9666	.055	9953	.038	10015	.055	10096	.038
10208	.055	10336	.038	10433	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9953	10015	450	555.7	635	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.05

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9039	1828	9079	1825.1	9125	1823.7	9157	1823.8	9204	1823.6
9253	1822.6	9335	1821.4	9358	1820.6	9370	1821.5	9394	1820.6
9416	1819.6	9455	1820.6	9477	1815.6	9503	1815.4	9517	1813.8
9541	1818.4	9582	1817.8	9602	1817.2	9625	1819.1	9637	1814.9
9646	1815.6	9655	1815.7	9688	1815.9	9702	1815.5	9716	1820.9
9721	1819.4	9750	1818.7	9760	1814.4	9772	1813.5	9786	1813.8
9802	1816.1	9837	1814.9	9849	1815.8	9857	1815.7	9864	1814.1
9878	1816	9903	1816.9	9916	1816.5	9935	1812.5	9942	1812.6
9954	1814.4	9967	1813	9974	1813.9	9980	1813.9	9996	1810.7
10000	1811.1	10011	1814.9	10032	1816	10064	1816.4	10113	1815.2
10133	1813.6	10143	1813.6	10156	1816.9	10212	1816.8	10230	1815.5
10241	1816.3	10307	1817.1	10334	1817.5	10363	1815.2	10382	1815.1
10416	1811.9	10447	1811.2	10476	1821.5	10491	1823.1	10529	1824.4
10579	1825.4	10625	1825.5	10672	1826.7				

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9039	.035	9455	.038	9541	.055	9625	.038	9716	.07
9954	.038	10011	.055	10113	.038	10156	.055	10334	.038
10476	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9954	10011	815	700	770	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.92

INPUT
Description: CROSS SECTION 19.92 LENGTHENED 865 FEET AT LEFT OVERBANK USING TOPOGRAPHIC MAP

Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8928	1820	8966	1818	8991	1816	9091	1816	9241	1814
9365	1813.1	9529	1814	9617	1814	9667	1814	9705	1812
9718	1810	9793	1810.2	9827	1811.6	9863	1813.4	9879	1813.8
9909	1813.7	9948	1812.6	9959	1814.2	9974	1809.7	9985	1810.5
10000	1803.6	10014	1802	10024	1802	10044	1805.4	10057	1808.1
10066	1806	10082	1809.4	10097	1810.4	10133	1811	10180	1811.4
10199	1809	10220	1808.9	10230	1809	10241	1809.9	10268	1809.5
10283	1809.7	10305	1812	10320	1811.8	10343	1811.7	10358	1811
10373	1808.8	10399	1816.5	10413	1817.6	10433	1818.3	10462	1819.8
10505	1820.5	10531	1820.8						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8928	.035	9718	.055	9985	.05	10057	.07	10180	.05
10305	.055	10399	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985	10057	250	492	660	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.83

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8883	1815.8	8943	1814.6	8997	1814	9054	1813.4	9125	1812.8
9179	1811.8	9223	1811.7	9270	1811.4	9332	1811.3	9390	1811.2
9457	1811.4	9547	1811.3	9602	1811.4	9651	1811.6	9681	1812
9711	1811.8	9736	1810.3	9751	1807.2	9761	1806.9	9770	1807.3
9804	1807.1	9826	1806	9836	1807	9862	1806.3	9881	1807.6
9908	1807.7	9929	1805.3	9943	1805.5	9960	1805.8	9974	1802.8
10000	1801.2	10018	1800.7	10035	1799.3	10045	1801.9	10074	1806.6
10121	1806.2	10150	1808.3	10184	1807.5	10206	1803.9	10222	1804.5
10263	1805.7	10301	1806.9	10333	1807.9	10372	1808.1	10398	1808.7
10429	1810.5	10487	1812						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8883	.035	9751	.055	9960	.05	10074	.07	10184	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960	10074	500	567.8	600	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.72

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8917	1812.3	8958	1810.8	9008	1809.5	9064	1809.2	9129	1808.4
9196	1808.3	9243	1807.8	9298	1807.2	9350	1806.8	9423	1806.7
9474	1806.8	9534	1807.4	9576	1807.5	9623	1807.2	9677	1808
9715	1808.6	9793	1808.4	9812	1801.9	9822	1800.9	9847	1801.3
9871	1802	9884	1797.2	9893	1796.5	9905	1799.8	9926	1801.6
9948	1800.7	9961	1798.3	9973	1798.4	9989	1797.8	10000	1796.5
10018	1795.1	10030	1796.9	10043	1801.8	10064	1803.5	10089	1802.9
10108	1802.3	10129	1802.7	10160	1801.7	10187	1801.7	10225	1800.4
10241	1797.4	10261	1797.5	10275	1799.5	10300	1802.1	10326	1803.1
10359	1802.7	10408	1801.2	10465	1799.9	10483	1798.3	10498	1798.4
10513	1799.1	10533	1803.1	10563	1805	10592	1806.4	10641	1808.2
10680	1809.5								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8917	.035	9793	.055	9871	.05	9905	.055	9948	.05
10043	.055	10225	.05	10300	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9948	10043	500	509.9	500	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.62

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9000	1808	9035	1806.3	9083	1805	9143	1804.4	9224	1804.3
9276	1803.1	9354	1802.8	9437	1802.3	9491	1802.2	9563	1802.1
9653	1801.6	9716	1801.3	9737	1800.7	9753	1800.7	9783	1801.4
9834	1801.1	9879	1801.3	9924	1802.7	9966	1803.9	9981	1802.5
10000	1791.1	10025	1790.3	10036	1792.4	10046	1796	10077	1797.5
10120	1798.2	10180	1797.8	10221	1796.4	10241	1795.6	10293	1795
10309	1793.1	10317	1793.9	10323	1792.4	10343	1793.3	10361	1795.7
10375	1796.4	10398	1794.9	10417	1797.1	10448	1797.6	10494	1797.1
10535	1796.2	10581	1795.1	10609	1795.3	10632	1794.6	10650	1795.2
10677	1798.6	10708	1799.9	10742	1801.3	10788	1802.6	10840	1803.7
10901	1804.6	10961	1805.9	11026	1806.4	11080	1807.4	11145	1808.6
11200	1810								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9000	.035	9966	.05	10046	.055	10293	.05	10361	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9966	10046	515	528	530	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9000	9966	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.52

INPUT
Description:
Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9196	1800	9242	1799.2	9307	1798.6	9367	1797.5	9417	1797
9474	1796.1	9482	1794.8	9489	1795.5	9517	1795.5	9524	1796.3
9528	1795.4	9590	1795.8	9657	1796.2	9718	1796.5	9795	1796.5
9871	1795.5	9916	1794.5	9936	1788.8	9952	1791.3	9972	1790.6
9983	1788.7	10000	1787	10005	1786.4	10022	1786.2	10038	1793
10055	1793.4	10095	1793.6	10134	1792.6	10156	1788.1	10164	1788.2
10177	1789.7	10189	1788.7	10215	1791.3	10222	1790.4	10238	1791.5
10251	1790.6	10265	1791.5	10294	1791.3	10300	1790.4	10325	1791.2
10345	1791.4	10354	1790.3	10387	1791.8	10411	1791.6	10436	1791.2
10472	1790.4	10488	1787.7	10502	1791	10518	1790.8	10539	1787.9
10559	1786.8	10582	1795.2	10617	1796.4	10679	1797	10746	1797.5
10814	1797.8	10893	1797.8	10903	1796.5	10910	1797.5	11010	1797.7
11097	1797.3	11187	1797.8	11237	1798.4				

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9196	.035	9916	.05	9972	.05	10038	.07	10134	.055
10387	.07	10518	.05	10582	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10038	700	606.3	485	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9196	9795	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.41

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9475	1802.7	9548	1794.3	9613	1789.7	9658	1787.9	9675	1786.2
9681	1787.1	9715	1788.2	9764	1788.1	9796	1787.7	9830	1788.3
9859	1790.3	9880	1791	9908	1790.6	9928	1789.4	9948	1786.8
9965	1787.6	9979	1783.9	10000	1784	10039	1784.6	10052	1785
10072	1788.6	10110	1788.5	10139	1788.6	10171	1787.5	10183	1786.6
10193	1783.2	10209	1783.3	10225	1786.1	10246	1786.6	10263	1785.9
10284	1786.5	10328	1787.3	10353	1785.2	10365	1783.2	10374	1782.6
10383	1783.1	10403	1785.8	10415	1785.7	10425	1784	10446	1787.3
10480	1786.7	10495	1787.3	10521	1787	10545	1783.5	10561	1783.8
10587	1783	10616	1790.3	10654	1791.8	10698	1792.3	10763	1792.8
10803	1793.2	10811	1792.6	10823	1793.2	10878	1793.3	10925	1793.4
10979	1793.3	11038	1793.4	11100	1793.5	11160	1793	11213	1793.2

11254	1793.8	11307	1794	11380	1794.5	11443	1795.1	11509	1795.9
11572	1796.6	11647	1798.4	11735	1800.1				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9475	.045	9965	.05	10072	.055	10183	.05	10225	.07
10521	.05	10616	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10072	600	769.4	790	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.26

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9258	1798	9307	1793.5	9361	1787.2	9382	1785.3	9425	1783
9434	1781.7	9446	1783.4	9458	1783.2	9466	1780.8	9478	1781
9490	1783.2	9541	1784.1	9573	1782.4	9594	1782.3	9602	1783.1
9634	1782.2	9645	1782.9	9675	1782.2	9708	1781.9	9715	1779.9
9723	1780.1	9740	1779.1	9759	1780.5	9812	1780	9819	1780.5
9849	1780.3	9900	1779.9	9923	1777.9	9934	1779.6	9955	1779.5
9981	1778.2	10000	1775.4	10018	1773	10024	1780.7	10035	1782
10061	1782.7	10070	1781.9	10085	1783.4	10129	1784.6	10176	1785.5
10243	1785.6	10331	1785.1	10394	1785.2	10452	1784.9	10511	1784.7
10595	1784.7	10657	1784.5	10707	1784.8	10777	1785.4	10836	1786
10871	1785.9	10904	1785.3	10948	1785.7	10995	1786.9	11037	1788.1
11072	1789	11162	1789.7	11215	1790.1				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9258	.055	9425	.07	9541	.045	9759	.07	9981	.05
10024	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981	10024	500	416.4	300	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10110	11215	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.18

INPUT
Description: From Cross section 19.18 to Cross section 20.62, the floodplain and the floodway boundaries are made coincident on the right overbank only. As per discussion with the FEMA technical evaluator, this is done to include, the low flow channel on the right overbank of the Skunk Creek Wash, within the floodway boundary (March 17, 1998)
Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9114	1791.3	9152	1788	9213	1782.9	9246	1780	9281	1778.8
9312	1778.2	9367	1777.6	9382	1776.3	9399	1775.6	9415	1773.5
9430	1778.7	9442	1776.1	9452	1776.5	9465	1778.7	9479	1778.8
9493	1774.7	9514	1775.1	9534	1777	9568	1777.6	9625	1778
9638	1776.9	9649	1777	9672	1779	9722	1779.1	9764	1779
9774	1778.2	9813	1778.8	9834	1778.5	9854	1779.4	9874	1779.4
9906	1777.1	9918	1777	9926	1774.7	9943	1775.9	9980	1773.9
10000	1771.2	10006	1770	10025	1770.1	10040	1775.5	10055	1775.8
10080	1781.1	10135	1781.4	10202	1782.1	10254	1782.2	10305	1781.8
10344	1781.8	10403	1781.6	10410	1781.1	10438	1781.3	10534	1781.4
10600	1781.9	10659	1783	10688	1783.1	10727	1783.2	10758	1783.6
10796	1784.1	10857	1784.4	10925	1785.3	10969	1786	11042	1787.5
11098	1788.4	11158	1788.4	11224	1788.6				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9114	.045	9367	.05	9430	.055	9479	.05	9534	.055
9943	.05	10080	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9943	10080	460	598.7	720	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.07

INPUT
Description:

Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9213	1782.6	9244	1779.1	9266	1776.5	9296	1775.1	9326	1775.1
9352	1775	9406	1775	9426	1774.8	9467	1773.3	9515	1772
9537	1770.3	9556	1769.6	9569	1768.1	9586	1770.4	9614	1771.6
9641	1772	9656	1773.6	9691	1773.2	9711	1772	9724	1769.5
9748	1771.8	9783	1772.9	9806	1772.1	9842	1772.2	9876	1772.3
9909	1772.6	9928	1771.9	9952	1770.5	9969	1771.6	9985	1768
10000	1764.8	10007	1764.8	10022	1766.5	10047	1767	10068	1773.1
10092	1773.7	10141	1773.3	10157	1772.6	10164	1773.2	10198	1773.6
10246	1773.9	10274	1775.1	10315	1775.3	10361	1775	10402	1774.5
10441	1774	10485	1773.4	10509	1773.6	10558	1773.5	10573	1773.8
10632	1774.1	10679	1774.4	10711	1775.2	10731	1775.1	10750	1775.4
10774	1775.7	10827	1775.7	10882	1776	10923	1777.1	10971	1777.8
11014	1778.3	11069	1779.1	11099	1779.6	11110	1779.4	11128	1780
11163	1780.4	11196	1781.1						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9213	.07	9296	.055	9515	.05	9614	.055	9969	.05
10068	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969	10068	680	601	500	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.96

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9326	1779.1	9377	1778.7	9418	1776	9427	1774.9	9442	1773.9
9458	1769	9482	1767.7	9489	1766	9496	1767.1	9514	1767.3
9536	1767	9545	1768	9570	1768.8	9607	1768.6	9640	1768.1
9649	1767.9	9687	1767.8	9714	1767.3	9726	1767.7	9764	1767.9
9796	1767.6	9809	1768.2	9837	1768.3	9862	1768.6	9894	1768.2
9924	1768	9931	1762.2	9938	1762.6	9959	1762.6	10000	1762.9
10007	1763.3	10021	1766.3	10035	1767.2	10043	1767.2	10055	1766
10069	1766.9	10100	1765.7	10107	1766.7	10125	1766.3	10137	1764.5
10159	1769.4	10193	1771	10235	1770.9	10281	1770.5	10317	1769
10347	1768.7	10358	1767.5	10370	1768.8	10401	1768.8	10408	1767.4
10414	1768.5	10436	1769	10455	1769.7	10515	1770.2	10574	1770.5
10644	1770.6	10686	1770.7	10731	1770.9	10781	1771	10818	1771.3
10877	1771.2	10930	1772.4	10975	1773.1	11027	1773.1	11087	1773.4
11135	1773.8	11195	1773.9	11217	1774.3	11277	1774.5	11298	1774.6

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9326	.055	9924	.05	10021	.07	10159	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9924	10021	525	631.7	600	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.84

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9450	1770.8	9475	1764.5	9503	1756.9	9512	1757.6	9522	1758.4
9531	1758.5	9538	1757.4	9557	1759.8	9576	1759.9	9586	1758.7
9597	1759.6	9604	1759.6	9612	1758.6	9620	1760	9649	1760.6
9679	1760.6	9702	1761	9721	1759.8	9732	1760.5	9768	1760.6
9784	1759.8	9797	1759.8	9818	1761.3	9848	1763.1	9888	1763.4
9915	1763.2	9942	1759.9	9987	1758	10000	1755.9	10008	1755.7
10036	1762.6	10051	1763.3	10101	1762.5	10107	1760.8	10115	1762.3
10145	1764.2	10182	1765.5	10209	1766	10231	1765	10258	1765
10308	1765.5	10357	1764.9	10413	1765.4	10417	1765.4	10685	1766
10808.04	1768								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9450	.055	9915	.05	10036	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9915	10036	500	497.1	325	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10165	10808.04	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.74

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9245	1770	9249	1770.1	9269	1763.2	9291	1763.1	9321	1762.2
9332	1760.3	9362	1758	9377	1757.6	9388	1752	9404	1754.6
9417	1753.8	9437	1750.4	9454	1750.7	9479	1754.9	9493	1756.6
9528	1756.7	9552	1756.7	9583	1757.1	9616	1757.8	9656	1758.2
9692	1758.9	9729	1760	9750	1759.4	9767	1759.8	9791	1758.1
9814	1758.5	9851	1759.2	9883	1759	9908	1758.5	9924	1757
9938	1757.7	9975	1757.7	9986	1755.1	10000	1755	10018	1755.2
10042	1755.3	10056	1757.7	10111	1758.5	10142	1758.7	10163	1759.6
10198	1760.5	10244	1760.9	10281	1760.1	10318	1759.2	10336	1759.3
10361	1759.6	10381	1759.5	10434	1759.2	10471	1761.4	10502	1763.1
10533	1763.6	10581	1763.5	10628	1763.1	10660	1763.7	10706	1763.7
10752	1763.6	10796	1763.6	10855	1763.9	10889	1763.8	10896	1761.9
10910	1763.9	10932	1764	10947	1766.7	10962	1766	10991	1764
11003	1762.8	11018	1766.7	11036	1768.5				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9245	.055	9377	.05	9479	.055	9975	.05	10056	.055
10502	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975	10056	750	917.8	650	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10244	11036	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.57

INPUT
Description:
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9578	1785.6	9624	1759.3	9644	1751.3	9663	1748.8	9671	1748.5
9703	1746	9714	1743.7	9735	1743.5	9747	1746.6	9772	1749.2
9819	1750.4	9829	1750.1	9832	1750.3	9879	1751.1	9926	1752.5
9947	1752.5	9969	1745.1	10000	1744.4	10001	1744.4	10006	1745.5
10014	1745.9	10041	1751.5	10062	1749.2	10076	1751.5	10102	1751.5
10116	1750.9	10146	1751.2	10170	1752.4	10224	1752.3	10247	1751.4
10263	1752.2	10302	1753.1	10332	1753.6	10360	1753.3	10386	1753.7
10400	1751	10416	1753.4	10452	1752.6	10474	1752.5	10490	1751.8
10507	1752.7	10528	1752.8	10560	1754.2	10585	1755.2	10600	1756.5
10645	1757	10678	1757.7	10717	1757.9	10766	1758.1	10820	1758.8
10862	1759.2	10915	1760.1	10941	1760.2	10950	1760.5	10964	1760.8
10993	1760.4	11007	1760.2	11021	1761.1	11048	1761.8	11082	1765.7
11111	1770.4	11148	1776.8						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9578	.07	9703	.04	9747	.07	9947	.04	10041	.07
10600	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9947	10041	275	389	675	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.49

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9699	1762.2	9727	1754.7	9755	1746.3	9766	1747.1	9792	1747.4
9832	1747.4	9853	1745.9	9867	1742.7	9895	1743.3	9909	1744.9
9930	1744.8	9965	1744.6	9985	1741.7	10000	1741.9	10015	1745.2
10037	1746.9	10052	1746.9	10060	1746.2	10072	1745.8	10082	1747.3
10111	1747.8	10142	1748.7	10167	1748.9	10202	1749	10243	1748.9
10282	1748.7	10327	1748.2	10379	1748	10394	1747.8	10406	1746.5
10417	1747.4	10434	1743.7	10445	1744	10464	1746.9	10481	1742.3
10497	1746.3	10522	1748.9	10562	1750.3	10602	1751.2	10637	1751.4
10676	1751.9	10727	1752.2	10780	1752.5	10817	1752.7	10834	1753.1
10873	1753.7	10897	1754.2	10951	1754.5	10998	1754.9	11036	1755.3
11087	1755.7	11131	1757.1	11137	1757.6	11163	1757.6	11194	1759.2

11230	1759	11254	1759.4

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9699	.07	9853	.04	9909	.07	9965	.04	10037	.07
10202	.055	10417	.04	10497	.07	10562	.045		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10037	1162.5	1099.7	850	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.29

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9535	1750.9	9583	1741.6	9597	1737.2	9608	1739.5	9634	1739.1
9647	1737.5	9660	1732.6	9678	1737.5	9712	1739.3	9758	1740.2
9788	1740.1	9800	1739.1	9812	1739.7	9832	1738.7	9852	1735.8
9872	1737.4	9914	1738.3	9932	1737	9949	1735.5	9968	1735
9976	1734	9984	1734.6	10000	1734.3	10009	1735.5	10020	1735.3
10029	1733.5	10049	1739.9	10076	1740.5	10115	1740	10130	1736.1
10144	1734.7	10160	1736.9	10185	1738.4	10213	1742	10244	1742.5
10266	1742.8	10270	1742.2	10286	1742.8	10318	1742.8	10349	1742.7
10388	1742.8	10395	1742.5	10429	1742.5	10468	1742.2	10472	1742.6
10553	1742.5	10565	1741.1	10574	1742.8	10607	1743.2	10634	1743
10693	1743.3	10746	1744.6	10795	1744.9	10858	1745.6	10899	1746
10970	1747.1	11035	1747.8						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9535	.055	9634	.04	9678	.055	9914	.04	10049	.07
10115	.04	10185	.055	10244	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9914	10049	200	300	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.23

INPUT
Description: NEW CROSS SECTION: GR CARD DATA FOR 18.20 DEVELOPED FROM TOPOGRAPHIC MAPS. CROSS SECTION ADDED TO MODEL FLOW OVER CLOUD ROAD. CAPACITY OF 3-60" CMPS IGNORED
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9510	1750	9550	1740	9640	1736	9650	1734	9660	1736
9690	1736	9700	1735	9710	1736	9780	1738	9800	1738
9930	1736	9950	1734	9965	1732	10000	1730	10010	1738.8
10240	1740	10480	1740	10730	1740	10870	1742		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9510	.055	9930	.04	10010	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10010	370	370	400	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.16

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9687	1755.1	9711	1739.9	9724	1736.1	9754	1734	9768	1730.7
9775	1730.5	9788	1733.9	9810	1735.2	9836	1735.2	9860	1734.7
9877	1733.3	9892	1732.7	9911	1732.9	9951	1732.5	9981	1732.5
9996	1729.6	10000	1729.6	10020	1729.6	10050	1728.8	10075	1739
10078	1737.8	10095	1737.2	10124	1735.8	10139	1734.7	10155	1734
10199	1733.5	10330	1730	10380	1730	10430	1734	10650	1736
10750	1736.9	10930	1738	11040	1738	11130	1740		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9687	.07	9754	.04	9788	.07	9981	.04	10075	.055
10330	.04	10430	.055						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981	10075	345	377.6	360	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.09

INPUT
Description: END OF CARTER-BURGESS ONE-FOOT CONTOUR MAPPING. MONTGOMERY-WATSON TWO-FOOT INTERVAL CONTOUR MAPPING RESUMES. ENCROACHMENT INSERTED AT SECTION 18.09 TO CONTAIN FLOODPLAIN

Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9828	1748.2	9855	1733.9	9862	1732.7	9872	1729.9	9880	1729.7
9885	1731.3	9900	1730.9	9919	1727.3	9936	1730.5	9951	1727.5
9971	1728.2	9991	1728.2	10000	1727.4	10006	1727.8	10065	1728.8
10076	1729.6	10090	1731.3	10119	1731.8	10178	1731.7	10226	1730.9
10264	1729.9	10280	1726.2	10290	1725.9	10310	1733	10333	1732.9
10380	1731.3	10407	1730.4	10447	1729.1	10497	1728.6	10522	1729.1
10540	1723.5	10556	1723.7	10573	1728.6	10597	1731.4	10633	1733.6
10663	1734.3	10717	1734.2	10772	1733.5	10799	1732.5	10847	1732.3
10899	1732.4	10935	1732.3	10974	1733.1	11013	1733	11076	1732.8
11132	1733.3	11210	1733.7	11263	1734	11349	1734.7	11423	1735.8
11479	1736.6	11538	1737.7	11570	1738	11595	1738.6	11632	1739.1
11661	1739.7								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9828	.07	9936	.04	10090	.07	10310	.055	10522	.04
10573	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9936	10090	712.5	705.8	375	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 17.95

INPUT
Description: CLOUD ROAD CROSSES THROUGH THIS CROSS-SECTION. 3-60" CMPS: CAPACITY IGNORED REMOVED LEFT ET 9845

Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9755.02	1740.51	9818.34	1730.21	9852.1	1726.85	9867	1726.36	9873.24	1726.15
9879.76	1724.21	9941.9	1724.211	0021.83	1722.211	0042.15	1722.21	10047	1723.51
10058.87	1726.711	0131.78	1726.211	0166.46	1727.011	0219.74	1727.071	0281.54	1728.21
10340.58	1728.211	0351.82	1726.211	0391.92	1724.211	0410.16	1724.431	0440.86	1728.21
10470.78	1728.211	0517.06	1726.711	0529.03	1726.211	0545.77	1723.061	0569.84	1728.36
10647.71	1730.211	0713.11	1730.311	0858.38	1730.211	0888.71	1729.96	11036.4	1730.21
11046.39	1731.311	1060.67	1734.211	1064.15	1732.111	1068.55	1734.951	1081.31	1752.83

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9755.02	.055	9873.24	.041	0058.87	.071	0340.58	.041	0440.86	.055
10529.03	.041	0569.84	.055						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9873.241	0058.87	500	563.8	520	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 17.84

INPUT
Description: Change elevation of 10533.75 and 10579.92 to 1718 to match topo, Modified geometry to include changes by Tramonto development between station 1072 and 10867.86

REMOVED LEFT ET 9770

4-8-99: ADDED RIGHT FP ET AT 10706

Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9670.69	1730.91	9713.32	1728.97	9753.84	1724.21	9772.54	1720.21	9790.38	1720.65
9800.9	1722.31	9834.61	1724.21	9909.89	1724.21	9925	1723.21	9940.13	1722.21
9955.16	1719.61	10029.4	1718.211	0048.88	1718.211	0133.86	1718.21	10164.5	1720.21
10219	1720.311	0230.85	1722.211	0374.53	1722.21	10440.3	1723.341	0487.83	1722.59
10533.75	171810579.92		171810616.26		1722.211	0663.58	1722.211	0716.91	1724.21
10720	1725.51	0867.86	1725.511	0903.95	1725.571	1049.41	1726.58		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9670.69	.055	9753.84	.04	9834.61	.055	9940.13	.04	10164.5	.055
10487.83	.041	0616.26	.055						

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

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       9940.13 10164.5              310   341.7     310             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.78

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10585.51 and 10800

REMOVED LEFT ET
             9615
4-8-99: RIGHT EP ET CHANGED FROM 10607 TO 10610
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9599.65 1732.21 9627.65 1721.39  9684.5 1716.21 9717.21 1718.21 9765.64 1718.48
  9841.5 1720.21    9931 1720.21 9955.49 1720.21 9973.26 1714.21 9988.08 1714.21
   10026 1713.3810070.76 1716.2110151.26 1716.4410235.37 1716.0110282.17 1718.21
10309.14 1720.2110385.19 1720.21 10409.4 1716.2110447.79 1716.2110488.02 1720.21
10527.03 1720.2110585.51 1722.21 10585.6  1723.3   10800  1723.3 10884.8 1723.81
10986.97 1724.2111024.28  1724.9

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9599.65    .045 9955.49     .0410070.76    .05510385.19     .0410488.02    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9955.4910070.76              490   661.3     720             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.65

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10358.37 and 10903.11

4-8-99: ADDED RIGHT FP ET
             10314


Station Elevation Data    num=      24
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9382.74 1726.21 9413.87 1716.21 9475.55 1714.21  9482.6 1712.21 9493.88 1712.71
 9550.02 1713.98 9594.24 1713.48  9630.3 1714.21 9665.77 1713.31 9812.95 1714.21
 9899.02  1712.1 9912.78 1708.21    9924 1707.25 9959.39 1704.21 9984.01 1704.21
 9992.68 1708.3110000.49 1710.21   10021 1711.2810077.36 1714.2110133.98 1715.41
10205.53 1716.11   10314 1716.11 10314.1    171910903.11    1719

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9382.74    .045 9899.02     .0410000.49    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9899.0210000.49              370   460.8     500             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.57

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10401.97 and 11289.4, raised elevation to
             1715

4-8-99: ADDED RIGHT FP ET AT 10302, ADDED LEFT FP ET AT
             9440
Station Elevation Data    num=      23
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9303.56 1717.16 9335.15 1715.35 9428.56  1714.3 9471.01 1714.57  9508.1 1710.21
 9548.25 1711.34 9576.05 1712.21 9686.77 1712.21 9871.91 1708.21  9897.5 1706.21
    9923 1706.21 9930.23 1702.21 9971.46  1703.610007.46 1706.3810020.08 1708.91
   10040 1710.2110114.97 1708.53 10161.6  1711.510169.27 1712.21   10302 1712.21
10401.97    171511225.31    1715 11289.4 1715.39

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9303.56    .045 9576.05    .055 9871.91     .04   10040    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9871.91   10040              365   474.4     500             .1       .3

CROSS SECTION          RIVER: RIVER-1
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REACH: Reach-1            RS: 17.48

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10455.69 and 11616.42, raised elevations to
             1710.5.

4-8-99: RT FP ET CHANGED FROM 11597 TO 10383, LEFT FP
             ET CHANGED FROM 9404 TO 9478
APPROX. 3,600CFS DIVERTS INTO RIGHT
             OVERBANK FROM THIS CROSS-SECTION DOWNSTREAM. REFER TO SPLIT FLOW
             MODEL FOR RIGHT OVERBANK ANALYSIS. FLOODWAY ANALYSIS USES ENTIRE
             FLOW AND IS STRICTLY FOR MAIN CHANNEL.
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9372.88 1716.21 9458.51 1711.05 9485.84 1708.21 9544.18 1708.21  9597.5 1707.46
 9679.17 1706.81 9739.84 1706.21 9877.04 1706.21    9893 1702.89 9936.69 1702.21
 10037.7 1702.2110047.62 1704.6110063.16 1706.21   10073 1706.2110247.95 1706.21
10301.08 1706.71   10383 1706.7110455.69  1710.511541.69  1710.511616.42 1710.65
11696.98 1712.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9372.88    .045 9877.04     .04   10073    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9877.04   10073              429   429.4     429             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.39

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10621.24 and 11645.05 by raising the elevation to
             1706.11.  This elevation is from the cross section profiles,
             rather than the grading drawing.  The grading drawing shows the
             elevatio

4-8-99: RIGHT FP ET CHANGED FROM 11369 TO 10508



Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9116.73 1711.31 9167.22 1710.21    9190 1710.21 9326.23 1707.99 9403.55 1706.21
 9430.65 1706.21  9471.2 1705.33 9555.58 1704.95  9664.9  1705.2 9710.74 1705.61
 9779.45 1704.11 9887.09 1702.21    9893 1698.05 9898.69 1698.21 9920.72 1698.21
 9928.58 1700.21 9951.05 1696.21  9973.4 1696.21 9991.02 1698.2110057.52 1700.21
10099.04 1700.2110111.87 1698.2110131.69 1698.2110144.53 1702.2110170.78 1702.21
   10179 1701.5110195.61 1700.21 10231.6 1702.2110316.97 1702.3710463.14 1702.98
   10508 1702.9810621.24 1706.1111622.56 1706.1111645.05 1706.1111673.91 1705.15
11732.23  1705.1 11786.9 1705.6111887.47 1705.1111960.19 1705.4112035.23 1704.99
12058.85 1704.39

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9116.73    .055 9326.23    .045 9887.09     .0410144.53    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9887.0910144.53              465     500     530             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 9116.73    9731
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
11643.96   12071 1706.24

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.3

INPUT
Description: Modified geometry to include changes by Tramonto development. To
             the right on station 10584.84 raised elevations to
             1702.4

4-8-99: RIGHT FP ET CHANGED FROM 11686 TO 10590, LEFT FP
             ET CHANGED FROM 9451 TO 9568
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9322.93 1704.81 9419.22 1704.21 9448.82 1704.11 9534.19 1701.51 9566.96 1700.21
 9598.26 1700.21 9656.94 1698.21 9720.94 1698.21 9761.09 1697.56 9881.54 1698.21
```

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 9933.98 1697.23 9946.95 1696.21 9962.55 1692.21    9970 1692.2110031.21 1692.21
10063.76 1694.2110074.95 1696.2110119.18 1696.21   10156 1697.4110169.28 1697.91
10277.48 1698.2110295.67 1696.2110308.57 1696.3110327.84 1698.2110437.49 1698.21
10523.21 1700.2110569.87 1700.5110584.84  1702.412183.66  1702.4

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9322.93    .045 9933.98     .0410074.95     .0710437.49    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9933.9810074.95              630   644.4     580              .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.18

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10749.27 elevatio from 1694.71 to 1696.01, 11408.6
             and 11794.13, and 12285.64 and 12352.81, added vertical wall on
             RHS

4-8-99: RIGHT FW ET CHANGED FROM 10672 TO 10668, RIGHT FP
             ET CHANGED FROM 10839 TO 10710, LEFT FP ET CHANGED FROM 9590 TO
             9746
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9493.99 1700.01 9664.32 1697.27 9715.97 1695.77 9779.51 1694.21 9808.56 1692.26
 9845.85 1693.41 9935.01  1692.7 9963.19 1692.21    9978 1688.95 9990.45 1686.21
10011.48 1686.21 10053.3 1690.2110123.73 1690.2110145.22  1687.510162.51 1686.21
10206.89 1688.2110244.97 1688.21   10254 1689.5610284.66 1694.2110342.46 1696.21
10386.32 1695.6110446.24 1695.3110516.41 1694.21 10575.4 1693.9810655.64 1693.27
10749.27 1696.0110806.19 1696.0110933.46 1695.9310997.29 1696.2111083.48 1696.11
11089.79 1696.3111108.75 1696.7111237.26 1695.8411322.92 1695.01 11408.6 1693.91
11794.13 1694.1111930.31 1694.7812034.58 1695.7112115.02 1696.1112238.17 1695.91
12285.64 1696.1112352.81 1696.6112381.62 1696.1112395.49 1696.8112435.45 1696.29
 12500.3 1696.9112576.83 1698.21 12621.6 1698.41 12621.7    1700

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9493.99    .055 9963.19     .04 10053.3     .0710123.73     .0410284.66    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9963.19 10053.3              610   600.8     510              .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   11108 12621.7

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.06

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10572.12 and 10928.08, 11414.59 and 11790.8,
             12092.7 and 12200.38

4-8-99: RIGHT FW ET CHANGED FROM 10513 TO
             10490, RIGHT FP ET CHANGED FROM 10899 TO 10513, LEFT FP ET CHANGED
             FROM 9451 TO 9533
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9443.14 1694.16 9475.62 1690.21 9497.53 1690.21 9557.26 1688.21 9581.93 1684.21
 9621.41 1682.52 9643.26 1686.21 9763.42 1686.21 9806.79 1684.21 9929.44 1684.21
    9947 1682.89 9963.19 1681.71 9982.51 1680.21 9988.59 1682.21 10002.5 1682.21
10029.28 1678.2110052.12 1678.2110064.34 1684.6910069.46 1686.21   10090 1688.11
10122.23 1689.2110215.28 1689.5110336.61 1688.2110396.62 1688.3110487.99 1688.01
10511.72 1688.2110522.16 1687.6110572.12 1691.1910928.08 1691.1911030.08 1690.75
11081.08 1691.1111116.85 1691.11 11217.9 1690.6111307.94 1690.6111414.59 1690.26
 11790.8 1690.0511846.52 1690.2211921.73 1691.8111976.53 1691.8112032.71 1690.41
12064.67 1690.66 12092.7 1689.4912200.38 1689.6512313.66  1691.612385.08 1691.71
12479.24 1691.2112605.82 1692.31

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9443.14     .07 9557.26     .04 9643.26     .07 9929.44     .04   10090    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9929.44   10090              630     566     440              .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
 11976.512605.82
```

```
CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 16.96

INPUT
Description: GR DATA FOR SECTIONS 16.96 TO 17.95 IS BASED UPON ONE-FOOT MAPPING
             FROM CARTER-BURGESS DIGITAL TERRAIN MODEL. DATE:2-24-99
GR
             ELEVATIONS FOR SEC 16.96 TO 17.95 ARE BASED UPON CITY OF PHOENIX
             DATUM. MONTGOMERY -WATSON GR DATA ARE BASED UPON NGVD 1927 DATUM.
             THE GR DATA FOR SEC 16.96-17.95 ARE RAISED BY .21FT ON THE X1 CARD
             FOR CONVERSION TO THE NGVD 1927 DATUM
LEFT ET CHANGED FROM
             9889,9506 TO 9914 FOR BOTH FP AND FW
4-8-99: RT FW ET CHANGED
             FROM 10450 TO 10389, RT FP ET CHANGED FROM 11080 TO 10408
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9129.37    1690 9149.96    1688 9170.63    1686 9181.22    1686 9250.38    1686
 9268.83    1684 9340.93    1682 9373.32    1682 9420.61    1682 9430.52    1680
 9497.31    1678 9533.08    1678  9666.5    1678 9733.21    1678 9746.83    1680
 9756.14    1682 9764.36    1684 9771.22    1684 9781.57 1683.06 9807.96 1678.71
 9870.41 1678.21 9902.01 1678.21 9929.31 1684.21    9932 1684.21 9947.83 1684.21
    9966 1678.21 9988.98 1677.9210007.22 1676.2110075.82 1676.2110134.07 1679.61
10257.04 1680.11 10270.3 1682.6510282.57 1683.1210307.33  1684.5   10342 1684.91
10383.59 1685.4110435.94 1685.8110503.13  1684.810601.12 1684.7110660.64 1685.21
 10704.2 1685.3510830.52 1686.06 10864.9 1686.8110909.44 1688.7110920.87 1688.91
10970.87 1688.67 11018.3 1688.4211061.63 1688.6111137.84 1688.1111246.93 1688.11
11567.48 1687.4411645.69 1686.9811668.64 1686.3111730.35 1685.2111795.39 1682.91
 11904.8 1683.3211972.35 1683.8112221.54 1684.9112302.92 1685.5112482.15 1686.41
12553.87 1686.2212583.61 1686.4412619.86 1686.01

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9129.37     .07 9947.83     .0410307.33    .04510435.94    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9947.8310307.33              410   456.2     600              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 9129.37 9942.53  1689.6
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   1108012619.86

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 16.87

INPUT
Description: Bridge deck low chord and channel bed elevations are based on
             survey data by ASL Consulting (12-07-00) and JEFuller (date),
             respectively.
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9328.22    1687  9385.7  1685.7 9402.02  1685.5 9468.73  1684.7 9536.14  1683.5
 9597.17  1683.4 9654.65  1683.2 9701.49  1683.3 9755.42  1684.5 9832.07  1685.6
 9855.48  1685.7 9876.77 1671.37 9890.91 1673.51 9905.05 1673.94  9919.2 1673.14
 9933.34 1673.08 9947.48 1672.74 9961.62 1672.71 9975.76 1672.58 9989.91    1672
10004.05 1671.4810018.19  1671.410032.33 1671.1610046.48 1671.0810060.62 1670.99
10074.76 1671.22 10088.9 1670.6710103.04 1670.2510114.36 1669.9510152.83  1685.8
 10172.7  1685.610235.86  1685.210311.79  1683.110383.46  1681.710442.37  1679.9
 10503.4  1679.710553.78  1679.7 10599.2  1679.510664.49  1679.910719.84  1679.6
 10812.8  1679.910863.19  1680.110908.61  1679.710980.28  1679.211031.38  1678.8
11080.34  1678.611130.73  1678.111189.63    167811232.92  1677.711302.46  1677.8
11363.49  1678.211403.23  1678.411458.58  1678.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9328.22    .045 9855.48     .0410152.83    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9855.4810152.83              146     146     146              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9328.22 9851.87 1685.69 10153.411458.58 1685.81

BRIDGE                 RIVER: RIVER-1
REACH: Reach-1            RS: 16.865

INPUT
Description: Carefree Highway Bridge
```

Distance from Upstream XS = 1
Deck/Roadway Width = 144
Weir Coefficient = 2.7
Bridge Deck/Roadway Skew = 0
Upstream Deck/Roadway Coordinates
num= 54

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9328.22	1687	1670	9365.2	1686.75	1670	9395.1	1686.19	1670
9430.6	1685.65	1670	9466.1	1685.23	1670	9501.6	1684.93	1670
9537.1	1684.75	1670	9539.9	1684.74	1670	9572.6	1684.7	1670
9608.1	1684.77	1670	9643.6	1684.96	1670	9679.1	1685.27	1670
9714.6	1685.71	1670	9825.3	1687.25	1670	9855.2	1687.64	1670
9857.9	1687.68	1670	9857.9	1687.68	1670	9860.6	1690.18	1670
9860.6	1690.2	1680.84	9893.4	1690.5	1681.16	9928.9	1690.77	1681.23
9964.4	1690.93	1681.33	9999.9	1690.98	1681.26	10002.7	1690.98	1681.27
10035.4	1690.94	1681.13	10070.9	1690.8	1680.84	10106.4	1690.55	1680.57
10141.9	1690.2	1680.12	10141.9	1690.18	1670	10142.1	1687.68	1670
10174.7	1687.25	1670	10272.6	1685.47	1670	10277	1685.39	1670
10312.5	1684.78	1670	10348	1684.21	1670	10383.5	1683.69	1670
10419	1683.21	1670	10454.5	1682.78	1670	10490	1682.4	1670
10505.5	1682.24	1670	10525.5	1682.06	1670	10561	1681.77	1670
10596.5	1681.53	1670	10632	1681.33	1670	10667.5	1681.18	1670
10703	1681.08	1670	10738.5	1681.02	1670	10827	1680.94	1670
10914.3	1680.86	1670	11001.7	1680.34	1670	11059.9	1680	1670
11147.3	1679.48	1670	11234.6	1679.42	1670	11458.58	1678.3	1670

Upstream Bridge Cross Section Data
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9328.22	1687	9385.7	1685.7	9402.02	1685.5	9468.73	1684.7	9536.14	1683.5
9597.17	1683.4	9654.65	1683.2	9701.49	1683.3	9755.42	1684.5	9832.07	1685.6
9855.48	1685.7	9876.77	1671.37	9890.91	1673.51	9905.05	1673.94	9919.2	1673.14
9933.34	1673.08	9947.48	1672.74	9961.62	1672.71	9975.76	1672.58	9989.91	1672
10004.05	1671.48	10018.19	1671.41	10032.33	1671.16	10046.48	1671.08	10060.62	1670.99
10074.76	1671.22	10088.9	1670.67	10103.04	1670.25	10114.36	1669.95	10152.83	1685.8
10172.7	1685.61	10235.86	1685.21	10311.79	1683.11	10383.46	1681.71	10442.37	1679.9
10503.4	1679.71	10553.78	1679.7	10599.2	1679.51	10664.49	1679.91	10719.84	1679.6
10812.8	1679.91	10863.19	1680.11	10908.61	1679.71	10980.28	1679.21	11031.38	1678.8
11080.34	1678.61	11130.73	1678.11	11189.63	1678	11232.92	1677.71	11302.46	1677.8
11363.49	1678.21	11403.23	1678.41	11458.58	1678.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9328.22	.045	9855.48	.041	10152.83	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
9855.48	10152.83	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9328.22	9851.87	1685.69	10153.41	11458.58	1685.81

Downstream Deck/Roadway Coordinates
num= 54

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9330.09	1687	1670	9365.2	1686.75	1670	9395.1	1686.19	1670
9430.6	1685.65	1670	9466.1	1685.23	1670	9501.6	1684.93	1670
9537.1	1684.75	1670	9539.9	1684.74	1670	9572.6	1684.7	1670
9608.1	1684.77	1670	9643.6	1684.96	1670	9679.1	1685.27	1670
9714.6	1685.71	1670	9825.3	1687.25	1670	9855.2	1687.64	1670
9857.9	1687.68	1670	9857.9	1687.68	1670	9860.6	1690.18	1670
9860.6	1690.2	1680.84	9893.4	1690.5	1681.16	9928.9	1690.77	1681.23
9964.4	1690.93	1681.33	9999.9	1690.98	1681.26	10002.7	1690.98	1681.27
10035.4	1690.94	1681.13	10070.9	1690.8	1680.84	10106.4	1690.55	1680.57
10141.9	1690.2	1680.12	10141.9	1690.18	1670	10142.1	1687.68	1670
10174.7	1687.25	1670	10272.6	1685.47	1670	10277	1685.39	1670
10312.5	1684.78	1670	10348	1684.21	1670	10383.5	1683.69	1670
10419	1683.21	1670	10454.5	1682.78	1670	10490	1682.4	1670
10505.5	1682.24	1670	10525.5	1682.06	1670	10561	1681.77	1670
10596.5	1681.53	1670	10632	1681.33	1670	10667.5	1681.18	1670
10703	1681.08	1670	10738.5	1681.02	1670	10827	1680.94	1670
10914.3	1680.86	1670	11001.7	1680.34	1670	11059.9	1680	1670
11147.3	1679.48	1670	11234.6	1679.42	1670	11444.85	1678.3	1670

Downstream Bridge Cross Section Data
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
 9330.09  1686.9 9398.22  1685.4 9459.25  1684.6  9507.5  1684.1 9571.37  1683.3
 9633.11  1683.3 9680.66  1683.5 9716.85  1684.2 9767.23  1684.9 9809.81  1685.7
 9850.97    1686 9877.23 1671.45 9897.37 1671.29 9905.51 1671.92 9919.66 1671.98
  9933.8 1672.52 9947.94 1672.76 9962.08 1672.81 9976.22 1672.58 9990.37 1672.08
10004.51 1671.4410018.65  1671.310032.79 1671.2810046.94 1670.5410061.08 1671.17
10075.22 1670.7610089.36 1670.59 10103.5 1670.6110116.59 1670.8110118.51  1671.2
10149.03  1685.910202.96  1685.310254.76  1684.310312.25  1683.210371.15  1681.8
10386.76  1681.410439.98  1679.710491.79  1679.5 10544.3  1679.410589.01  1679.4
10643.65  1679.510696.88  1679.710742.29  1679.910792.68  1680.310838.81  1679.8
 10882.8    1680 10948.8  1679.711005.57  1679.411057.38  1679.311106.34    1679
 11161.7  1678.711215.63  1678.411267.43  1678.311325.63  1678.111371.75  1678.4
11444.85  1678.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9330.09    .045 9850.97     .0410149.03    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9850.9710149.03             .3        .5
Ineffective Flow     num=        2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9330.09 9850.97    168610149.0311444.85  1685.9

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         = 1688.08
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Piers =  3

Pier Data
Pier Station     Upstream= 9928.97    Downstream= 9928.97
Upstream     num=        2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78
Downstream     num=        2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78

Pier Data
Pier Station     Upstream=   10000    Downstream=   10000
Upstream     num=        2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78
Downstream     num=        2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78

Pier Data
Pier Station     Upstream=10071.03    Downstream=10071.03
Upstream     num=        2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78
Downstream     num=        2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum                Cd   =    1.33
       Yarnell                 KVal =    1.05
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd = ·     .8
           Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line
```

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.86

INPUT
Description: Bridge deck low chord and channel bed elevations are based on survey data by ASL Consulting (12-07-00) and JEFuller (date), respectively.

Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9330.09	1686.9	9398.22	1685.4	9459.25	1684.6	9507.5	1684.1	9571.37	1683.3
9633.11	1683.3	9680.66	1683.5	9716.85	1684.2	9767.23	1684.9	9809.81	1685.7
9850.97	1686	9877.23	1671.45	9897.37	1671.29	9905.51	1671.92	9919.66	1671.98
9933.8	1672.52	9947.94	1672.76	9962.08	1672.81	9976.22	1672.58	9990.37	1672.08
10004.51	1671.44	10018.65	1671.31	10032.79	1671.28	10046.94	1670.54	10061.08	1671.17
10075.22	1670.76	10089.36	1670.59	10103.5	1670.61	10116.59	1670.81	10118.51	1671.2
10149.03	1685.91	10202.96	1685.31	10254.76	1684.31	10312.25	1683.21	10371.15	1681.8
10386.76	1681.41	10439.98	1679.71	10491.79	1679.5	10544.3	1679.41	10589.01	1679.4
10643.65	1679.51	10696.88	1679.71	10742.29	1679.91	10792.68	1680.31	10838.81	1679.8
10882.8	1680	10948.8	1679.71	11005.57	1679.41	11057.38	1679.31	11106.34	1679
11161.7	1678.71	11215.63	1678.41	11267.43	1678.31	11325.63	1678.11	11371.75	1678.4
11444.85	1678.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9330.09	.045	9850.97	.041	10149.03	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9850.97	10149.03	888.2	879.1	778.2	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9330.09	9850.97	1686	10149.03	11444.85	1685.9

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.68

INPUT
Description:

Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9880	1682.1	9916	1676.2	9928	1673.5	9950	1662.9	9956	1662.6
9964	1666.6	9989	1666.2	10000	1662.3	10009	1662.8	10020	1662.7
10025	1664.5	10043	1665.2	10076	1665.3	10100	1664.9	10107	1662.9
10120	1662.9	10135	1661.5	10142	1665.1	10161	1665.4	10168	1664.6
10183	1664.2	10192	1664.5	10218	1663.7	10230	1662.3	10247	1661.7
10262	1662.9	10302	1664.5	10308	1664	10353	1663.9	10390	1664
10437	1663.6	10463	1663.5	10470	1662.9	10479	1663.5	10511	1662.7
10530	1661.8	10540	1661.3	10553	1661.3	10569	1662.3	10590	1666.8
10612	1675.2	10641	1674.8	10677	1675.2	10718	1675.4	10765	1675.4
10821	1675.3	10870	1675.4	10900	1675.6	10938	1675.6	10964	1676
11005	1676								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9880	.07	9989	.04	10025	.045	10100	.04	10142	.055
10218	.045	10302	.055						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9989	10025	940	997.5	1160	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.49

INPUT
Description:

Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9520	1667.1	9583	1667.6	9619	1667.4	9661	1665.7	9708	1665.1
9776	1664.9	9808	1664.1	9841	1661.9	9871	1661.5	9888	1659.1
9906	1659.2	9925	1653.7	9933	1653.9	9961	1653.8	10000	1653.3
10018	1654.5	10040	1658.6	10066	1658.9	10073	1658.1	10095	1657.8
10104	1659.1	10130	1659.5	10147	1653.7	10168	1654	10211	1653.7
10224	1655.7	10234	1655.2	10246	1655.3	10253	1656.7	10285	1657.7
10316	1658.8	10335	1659.1	10371	1658.9	10413	1657.8	10420	1656.7
10428	1657.4	10438	1657.6	10446	1656.8	10465	1657.6	10485	1659.8
10512	1662.4	10532	1663.3	10582	1664	10619	1664.5	10669	1664.7
10742	1664.8								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9520	.055	9906	.04	10040	.07	10130	.04	10224	.045
10371	.055								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9906	10040	1190	1153.6	1150	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.27

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9044	1655.1	9106	1655.3	9139	1655.6	9198	1655.9	9247	1656.1
9283	1656.3	9326	1655.9	9357	1654.9	9394	1652.7	9404	1650.9
9443	1650.4	9466	1650.5	9508	1650.7	9529	1648.7	9539	1648.6
9553	1646.7	9572	1648.2	9588	1647.6	9600	1648.6	9623	1647.5
9643	1649	9667	1650.5	9682	1650.2	9700	1650.3	9724	1649.6
9760	1650.2	9771	1648.3	9798	1647.7	9816	1646.1	9835	1647.3
9853	1647.9	9872	1649.6	9892	1649.9	9905	1648.8	9915	1648.9
9923	1648.4	9947	1648.9	9967	1643.5	9990	1642.4	10000	1639.4
10009	1639.8	10032	1640	10045	1654.9	10052	1655.9	10111	1656
10158	1656.2	10207	1656.4	10255	1656.4	10316	1656.5	10391	1656.1

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9044	.045	9508	.055	9667	.045	9872	.055	9947	.04
10045	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9947	10045	400	422.1	425	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.19

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9011	1652	9072	1652.5	9131	1652.6	9193	1652.8	9235	1652.7
9260	1651.8	9281	1649.9	9326	1647.9	9377	1645.6	9385	1644.7
9392	1645.2	9431	1646.1	9457	1646.6	9500	1646.3	9506	1645.4
9515	1646.3	9539	1646.3	9548	1645.2	9556	1645.8	9574	1645.2
9600	1643.7	9613	1641.7	9624	1640.9	9639	1641.8	9652	1641.7
9664	1642.7	9687	1642.9	9695	1642.4	9709	1642.5	9730	1644.9
9760	1646.3	9781	1646.9	9807	1647.2	9817	1646.2	9833	1645.8
9855	1646.5	9881	1646.9	9907	1644.9	9934	1644.4	9950	1643.9
9966	1638.9	9981	1639.7	10000	1637.5	10018	1637.8	10034	1637.9
10048	1639.1	10077	1652	10101	1652.8	10139	1653.2	10192	1653.3
10245	1653	10291	1652.7	10341	1652.4	10389	1652.2		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9011	.045	9600	.055	9730	.045	9950	.04	10077	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10077	540	645.6	660	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.07

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9258	1648.3	9327	1648.3	9384	1648.3	9446	1648.1	9494	1648
9536	1647.3	9578	1646.8	9614	1645.7	9631	1644.4	9648	1641.8
9701	1641.5	9720	1641.1	9734	1638.4	9750	1637.8	9760	1639.7
9781	1637.5	9791	1639.3	9822	1639.5	9854	1638.8	9877	1638.8
9884	1639.4	9902	1640.1	9948	1640.1	9974	1638.8	9986	1634.8
10000	1634.3	10037	1634.7	10044	1635.4	10071	1636.2	10089	1636.3
10105	1635.5	10113	1635.5	10130	1643.3	10166	1644.3	10196	1645.7
10222	1646.5	10267	1646.6	10315	1646.7	10350	1646.2	10392	1645.8
10433	1645.6	10494	1645.5						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9258	.035	9760	.055	9974	.04	10130	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974	10130	980	950.3	840	.1	.3

CROSS SECTION RIVER: RIVER-1

REACH: Reach-1 RS: 15.89

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9095	1636.6	9172	1637	9243	1636.9	9312	1637.2	9359	1637.1
9398	1637.6	9428	1638.1	9460	1637.5	9490	1634	9517	1630.6
9522	1631.6	9539	1631.8	9550	1631.4	9571	1631.6	9626	1632.6
9676	1633.3	9714	1633.4	9744	1632.5	9775	1631.7	9809	1630.9
9818	1629.2	9822	1629.2	9831	1630.6	9850	1631.6	9866	1632.4
9887	1632.6	9901	1632.1	9919	1636.5	9934	1635.9	9949	1633.3
9969	1633.2	9981	1632.2	10000	1626.9	10011	1627	10018	1628.2
10035	1627.9	10056	1626.8	10068	1626.8	10096	1630.8	10121	1630.7
10172	1631.1	10182	1630.2	10194	1630.1	10210	1633.5	10224	1635.6
10243	1636.1	10296	1636.9	10337	1637	10370	1637.2	10414	1637.1
10440	1636.4	10469	1636.4	10477	1635.7	10492	1636.7	10535	1636.9
10578	1637.6	10598	1637.2	10621	1637.2				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9095	.045	9969	.04	10096	.055	10224	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969	10096	700	738.4	730	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.75

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9040	1633.1	9098	1633.1	9146	1632.7	9185	1632	9268	1632
9319	1631.5	9364	1630.5	9404	1630.7	9431	1629.9	9467	1626.7
9481	1626.1	9500	1624.3	9515	1624.3	9534	1623.4	9549	1619.5
9557	1619.5	9566	1622.4	9580	1624.1	9602	1624.8	9637	1625.6
9689	1626.1	9712	1626	9736	1625	9751	1625.4	9769	1627.1
9816	1628.7	9835	1628.8	9850	1627.8	9875	1628	9933	1628.6
9944	1627.2	9963	1626.9	9967	1626.1	9977	1625.7	10000	1619.8
10015	1620.1	10027	1621.2	10050	1621.5	10070	1616.7	10079	1616.3
10102	1627.5	10116	1627.9	10121	1627.5	10138	1628.4	10174	1629.3
10210	1630.3	10259	1631.2	10307	1631.4	10370	1631.7	10411	1631.7

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9040	.035	9534	.04	9580	.045	9977	.04	10102	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977	10102	880	1048.4	1030	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.55

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9645	1628	9680	1627.1	9703	1626.7	9731	1626.5	9761	1626.1
9790	1625.3	9822	1623.7	9835	1622.3	9858	1618.7	9869	1619.5
9906	1619.7	9935	1619.5	9954	1618.8	9972	1615.4	9982	1615.3
9991	1613.8	10000	1613.9	10030	1614.7	10057	1615.2	10078	1614.9
10093	1613.4	10104	1614.5	10126	1617.5	10147	1619.4	10184	1620.5
10222	1620.7	10247	1620.5	10266	1620.2	10278	1619.4	10314	1618.9
10326	1619.4	10343	1620	10368	1624.2	10381	1625	10410	1625.1
10453	1625.3	10483	1625.2	10525	1625.1	10531	1625		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9645	.035	9954	.04	10147	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9954	10147	730	755.3	550	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.41

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

9542	1618	9643	1618.6	9676	1618.9	9683	1620.7	9694	1619
9751	1619.4	9787	1619.7	9830	1620	9867	1619.2	9907	1619.4
9940	1619.7	9968	1618.7	9979	1615.1	9993	1609.8	10000	1609.2
10009	1608.3	10021	1607.6	10027	1609.7	10043	1610.4	10053	1610.4
10058	1611.1	10070	1612.8	10077	1613.1	10085	1611.8	10096	1612
10106	1610.1	10113	1611.9	10124	1613	10135	1613	10157	1612.5
10178	1611.8	10194	1612	10212	1610.2	10221	1610.9	10245	1610.4
10257	1609.6	10282	1609.4	10297	1608.7	10310	1610.1	10324	1611
10333	1611	10353	1614.7	10383	1618.6	10403	1620.1	10426	1620.5
10440	1621.2	10464	1619.6	10479	1617.9	10496	1618.1	10517	1619.3
10534	1620	10569	1621	10607	1622	10642	1622.6	10678	1622.9
10732	1623	10769	1623.1						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9542	.035	9968	.04	10070	.055	10333	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968	10070	980	968.9	950	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9542	9940	1619.7

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.22

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9749	1612	9816	1611.9	9893	1611.1	9937	1610.5	9977	1609.1
9996	1599.9	10000	1599.4	10022	1599.2	10041	1598.9	10057	1602.7
10077	1605.6	10091	1606.6	10113	1606.1	10126	1606.8	10151	1607.7
10166	1607.9	10191	1606.7	10210	1606	10234	1606.8	10242	1605.9
10249	1606.2	10260	1604.1	10269	1605.4	10282	1605.1	10301	1602
10310	1601.5	10327	1601.9	10348	1607.8	10374	1608.2	10413	1608
10439	1607.9	10461	1604.5	10480	1607.3	10507	1607.9	10527	1609.1
10570	1611	10605	1612.3	10657	1613.6	10672	1613.8	10708	1613.4
10752	1613.6	10797	1614.3	10850	1615.1				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9749	.035	9977	.04	10091	.055	10282	.04	10348	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977	10091	535	553.1	600	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.12

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9503	1606.8	9545	1606.7	9620	1606.5	9665	1606.2	9703	1605.5
9754	1604.5	9762	1603.8	9792	1604.4	9836	1603.5	9865	1603.5
9886	1602.9	9903	1603.3	9928	1603.9	9975	1604.1	10000	1596.3
10009	1596.9	10015	1596.4	10032	1596.7	10059	1595.8	10070	1600.2
10087	1601.3	10109	1601.7	10130	1602.2	10144	1602.4	10156	1601.5
10176	1602.1	10205	1602.1	10213	1601.7	10230	1602.2	10258	1602.8
10282	1595.4	10302	1596.7	10319	1597.2	10351	1601.5	10370	1600.3
10378	1601.1	10387	1601.1	10417	1603.1	10441	1603.4	10480	1603.1
10493	1602.9	10513	1603.8	10532	1604.1	10546	1606.5	10564	1606.1
10587	1607.2	10621	1608.2	10657	1609.1	10716	1609.8	10769	1610.4
10822	1610.7								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9503	.035	9975	.04	10087	.055	10258	.04	10351	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975	10087	255	283.6	330	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.06

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9663	1606.6	9685	1606.5	9707	1605.7	9733	1603	9751	1599.7

9759	1599	9764	1599.5	9782	1600.1	9800	1600.6	9836	1600.6
9872	1601.4	9917	1602.1	9972	1602.2	9988	1597.9	10000	1593
10010	1591.5	10020	1591.3	10043	1594.5	10060	1593.9	10070	1595.3
10089	1597.5	10109	1598	10126	1597.8	10138	1595.7	10152	1596.7
10174	1600.2	10205	1600.1	10229	1593.4	10246	1593.7	10268	1596.4
10283	1596.6	10298	1597.3	10314	1597.8	10323	1597.1	10337	1598.4
10350	1597.4	10367	1600	10390	1601.4	10411	1601.3	10441	1599.6
10453	1595.7	10470	1600.3	10480	1600.7	10495	1602.7	10517	1603.6
10549	1605.1	10581	1606	10621	1606.6	10667	1606.9	10713	1607.1
10776	1607.2								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9663	.045	9972	.04	10089	.055	10205	.04	10268	.045
10441	.04	10470	.035						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10089	670	930.3	950	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.89

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9234	1601.5	9270	1601.3	9318	1599.7	9337	1598.4	9377	1597.4
9406	1597	9434	1596.9	9460	1597.5	9477	1598.4	9494	1598.5
9511	1597	9549	1595.3	9572	1593.2	9577	1593.5	9587	1590.8
9606	1591.2	9626	1591	9633	1592	9659	1593	9671	1592.7
9683	1593.5	9702	1593.6	9714	1592.4	9741	1592.5	9775	1592.4
9804	1592.7	9817	1591.3	9847	1591.4	9869	1591.8	9890	1592.2
9906	1593	9927	1592.5	9938	1591.9	9949	1589.9	9956	1589.9
9979	1587.2	9995	1583.3	10000	1583.2	10013	1583.3	10032	1583.8
10042	1588	10059	1596.4	10087	1597.2	10101	1598.2	10141	1599.3
10186	1599.6	10236	1600.2	10284	1600.4	10319	1600.5		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9234	.035	9577	.055	9633	.045	9938	.04	10059	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9938	10059	700	756.4	760	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.74

INPUT
Description: CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW

Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9253	1594.6	9384	1594.6	9435	1593.5	9495	1592.2	9526	1591.7
9540	1590.5	9564	1589.6	9615	1589.3	9650	1589	9663	1587.4
9705	1587.4	9720	1587	9769	1588.5	9791	1588.3	9809	1587.1
9837	1586.1	9853	1585.5	9871	1585.1	9891	1585.5	9917	1584.9
9952	1585	9976	1587.3	9988	1581.8	10000	1581.8	10024	1582.1
10057	1581.7	10076	1588.3	10095	1588.3	10125	1590.2	10145	1591
10172	1591.6	10203	1591.5	10225	1591.5	10248	1591.6	10375	1591.7
10635	1592	10690	1592.6						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9253	.035	9650	.055	9769	.035	9976	.04	10076	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976	10076	1180	1070.9	970	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.54

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8984	1584.8	9072	1584.8	9160	1584.7	9220	1584.7	9283	1584.9
9355	1584.7	9421	1584.5	9499	1584.2	9525	1583.8	9546	1583.4
9563	1583.7	9621	1583.4	9683	1583.8	9715	1583	9741	1583.4
9767	1582.9	9798	1583.5	9818	1583.9	9845	1584.2	9892	1584

9926	1583.2	9950	1581.9	9970	1574.4	9986	1574	10000	1571.6
10045	1576.7	10066	1574.9	10080	1577.8	10110	1579.5	10136	1577.7
10153	1578.5	10177	1578.1	10199	1576.3	10222	1576.9	10259	1576.6
10273	1577.7	10287	1577.7	10306	1578.9	10354	1578.4	10384	1578.1
10410	1577	10416	1578.1	10428	1578.3	10437	1577.7	10458	1580.1
10480	1583	10495	1583.8	10523	1584.2	10556	1584.8	10588	1585
10623	1584.4	10669	1583.5	10695	1583.4	10738	1583.4	10762	1583.8
10808	1584.1	10821	1583.9	10881	1583.9	10936	1584.2	10999	1584.2
11072	1584.2	11131	1584.3	11205	1584.1	11269	1584.2	11381	1584.9

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8984	.035	9950	.04	10110	.055	10177	.07	10306	.055
10495	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10110	1410	1273.2	1150	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.3

INPUT
Description: The following GR record has been modified as per discussion with the FEMA technical evaluator. From station 8450 to station 9500, the elevations are read from the topographic map. From station 9563 to station station 11361, the elevations remain the same as provided by the Aerial Mapping Company, Inc (AMCI) (March 17, 1998).

Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8450	1576.2	8550	1575.9	8650	1574.1	8750	1573.7	8850	1573.5
8950	1573.4	9050	1573.3	9150	1572.5	9250	1572.5	9350	1571.9
9450	1571.9	9500	1573.5	9563	1573.8	9626	1574.2	9652	1573.5
9672	1573.1	9707	1573.8	9731	1573.7	9769	1573.8	9788	1573.2
9836	1573.2	9878	1572.9	9906	1572.4	9923	1571.6	9941	1570.4
9961	1565.1	9967	1565.2	9973	1560	9983	1560.3	10000	1559.6
10011	1566.5	10027	1570	10045	1570.1	10052	1569.4	10062	1570.1
10097	1571	10131	1571.2	10157	1571.1	10191	1572.5	10211	1572.9
10251	1572.6	10297	1572.3	10351	1572.5	10386	1572.2	10410	1571.8
10417	1572.1	10437	1571.7	10448	1571.7	10480	1571.5	10515	1571.6
10552	1572.7	10571	1572.9	10608	1572.7	10642	1572.4	10681	1571.4
10735	1571.6	10765	1571.9	10792	1572	10804	1571.2	10811	1571.8
10852	1573.2	10899	1575.9	10931	1577.1	10967	1577.9	10992	1578.4
11034	1578.7	11096	1578.6	11179	1578.4	11233	1578.2	11273	1577.7
11295	1582.1	11336	1582.8						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8450	.045	9923	.04	10027	.045	10681	.07	10852	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9923	10027	1010	1213.6	1210	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.07

INPUT
Description: CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW

Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8530	1565.4	8652	1564	8685	1562	8705	1560.7	8805	1560.7
8920	1562	9043	1562.4	9116	1562.8	9185	1563.1	9201	1562.8
9250	1562.8	9286	1563.3	9321	1563.7	9353	1563.4	9394	1562.5
9417	1561.5	9462	1561.4	9530	1562.3	9554	1562.4	9566	1562
9614	1562	9680	1562.3	9746	1563.1	9814	1563.6	9855	1564
9879	1564.3	9898	1560.9	9904	1561.4	9924	1558.5	9938	1558.9
9959	1558.9	9972	1557.5	9978	1557.5	10000	1558.5	10020	1562
10040	1562.6	10059	1564.5	10077	1564	10125	1563.5	10151	1563.1
10166	1562.6	10176	1562.7	10201	1562.2	10217	1563.1	10249	1563
10300	1563.1	10338	1563	10381	1563.2	10396	1563.1	10404	1562.3
10408	1563.1	10454	1563.1	10499	1563.1	10516	1564.1	10571	1565.5
10608	1566	10656	1565.9	10710	1565.8	10758	1565.6	10813	1564.7
10848	1564.3	10873	1564.8	10923	1565.1	10950	1570	10989	1570.8

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8530	.045	8705	.07	8805	.045	9879	.04	10059	.045
10396	.07	10499	.035						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9879 10059 1050 1134.1 1100 .1 .3
Ineffective Flow num= 1
Sta L Sta R Elev
10608 10989

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.86

INPUT
Description: CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW

Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8212	1556	8550	1554	8600	1553	8617	1553.4	8685	1552.4
8708	1551.6	8749	1551.5	8759	1550.6	8767	1551.7	8788	1552.1
8817	1551.5	8863	1554.3	8895	1555.1	8908	1555.4	8935	1555.1
8975	1555	9022	1555.5	9072	1556.1	9125	1556.9	9165	1557.1
9223	1557.3	9242	1556.6	9263	1557.3	9298	1557.4	9319	1557
9330	1556.1	9344	1553.5	9379	1552.5	9393	1551.4	9404	1552.9
9416	1552.7	9420	1551.9	9429	1553.3	9446	1553.2	9464	1549.8
9472	1549.3	9494	1549.8	9513	1553	9535	1553.6	9596	1553.4
9605	1552.9	9613	1553.3	9634	1553.5	9666	1553.4	9716	1553.2
9727	1552.5	9739	1553.4	9770	1552.6	9784	1553.6	9803	1553.4
9819	1551.8	9831	1551.2	9842	1552.5	9855	1551.1	9864	1553.3
9885	1553.3	9919	1551.8	9936	1549	9948	1549	9970	1551.6
9983	1550.4	9991	1547.6	10000	1546.3	10009	1551.6	10023	1554.6
10042	1555.7	10083	1555.6	10149	1554.3	10159	1550.9	10171	1552.6
10197	1554.4	10232	1554.7	10271	1556	10327	1557	10379	1557.5
10433	1557.7	10477	1557.5						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8212	.045	8685	.055	8817	.045	9446	.04	9513	.055
9885	.04	10042	.055	10149	.04	10197	.035		

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9885 10042 1060 1049.1 1050 .1 .3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.66

INPUT
Description:
Station Elevation Data num= 92

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8244	1548.4	8287	1548.9	8335	1549	8352	1548.3	8399	1548.2
8462	1548.3	8514	1548	8594	1547.5	8663	1546.9	8720	1546
8738	1545.8	8780	1544.9	8828	1544.1	8914	1543.6	8917	1543.1
8921	1543.7	8985	1544	9048	1544.6	9086	1545.1	9138	1545.3
9173	1546.1	9234	1546.5	9275	1546.3	9318	1546	9360	1545.7
9383	1545.3	9436	1545.1	9449	1544.5	9457	1545	9467	1544.1
9477	1545.4	9492	1544.9	9512	1543.5	9528	1540.2	9540	1540.5
9550	1542.2	9572	1546.6	9585	1546.4	9600	1542.7	9619	1542.8
9627	1543.3	9643	1542.4	9655	1543.1	9667	1546	9689	1546.6
9709	1546.7	9717	1546.1	9736	1546	9744	1544.6	9753	1546
9775	1545.3	9791	1546.1	9829	1546.1	9852	1547.5	9878	1547.5
9894	1546.7	9941	1546.7	9956	1545.9	9988	1544.6	10000	1542.1
10006	1542.3	10015	1543.9	10055	1543	10063	1543.5	10083	1546.5
10108	1546.6	10119	1546	10133	1547.2	10145	1546.3	10160	1547.2
10177	1546.2	10193	1546.6	10207	1546.1	10246	1546.4	10280	1546.8
10324	1547.3	10357	1547.3	10379	1546.7	10392	1545.6	10408	1543.2
10430	1543.9	10442	1542.9	10465	1542.6	10486	1548.6	10509	1549.3
10557	1549.5	10592	1549.8	10646	1549.9	10686	1549.4	10727	1549.5
10784	1549.4	10846	1549.5						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8244	.045	8828	.055	8985	.045	9477	.04	9667	.055
9941	.04	10083	.055	10357	.04	10486	.035		

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9941 10083 500 549.1 540 .1 .3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.55

INPUT

Description:

Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8416	1544.6	8496	1544.5	8598	1543.9	8689	1543.5	8797	1542.8
8877	1542.2	8929	1541.9	8950	1541.3	8963	1540.3	8985	1539.6
8993	1540.1	9040	1540.1	9081	1539.8	9104	1540.4	9157	1540
9241	1540.8	9311	1541.2	9346	1540.5	9443	1541	9451	1540.2
9464	1541.2	9477	1541	9510	1541.9	9558	1542.7	9592	1543.1
9645	1543.3	9688	1543.1	9715	1541.9	9736	1539.8	9742	1540.1
9757	1538.2	9776	1537.4	9787	1532.2	9804	1535.6	9828	1540.7
9836	1539.7	9855	1541.7	9877	1541.6	9897	1542	9930	1541.4
9965	1541.8	9988	1535.8	10000	1535.2	10010	1538.4	10031	1540.8
10045	1540.9	10054	1540.5	10065	1541.3	10098	1541.2	10123	1541.8
10132	1541.3	10150	1542.7	10176	1541.1	10191	1539.5	10208	1538.7
10219	1537.7	10233	1539.2	10262	1541.4	10270	1541.1	10283	1542
10307	1542.3	10349	1541.4	10370	1537.3	10380	1537.9	10394	1537
10403	1538.6	10432	1541	10456	1542.6	10494	1543	10550	1544.4
10623	1544.5	10680	1545	10743	1545.2	10802	1544.8	10856	1544.6
10907	1544.2	10973	1544.1	10985	1545.1	10993	1545.3		

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8416	.045	8929	.055	9104	.045	9715	.04	9828	.055
9965	.04	10031	.055	10150	.04	10262	.055	10349	.04
10456	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10031	740	787.3	850	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.4

INPUT
Description: Q100 INCREASED FROM 23300,23300 TO 26700,26700 CFS DUE TO UPSTREAM DEVELOPMENT.

Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8520	1540	8940	1538	9105	1536	9155	1535	9197	1536
9202	1536.2	9212	1536	9214.5	1535.9	9217	1536	9287	1536.5
9359	1536	9414	1535.5	9474	1536	9641	1537.5	9670	1537.6
9692	1536.4	9719	1534.6	9732	1527.4	9748	1530.8	9770	1532.1
9782	1530	9800	1534.1	9820	1533.9	9840	1535.3	9849	1534.9
9866	1535.8	9908	1536.5	9939	1537.1	9968	1536.9	9980	1535.2
9994	1529	10000	1528.7	10010	1529.7	10033	1534.5	10063	1534.1
10084	1534.3	10102	1534.3	10133	1536	10164	1536.4	10177	1535
10194	1535.9	10209	1535.2	10246	1526.8	10252	1528.5	10269	1529.1
10289	1537.1	10319	1537.5	10361	1536.6	10379	1535.1	10395	1535.3
10422	1536	10447	1535.1	10465	1535.7	10514	1535.8	10539	1535.1
10600	1535	10653	1535.4	10687	1535.5	10726	1535	10744	1534.3
10772	1534.4	10797	1535.1	10833	1534.7	10874	1535.5	10910	1535.5
10944	1535.1	11001	1534.7	11027	1535.1	11043	1539	11070	1538.8
11080	1537.4	11101	1540.1	11142	1539.6				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8520	.045	9670	.04	9800	.045	9968	.04	10033	.055
10209	.04	10289	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968	10033	650	678.6	590	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.28

INPUT
Description: CROSS-SECTION AT WHICH FLOWS TO CAP OVERCHUTES 1 AND 2 RECOMBINE. WSEL MATCHES AT THIS CROSS-SECTION

Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8217	1536	8297	1534.9	8552	1534.2	8677	1534.3	8812	1534
8979	1532	9107	1530	9165	1529.3	9205	1530	9255	1532
9337	1532.2	9390	1531.5	9439	1531.5	9484	1530.1	9507	1525.7
9523	1526	9537	1529.8	9605	1530.1	9671	1530.9	9682	1530.2
9709	1530.4	9726	1531.2	9776	1531.3	9840	1530.4	9851	1529.7
9901	1530.9	9962	1531.6	9975	1530.6	9991	1522.9	10000	1522.6
10034	1522.9	10052	1530.4	10083	1530.6	10097	1527.4	10110	1531.2
10143	1531	10169	1531.2	10193	1532.3	10222	1532.9	10250	1532.2
10302	1532.2	10347	1532.2	10363	1531.6	10389	1532	10421	1531.1

10475	1531.1	10529	1531.1	10581	1529.7	10594	1530.3	10634	1530.6
10654	1530	10667	1530.5	10697	1529.9	10727	1531.7	10771	1532.2
10840	1532.9	10884	1533.5	10956	1533.9	10961	1533.3	10969	1534.6
10995	1534.9	11002	1534	11019	1533.5	11025	1534.9	11065	1535.4

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8217	.045	9107	.07	9205	.045	9484	.04	9537	.045
9962	.04	10052	.045						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9962 10052 0 0 0 .1 .3
Ineffective Flow num= 1
Sta L Sta R Elev
8217 9537

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach-1	13.28	26700.0	1522.6	1533.7	1533.7	1534.9	0.007372	12.7	3992.1	2106.5	0.8
Reach-1	13.28	26700.0	1522.6	1533.7	1533.7	1534.9	0.007139	12.5	3945.0	1905.0	0.8
Reach-1	13.4	26700.0	1528.7	1538.0	1537.0	1538.4	0.004102	7.6	5608.0	2108.7	0.6
Reach-1	13.4	26700.0	1528.7	1538.0	1537.0	1538.4	0.004235	7.7	5540.7	2096.5	0.6
Reach-1	13.55	26700.0	1535.2	1542.9	1542.8	1543.9	0.012936	11.7	3484.5	1578.3	1.0
Reach-1	13.55	26700.0	1535.2	1542.9	1542.8	1543.9	0.012497	11.6	3532.1	1584.1	0.9
Reach-1	13.66	26700.0	1542.1	1548.0	1547.1	1548.4	0.006326	7.0	4948.7	1965.7	0.6
Reach-1	13.66	26700.0	1542.1	1548.0	1547.1	1548.4	0.006452	7.1	4910.4	1955.7	0.7
Reach-1	13.86	26700.0	1546.3	1555.8	1555.5	1556.6	0.009373	9.8	4128.0	1741.1	0.8
Reach-1	13.86	26700.0	1546.3	1555.8	1555.5	1556.6	0.009195	9.7	4151.6	1729.7	0.8
Reach-1	14.07	26700.0	1557.5	1565.0	1564.5	1565.5	0.007320	8.8	4905.3	2080.7	0.7
Reach-1	14.07	26700.0	1557.5	1564.9	1564.6	1565.5	0.007442	8.9	4852.1	1928.6	0.7
Reach-1	14.3	26700.0	1559.6	1574.7	1574.7	1575.6	0.004784	11.0	5349.4	2262.8	0.6
Reach-1	14.3	26700.0	1559.6	1574.7	1574.7	1575.6	0.004803	11.0	5312.6	2213.3	0.6
Reach-1	14.54	26700.0	1571.6	1582.6	1582.3	1584.6	0.011116	13.9	2736.9	539.0	0.9
Reach-1	14.54	26700.0	1571.6	1582.6	1582.3	1584.6	0.011074	13.9	2740.3	539.2	0.9
Reach-1	14.74	26700.0	1581.7	1591.6	1591.0	1593.2	0.005904	12.0	2938.6	781.4	0.7
Reach-1	14.74	26700.0	1581.7	1591.7	1591.0	1593.3	0.006132	12.3	2803.2	693.0	0.7
Reach-1	14.89	26700.0	1583.2	1596.3	1596.3	1598.5	0.007794	14.1	2664.2	532.6	0.8
Reach-1	14.89	26700.0	1583.2	1596.3	1596.3	1598.5	0.007707	14.1	2675.3	533.1	0.8
Reach-1	15.06	26700.0	1591.3	1603.0	1602.3	1604.3	0.005587	11.1	3362.9	770.8	0.7
Reach-1	15.06	26700.0	1591.3	1603.0	1602.1	1604.3	0.005635	11.2	3352.2	770.3	0.7
Reach-1	15.12	26700.0	1595.8	1605.2	1605.2	1606.9	0.008722	12.7	2827.1	822.4	0.8
Reach-1	15.12	26700.0	1595.8	1605.2	1605.2	1606.9	0.009018	12.9	2743.2	743.5	0.9
Reach-1	15.22	26700.0	1598.9	1610.2	1610.2	1612.2	0.009111	14.1	2582.6	604.7	0.9
Reach-1	15.22	26700.0	1598.9	1610.2	1610.2	1612.2	0.008811	13.9	2614.4	606.2	0.9
Reach-1	15.41	26700.0	1607.6	1618.4	1616.7	1619.9	0.006996	11.8	2863.0	514.2	0.8
Reach-1	15.41	26700.0	1607.6	1618.4	1616.7	1619.9	0.007172	11.9	2839.2	438.6	0.8
Reach-1	15.55	26700.0	1613.4	1623.0	1622.9	1625.0	0.007952	12.8	2482.1	532.2	0.8
Reach-1	15.55	26700.0	1613.4	1623.0	1622.9	1625.0	0.007864	12.7	2491.6	532.3	0.8
Reach-1	15.75	26700.0	1616.3	1630.0	1629.3	1631.2	0.004905	11.2	3333.3	769.7	0.7
Reach-1	15.75	26700.0	1616.3	1630.0	1629.2	1631.3	0.005018	11.3	3231.3	720.9	0.7
Reach-1	15.89	26700.0	1626.8	1635.5	1635.5	1637.3	0.010358	13.7	2900.6	724.5	0.9

Reach-1	15.89	26700.0	1626.8	1635.5	1635.5	1637.3	0.010358	13.7	2900.6	724.5	0.9
Reach-1	16.07	26700.0	1634.3	1644.0	1643.7	1646.0	0.008036	13.3	2657.9	520.5	0.8
Reach-1	16.07	26700.0	1634.3	1644.0	1643.7	1646.0	0.008037	13.3	2657.7	520.4	0.8
Reach-1	16.19	26700.0	1637.5	1648.8	1648.5	1650.3	0.006226	12.5	3315.6	763.8	0.7
Reach-1	16.19	26700.0	1637.5	1648.8	1648.5	1650.3	0.006206	12.5	3311.9	754.8	0.7
Reach-1	16.27	26700.0	1639.4	1652.8	1652.8	1654.8	0.007406	14.2	3012.4	651.5	0.8
Reach-1	16.27	26700.0	1639.4	1652.8	1652.8	1654.8	0.007381	14.2	3016.3	651.6	0.8
Reach-1	16.49	26700.0	1653.3	1661.8	1660.9	1663.1	0.006947	11.5	3055.4	654.6	0.8
Reach-1	16.49	26700.0	1653.3	1661.8	1660.9	1663.1	0.006967	11.5	3052.1	654.2	0.8
Reach-1	16.68	26700.0	1662.3	1669.5	1667.6	1670.3	0.005864	9.4	3701.4	660.6	0.7
Reach-1	16.68	26700.0	1662.3	1669.5	1667.6	1670.3	0.005855	9.4	3703.2	660.6	0.7
Reach-1	16.86	27300.0	1670.5	1678.7	1678.7	1682.2	0.012826	14.9	1829.0	554.7	1.0
Reach-1	16.86	27300.0	1670.5	1678.7	1678.7	1682.2	0.012826	14.9	1829.0	270.0	1.0
Reach-1	16.865	Bridge									
Reach-1	16.87	27300.0	1669.9	1685.3	1679.1	1686.2	0.001538	7.6	3599.2	1921.0	0.4
Reach-1	16.87	27300.0	1669.9	1685.3	1679.1	1686.2	0.001538	7.6	3599.2	1411.4	0.4
Reach-1	16.96	27300.0	1676.2	1686.0	1684.8	1687.7	0.006471	10.8	2853.9	1561.0	0.7
Reach-1	16.96	27300.0	1676.2	1685.9	1684.8	1687.8	0.006985	11.1	2540.0	1207.8	0.8
Reach-1	17.06	27300.0	1678.2	1690.0	1689.4	1691.3	0.005862	11.3	3827.9	1052.4	0.7
Reach-1	17.06	27300.0	1678.2	1690.2	1689.4	1691.5	0.005864	11.5	3706.8	902.8	0.7
Reach-1	17.18	27300.0	1686.2	1695.3	1695.3	1697.0	0.009207	13.3	2865.4	857.2	0.9
Reach-1	17.18	27300.0	1686.2	1695.3	1695.3	1697.0	0.009233	13.3	2826.4	792.0	0.9
Reach-1	17.3	27300.0	1692.2	1701.3	1701.3	1702.8	0.007557	12.8	3769.1	1035.6	0.8
Reach-1	17.3	27300.0	1692.2	1701.2	1701.2	1702.8	0.007682	12.9	3673.4	961.1	0.8
Reach-1	17.39	27300.0	1696.2	1705.4	1705.4	1707.1	0.008541	12.0	3169.4	1085.5	0.8
Reach-1	17.39	27300.0	1696.2	1705.3	1705.3	1707.2	0.008927	12.2	2970.1	905.8	0.8
Reach-1	17.48	27300.0	1702.2	1709.5	1709.5	1711.0	0.008642	12.0	3309.1	962.9	0.8
Reach-1	17.48	27300.0	1702.2	1709.5	1709.5	1711.1	0.008771	12.1	3181.5	870.2	0.8
Reach-1	17.57	27300.0	1702.2	1714.0	1714.0	1715.7	0.006889	12.5	3383.3	889.9	0.8
Reach-1	17.57	27300.0	1702.2	1713.9	1713.9	1715.7	0.007197	12.8	3196.7	769.1	0.8
Reach-1	17.65	27300.0	1704.2	1717.4	1717.4	1719.0	0.005370	13.2	3639.3	903.7	0.7
Reach-1	17.65	27300.0	1704.2	1717.3	1717.3	1719.0	0.005476	13.3	3567.2	862.8	0.7
Reach-1	17.78	27300.0	1713.4	1721.9	1721.5	1723.1	0.007738	12.0	3590.8	948.9	0.8
Reach-1	17.78	27300.0	1713.4	1721.9	1721.5	1723.1	0.007519	11.9	3623.3	946.1	0.8
Reach-1	17.84	27300.0	1718.2	1724.5	1724.3	1725.9	0.009558	11.6	3116.7	965.8	0.9
Reach-1	17.84	27300.0	1718.2	1724.4	1724.3	1726.0	0.009851	11.7	3036.7	916.2	0.9
Reach-1	17.95	27300.0	1722.2	1730.1	1730.1	1731.8	0.010079	12.9	3058.4	900.3	0.9
Reach-1	17.95	27300.0	1722.2	1730.0	1730.0	1731.8	0.010439	13.0	3013.9	819.5	0.9
Reach-1	18.09	27700.0	1727.4	1734.8	1733.6	1735.5	0.004778	8.8	4967.6	1505.5	0.6
Reach-1	18.09	27700.0	1727.4	1735.0	1733.4	1735.8	0.005404	9.5	4162.6	920.3	0.7

Reach-1	18.16	27700.0	1728.8	1736.8	1736.7	1738.2	0.011086	13.3	3310.4	988.8	0.9
Reach-1	18.16	27700.0	1728.8	1737.2	1736.6	1738.4	0.008830	12.2	3441.6	810.9	0.8
Reach-1	18.23	27700.0	1730.0	1741.9	1741.9	1743.2	0.007537	13.6	4155.7	1317.0	0.8
Reach-1	18.23	27700.0	1730.0	1741.9	1741.9	1743.6	0.008923	14.8	3356.5	804.7	0.9
Reach-1	18.29	27700.0	1733.5	1743.9	1742.2	1744.7	0.004053	9.6	4330.6	1144.3	0.6
Reach-1	18.29	27700.0	1733.5	1744.3	1742.2	1745.1	0.003485	9.2	4169.3	712.9	0.5
Reach-1	18.49	27700.0	1741.7	1750.4	1750.4	1752.2	0.013275	14.9	2942.7	826.2	1.0
Reach-1	18.49	27700.0	1741.7	1750.4	1750.4	1752.2	0.013214	14.9	2947.8	826.5	1.0
Reach-1	18.57	27700.0	1744.4	1754.9	1754.3	1756.3	0.007411	12.6	3830.3	942.5	0.8
Reach-1	18.57	27700.0	1744.4	1754.9	1754.3	1756.2	0.007433	12.6	3825.5	942.4	0.8
Reach-1	18.74	27300.0	1755.0	1761.6	1760.6	1762.5	0.008627	9.1	3672.8	1150.0	0.7
Reach-1	18.74	27300.0	1755.0	1761.6	1760.6	1762.5	0.008608	9.1	3634.8	876.2	0.7
Reach-1	18.84	27300.0	1755.7	1765.8	1764.6	1766.8	0.008925	9.8	3434.9	1098.3	0.7
Reach-1	18.84	27300.0	1755.7	1765.8	1764.6	1766.8	0.008936	9.8	3433.6	702.0	0.7
Reach-1	18.96	27300.0	1762.2	1771.4	1771.4	1772.6	0.010465	12.2	3946.1	1436.9	0.7
Reach-1	18.96	27300.0	1762.2	1771.4	1771.3	1772.7	0.011412	12.7	3581.8	1018.9	0.8
Reach-1	19.07	27300.0	1764.8	1776.4	1775.6	1777.0	0.005187	9.0	5067.5	1627.1	0.5
Reach-1	19.07	27300.0	1764.8	1776.7	1775.7	1777.4	0.005419	9.4	4401.0	1061.0	0.6
Reach-1	19.18	27300.0	1770.0	1780.8	1780.8	1782.4	0.014737	12.7	3008.3	841.6	0.9
Reach-1	19.18	27300.0	1770.0	1780.8	1780.8	1782.4	0.014622	12.6	3016.6	841.7	0.9
Reach-1	19.26	27300.0	1773.0	1786.3	1785.4	1787.4	0.008109	12.2	3692.5	1603.0	0.7
Reach-1	19.26	27300.0	1773.0	1786.3	1785.4	1787.4	0.008147	12.2	3686.8	840.1	0.7
Reach-1	19.41	27300.0	1783.9	1791.5	1789.7	1792.1	0.005506	7.7	4680.1	1058.7	0.5
Reach-1	19.41	27300.0	1783.9	1791.5	1789.7	1792.1	0.005608	7.8	4568.5	988.3	0.5
Reach-1	19.52	27300.0	1786.2	1795.3	1794.6	1796.6	0.012918	12.4	3104.6	713.8	0.8
Reach-1	19.52	27300.0	1786.2	1795.4	1794.6	1796.7	0.012481	12.3	3140.9	709.4	0.8
Reach-1	19.62	27300.0	1790.3	1800.9	1799.8	1801.9	0.007762	10.2	3512.6	778.6	0.6
Reach-1	19.62	27300.0	1790.3	1800.8	1799.8	1801.9	0.007872	10.2	3413.6	698.9	0.6
Reach-1	19.72	27300.0	1795.1	1805.1	1804.4	1806.3	0.009626	11.0	3297.0	762.2	0.7
Reach-1	19.72	27300.0	1795.1	1805.1	1804.4	1806.2	0.009602	10.9	3284.7	751.5	0.7
Reach-1	19.83	27300.0	1799.3	1810.6	1810.3	1812.2	0.010909	12.7	3091.1	704.0	0.8
Reach-1	19.83	27300.0	1799.3	1810.6	1810.3	1812.2	0.010889	12.7	3073.9	690.5	0.8
Reach-1	19.92	27300.0	1802.0	1815.3	1814.9	1816.2	0.006344	11.3	4243.3	1250.2	0.6
Reach-1	19.92	27300.0	1802.0	1815.4	1814.8	1816.7	0.007393	12.3	3591.3	716.2	0.7
Reach-1	20.05	27300.0	1810.7	1820.0	1818.7	1820.7	0.005351	10.3	4270.9	1030.8	0.7
Reach-1	20.05	27300.0	1810.7	1820.3	1818.7	1820.9	0.004258	9.5	4618.5	1055.6	0.6
Reach-1	20.16	27300.0	1817.7	1824.7	1824.7	1826.1	0.009915	12.1	3210.2	1112.1	0.9
Reach-1	20.16	27300.0	1817.7	1824.7	1824.7	1826.1	0.010158	12.2	3161.9	1083.8	0.9
Reach-1	20.26	27300.0	1825.1	1830.6	1830.4	1831.8	0.011221	10.0	3462.3	1176.7	0.9
Reach-1	20.26	27300.0	1825.1	1830.7	1830.6	1832.0	0.011534	10.3	3346.7	1137.4	0.9

Reach-1	20.38	27300.0	1829.6	1835.9	1834.5	1836.5	0.006485	8.6	4390.4	1251.3	0.7
Reach-1	20.38	27300.0	1829.6	1836.0	1834.5	1836.6	0.006106	8.4	4447.9	1213.1	0.7
Reach-1	20.48	27300.0	1832.8	1841.1	1841.1	1842.3	0.009294	13.1	3721.4	1280.3	0.9
Reach-1	20.48	27300.0	1832.8	1841.4	1841.4	1842.9	0.009338	13.6	3497.8	1058.4	0.9
Reach-1	20.62	27300.0	1839.3	1848.5	1848.5	1849.7	0.007795	13.2	3822.2	1226.4	0.8
Reach-1	20.62	27300.0	1839.3	1848.9	1848.9	1850.3	0.007934	13.8	3406.5	931.5	0.9
Reach-1	20.64	27300.0	1842.0	1849.9	1849.1	1850.6	0.005340	9.0	4479.9	1296.3	0.7
Reach-1	20.64	27300.0	1842.0	1850.4	1849.4	1851.2	0.004922	9.1	4123.7	960.1	0.7
Reach-1	20.71	27300.0	1843.0	1853.2	1853.2	1854.4	0.006964	12.2	4191.8	1434.3	0.8
Reach-1	20.71	27300.0	1843.0	1853.2	1853.2	1854.6	0.007916	12.9	3587.2	1064.7	0.8
Reach-1	20.79	27300.0	1847.5	1856.7	1856.3	1857.5	0.006387	9.3	4504.5	1507.1	0.7
Reach-1	20.79	27300.0	1847.5	1857.0	1856.4	1857.9	0.006347	9.6	4040.0	1127.9	0.7
Reach-1	20.9	27300.0	1852.6	1862.7	1862.7	1864.0	0.006746	11.9	4010.9	1522.8	0.8
Reach-1	20.9	27300.0	1852.6	1862.6	1862.6	1864.1	0.007583	12.5	3626.0	1002.5	0.8
Reach-1	20.98	27300.0	1853.2	1866.4	1866.4	1867.8	0.006276	11.8	3864.9	1374.1	0.8
Reach-1	20.98	27300.0	1853.2	1866.5	1866.5	1868.1	0.006680	12.3	3490.5	997.4	0.8
Reach-1	21.05	27300.0	1857.6	1869.7	1869.7	1871.2	0.005743	12.3	3930.8	1303.6	0.7
Reach-1	21.05	27300.0	1857.6	1870.0	1870.0	1871.6	0.005604	12.4	3677.4	937.6	0.7
Reach-1	21.11	27300.0	1860.5	1872.0	1872.0	1873.6	0.006251	12.5	3665.1	1023.3	0.8
Reach-1	21.11	27300.0	1860.5	1872.0	1872.0	1873.7	0.006597	12.8	3482.4	886.9	0.8
Reach-1	21.18	27300.0	1865.0	1876.0	1876.0	1877.5	0.006016	12.3	3962.1	1446.8	0.8
Reach-1	21.18	27300.0	1865.0	1876.0	1876.0	1877.7	0.006616	12.9	3688.9	991.0	0.8
Reach-1	21.25	27300.0	1868.7	1881.1	1881.1	1882.5	0.004140	12.0	4562.2	1474.1	0.6
Reach-1	21.25	27300.0	1868.7	1881.1	1881.1	1882.6	0.004258	12.2	4394.8	1278.6	0.7
Reach-1	21.31	27300.0	1870.7	1882.5	1882.0	1883.8	0.005226	12.5	3878.4	947.8	0.7
Reach-1	21.31	27300.0	1870.7	1882.5	1882.0	1883.8	0.004896	12.2	3869.6	862.7	0.7
Reach-1	21.35	27300.0	1871.5	1883.6	1883.6	1885.4	0.007351	16.2	3571.8	848.0	0.9
Reach-1	21.35	27300.0	1871.5	1883.6	1883.6	1885.5	0.007560	16.4	3499.6	779.9	0.9
Reach-1	21.41	27300.0	1874.2	1887.4	1886.6	1888.7	0.007772	16.3	3853.5	856.7	0.9
Reach-1	21.41	27300.0	1874.2	1887.4	1886.5	1888.7	0.007665	16.2	3768.6	738.2	0.9
Reach-1	21.49	27300.0	1882.0	1891.5	1890.1	1892.6	0.008681	10.5	3538.2	731.3	0.7
Reach-1	21.49	27300.0	1882.0	1891.5	1890.1	1892.6	0.008563	10.4	3550.5	722.3	0.7
Reach-1	21.58	27300.0	1888.0	1895.6	1894.9	1896.4	0.008699	8.9	4052.9	1308.9	0.7
Reach-1	21.58	27300.0	1888.0	1895.6	1894.9	1896.4	0.008981	9.0	3832.3	1123.3	0.7
Reach-1	21.63	27300.0	1888.5	1898.4	1897.6	1899.4	0.011227	11.8	3929.3	1405.6	0.8
Reach-1	21.63	27300.0	1888.5	1898.4	1897.6	1899.4	0.010721	11.6	3941.9	1334.9	0.8
Reach-1	21.69	27300.0	1895.1	1902.1	1900.8	1902.7	0.006158	8.3	4934.4	1419.9	0.6
Reach-1	21.69	27300.0	1895.1	1902.1	1900.8	1902.6	0.006370	8.4	4879.9	1416.0	0.6
Reach-1	21.77	27300.0	1897.3	1905.5	1905.5	1907.1	0.015058	12.9	2890.2	929.1	0.9
Reach-1	21.77	27300.0	1897.3	1905.5	1905.5	1907.1	0.014817	12.8	2904.4	922.5	0.9

Reach-1	21.82	27300.0	1900.5	1909.2	1908.7	1910.3	0.010810	11.4	3654.2	1179.4	0.8
Reach-1	21.82	27300.0	1900.5	1909.2	1908.7	1910.3	0.010964	11.5	3635.5	1177.5	0.8
Reach-1	21.91	27300.0	1906.0	1913.8	1913.0	1914.6	0.008475	9.1	3881.6	1122.6	0.7
Reach-1	21.91	27300.0	1906.0	1913.8	1913.0	1914.6	0.008399	9.0	3893.8	1123.2	0.7
Reach-1	21.99	27300.0	1909.9	1917.8	1917.5	1918.8	0.011966	10.4	3632.2	1401.7	0.8
Reach-1	21.99	27300.0	1909.9	1917.8	1917.5	1918.8	0.012032	10.4	3624.2	1399.7	0.8
Reach-1	22.08	27300.0	1915.0	1922.3	1921.5	1923.0	0.007547	8.1	4411.4	1542.9	0.7
Reach-1	22.08	27300.0	1915.0	1922.4	1921.5	1923.0	0.007640	8.1	4354.7	1517.1	0.7
Reach-1	22.15	27300.0	1919.0	1925.2	1924.7	1926.2	0.011201	8.6	3433.7	1189.6	0.8
Reach-1	22.15	27300.0	1919.0	1925.2	1924.7	1926.3	0.011400	8.7	3299.8	1047.7	0.8
Reach-1	22.22	27300.0	1921.5	1928.7	1928.3	1930.2	0.012923	10.3	2802.9	773.0	0.8
Reach-1	22.22	27300.0	1921.5	1928.8	1928.3	1930.2	0.012385	10.1	2859.0	788.6	0.8
Reach-1	22.29	27300.0	1925.5	1932.8	1931.6	1933.8	0.007985	8.6	3478.4	1218.8	0.7
Reach-1	22.29	27300.0	1925.5	1932.7	1931.6	1933.8	0.008281	8.8	3398.4	1180.4	0.7
Reach-1	22.36	27300.0	1929.0	1936.7	1936.4	1938.2	0.012739	9.9	2837.9	1042.2	0.8
Reach-1	22.36	27300.0	1929.0	1936.7	1936.4	1938.2	0.012351	9.7	2875.4	996.8	0.8
Reach-1	22.43	27300.0	1934.0	1941.4	1940.3	1942.0	0.007262	7.6	4402.4	1320.5	0.6
Reach-1	22.43	27300.0	1934.0	1941.4	1940.3	1942.0	0.007362	7.6	4360.0	1301.0	0.6
Reach-1	22.48	27300.0	1936.0	1943.8	1943.8	1945.2	0.019666	11.9	2921.0	1351.1	1.0
Reach-1	22.48	27300.0	1936.0	1943.8	1943.8	1945.2	0.019666	11.9	2921.0	1061.3	1.0
Reach-1	22.56	27300.0	1938.6	1948.4	1947.4	1949.3	0.007050	9.7	3648.5	1101.1	0.7
Reach-1	22.56	27300.0	1938.6	1948.4	1947.6	1949.5	0.007614	10.1	3386.5	960.2	0.7
Reach-1	22.67	27300.0	1944.5	1953.9	1953.9	1955.8	0.013689	14.0	2885.0	718.1	0.9
Reach-1	22.67	27300.0	1944.5	1953.9	1953.9	1955.8	0.013665	14.0	2886.8	718.2	0.9
Reach-1	22.73	27300.0	1947.0	1958.2	1958.1	1959.7	0.010913	14.9	3555.5	915.3	0.9
Reach-1	22.73	27300.0	1947.0	1958.4	1958.4	1960.1	0.011261	15.3	3308.0	766.0	0.9
Reach-1	22.79	27300.0	1950.0	1961.2	1960.9	1962.6	0.007922	12.2	3862.0	1007.1	0.7
Reach-1	22.79	27300.0	1950.0	1961.5	1961.2	1963.1	0.008227	12.8	3474.6	792.0	0.8
Reach-1	22.86	24400.0	1953.5	1964.4	1964.4	1965.8	0.009958	14.1	3379.9	970.7	0.8
Reach-1	22.86	24400.0	1953.5	1964.9	1964.5	1966.2	0.008392	13.3	3291.7	754.5	0.8
Reach-1	22.96	24400.0	1959.6	1974.3	1974.3	1975.7	0.007932	13.9	3550.2	914.1	0.7
Reach-1	22.96	24400.0	1959.6	1974.4	1974.4	1976.5	0.010213	15.9	2948.0	531.9	0.8
Reach-1	23.13	24400.0	1969.8	1981.2	1981.2	1983.0	0.009337	13.9	2995.5	790.2	0.8
Reach-1	23.13	24400.0	1969.8	1981.7	1981.1	1983.1	0.006384	11.8	3265.7	698.8	0.7
Reach-1	23.25	24400.0	1977.3	1987.4	1987.3	1989.0	0.009976	13.6	3217.4	745.9	0.8
Reach-1	23.25	24400.0	1977.3	1987.2	1987.2	1989.0	0.011066	14.2	3101.1	744.2	0.9
Reach-1	23.33	24400.0	1981.1	1991.4	1990.7	1993.0	0.009752	13.1	2624.7	600.4	0.8
Reach-1	23.33	24400.0	1981.1	1991.5	1990.7	1993.1	0.009067	12.8	2691.5	594.9	0.8
Reach-1	23.45	24400.0	1991.5	1998.8	1997.5	2000.0	0.013459	13.0	2812.2	616.7	0.9
Reach-1	23.45	24400.0	1991.5	1998.7	1997.5	2000.0	0.014404	13.3	2723.6	570.7	0.9

Reach-1	23.55	24400.0	1997.0	2004.5	2003.7	2005.7	0.009727	10.7	3023.0	782.6	0.8
Reach-1	23.55	24400.0	1997.0	2004.6	2004.0	2005.9	0.010361	11.2	2803.4	722.1	0.8
Reach-1	23.64	12587.0	2000.0	2009.3	2008.9	2010.2	0.007624	11.4	2232.9	763.5	0.7
Reach-1	23.64	12587.0	2000.0	2009.6	2008.9	2010.3	0.006042	10.4	2437.4	805.7	0.6
Reach-1	23.87	12587.0	2008.8	2018.8	2018.8	2020.3	0.008295	11.8	1669.4	551.9	0.7
Reach-1	23.87	12587.0	2008.8	2018.8	2018.8	2020.3	0.008383	11.8	1651.3	523.1	0.7
Reach-1	23.94	12587.0	2010.4	2022.0	2020.9	2023.0	0.005394	8.8	1914.0	632.0	0.6
Reach-1	23.94	12587.0	2010.4	2022.0	2021.2	2023.0	0.005336	8.7	1918.1	623.3	0.6
Reach-1	24.03	12587.0	2017.5	2025.1	2024.3	2025.8	0.007750	8.4	1961.2	651.9	0.7
Reach-1	24.03	12587.0	2017.5	2025.1	2024.7	2026.2	0.011302	10.1	1549.7	454.5	0.8
Reach-1	24.12	12587.0	2020.6	2029.3	2029.3	2031.0	0.009008	10.9	1387.6	453.4	0.7
Reach-1	24.12	12587.0	2020.6	2029.3	2029.1	2031.1	0.009706	11.3	1259.1	310.7	0.8
Reach-1	24.25	11837.0	2024.0	2035.1	2033.8	2036.1	0.005962	9.7	1609.3	549.1	0.6
Reach-1	24.25	11837.0	2024.0	2035.3	2033.7	2036.3	0.005593	9.5	1603.8	406.8	0.6
Reach-1	24.38	11837.0	2031.5	2039.2	2038.4	2040.3	0.007702	9.9	1604.8	428.1	0.7
Reach-1	24.38	11837.0	2031.5	2039.2	2038.4	2040.3	0.007767	9.9	1576.3	359.5	0.7
Reach-1	24.48	11837.0	2036.8	2043.7	2043.7	2045.1	0.012670	11.6	1365.1	472.2	0.9
Reach-1	24.48	11837.0	2036.8	2043.7	2043.7	2045.1	0.012670	11.6	1365.1	472.2	0.9
Reach-1	24.61	11837.0	2040.2	2050.4	2050.3	2051.5	0.006824	10.5	1888.2	715.7	0.7
Reach-1	24.61	11837.0	2040.2	2050.5	2050.2	2051.6	0.006923	10.6	1811.6	597.6	0.7
Reach-1	24.74	11837.0	2045.8	2056.5	2056.5	2057.7	0.006595	9.7	1799.4	712.7	0.6
Reach-1	24.74	11837.0	2045.8	2056.5	2056.5	2057.8	0.007614	10.4	1578.1	528.8	0.7
Reach-1	24.87	8811.0	2054.6	2062.3	2062.3	2063.4	0.008658	9.8	1234.6	538.6	0.7
Reach-1	24.87	8811.0	2054.6	2062.4	2062.2	2063.4	0.007856	9.4	1251.5	509.6	0.7
Reach-1	24.95	8811.0	2057.4	2065.3	2063.9	2066.0	0.005402	7.5	1457.8	363.2	0.6
Reach-1	24.95	8811.0	2057.4	2065.3	2063.9	2066.0	0.005690	7.7	1432.3	362.7	0.6
Reach-1	25.12	8811.0	2064.7	2073.3	2073.3	2075.9	0.013629	13.0	742.7	464.7	0.9
Reach-1	25.12	8811.0	2064.7	2073.3	2073.3	2075.9	0.013632	13.0	742.6	437.7	0.9
Reach-1	25.28	8811.0	2071.5	2082.2	2081.3	2082.9	0.004521	8.1	1674.8	635.9	0.5
Reach-1	25.28	8811.0	2071.5	2082.2	2081.3	2082.9	0.004521	8.1	1674.8	626.9	0.5
Reach-1	25.38	8811.0	2079.8	2085.1	2084.3	2085.4	0.006631	5.7	2142.4	1280.6	0.6
Reach-1	25.38	8811.0	2079.8	2085.1	2084.3	2085.4	0.006628	5.7	2142.4	1221.8	0.6
Reach-1	25.45	8811.0	2084.8	2088.6	2088.6	2089.5	0.017255	7.8	1160.9	1058.7	0.9
Reach-1	25.45	8811.0	2084.8	2088.6	2088.6	2089.5	0.017278	7.8	1160.1	1028.4	0.9
Reach-1	25.56	8811.0	2091.6	2095.7	2095.6	2096.4	0.008208	6.3	1421.4	1298.0	0.6
Reach-1	25.56	8811.0	2091.6	2095.7	2095.6	2096.4	0.008251	6.3	1388.7	1194.0	0.6
Reach-1	25.63	8811.0	2095.2	2098.7	2097.8	2099.2	0.007674	6.3	1444.4	711.9	0.6
Reach-1	25.63	8811.0	2095.2	2098.7	2097.8	2099.3	0.007560	6.2	1452.1	702.4	0.6
Reach-1	25.69	8811.0	2098.0	2100.5	2099.4	2100.8	0.004438	4.0	2064.4	1237.3	0.4
Reach-1	25.69	8811.0	2098.0	2100.5	2099.5	2100.8	0.004829	4.2	1963.3	977.3	0.5

Reach-1	25.73	8811.0	2100.0	2103.9	2103.9	2105.8	0.018894	10.9	807.4	214.8	1.0
Reach-1	25.73	8811.0	2100.0	2103.9	2103.9	2105.8	0.018894	10.9	807.4	214.8	1.0
Reach-1	25.735	Bridge									
Reach-1	25.74	8811.0	2100.0	2106.4	2103.9	2107.1	0.003520	6.5	1351.0	230.1	0.5
Reach-1	25.74	8811.0	2100.0	2106.4	2103.9	2107.1	0.003520	6.5	1351.0	230.1	0.5
Reach-1	25.78	8811.0	2100.0	2107.1	2104.4	2107.8	0.003704	7.0	1266.4	1454.7	0.5
Reach-1	25.78	8811.0	2100.0	2107.1	2104.4	2107.8	0.003704	7.0	1266.4	949.0	0.5
Reach-1	25.83	8811.0	2105.1	2112.7	2112.7	2114.0	0.013761	10.5	1121.6	2119.7	0.9
Reach-1	25.83	8811.0	2105.1	2112.7	2112.7	2114.0	0.013667	10.4	1124.3	1388.5	0.9
Reach-1	25.95	8811.0	2110.4	2119.4	2119.3	2120.3	0.007765	9.7	1383.6	2056.8	0.7
Reach-1	25.95	8811.0	2110.4	2119.4	2119.3	2120.3	0.007801	9.7	1380.7	800.0	0.7
Reach-1	26.17	8811.0	2121.7	2132.7	2132.7	2133.8	0.009610	10.1	1337.9	597.1	0.7
Reach-1	26.17	8811.0	2121.7	2132.7	2132.7	2133.8	0.009610	10.1	1337.9	520.2	0.7

ERRORS WARNINGS AND NOTES
Errors Warnings and Notes for Plan : Team 100yr C

River: RIVER-1 Reach: Reach-1 RS: 26.17 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 26.17 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.95 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.95 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.83 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.83 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.78 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
River: RIVER-1 Reach: Reach-1 RS: 25.78 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.

River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Ex 100-yr
Warning:The flow regime calculated by the momentum equation shows class B flow. For the best solution, this profile should
be run as a mixed flow problem.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Ex 100-yr Enc
Warning:The flow regime calculated by the momentum equation shows class B flow. For the best solution, this profile should
be run as a mixed flow problem.
River: RIVER-1 Reach: Reach-1 RS: 25.73 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 25.73 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 25.69 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.69 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 25.63 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.
River: RIVER-1 Reach: Reach-1 RS: 25.63 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.
River: RIVER-1 Reach: Reach-1 RS: 25.56 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.56 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 25.45 Profile: Ex 100-yr

Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The 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.
River: RIVER-1 Reach: Reach-1 RS: 25.45 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The 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.
River: RIVER-1 Reach: Reach-1 RS: 25.38 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.38 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 25.28 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.28 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.12 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated

water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.12 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.95 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.95 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.87 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 24.87 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.74 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.74 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.61 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.61 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.48 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.48 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.38 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 24.38 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.25 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.25 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.12 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.12 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.03 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 24.03 Profile: Ex 100-yr Enc
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.

River: RIVER-1 Reach: Reach-1 RS: 23.94 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.94 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.87 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.87 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.64 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 23.64 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.55 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 23.55 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 23.45 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.45 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.33 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.33 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.25 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.25 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.13 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.13 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.96 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.96 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.86 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.86 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.79 Profile: Ex 100-yr
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.79 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.73 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.73 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.67 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.67 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.56 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.56 Profile: Ex 100-yr Enc
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.48 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.48 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.43 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.43 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.36 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.36 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 22.29 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.29 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 22.22 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.22 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 22.15 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.15 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 22.08 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.08 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 21.99 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.99 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 21.91 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.91 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 21.82 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.82 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 21.77 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The 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.
River: RIVER-1 Reach: Reach-1 RS: 21.77 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The 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.
River: RIVER-1 Reach: Reach-1 RS: 21.69 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.69 Profile: Ex 100-yr Enc

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.63 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.63 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 21.58 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.58 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.49 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.49 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.41 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.41 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.35 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.35 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.31 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.31 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.25 Profile: Ex 100-yr

Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.25 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.18 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.18 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.11 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.11 Profile: Ex 100-yr Enc
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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.05 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 21.05 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.98 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 20.98 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.9 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 20.9 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.79 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.79 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.71 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.71 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.64 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.64 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.62 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.62 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.48 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.48 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.38 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.38 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.26 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 20.26 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.16 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.16 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.05 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 20.05 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.92 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.92 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.83 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.83 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.72 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.72 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.62 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 19.62 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.52 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.52 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.41 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.41 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.26 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.26 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.18 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 19.18 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The 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.
River: RIVER-1 Reach: Reach-1 RS: 19.07 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.07 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.96 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.96 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.84 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 18.84 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.74 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.74 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.57 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.57 Profile: Ex 100-yr Enc

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.49 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The 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.
River: RIVER-1 Reach: Reach-1 RS: 18.49 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 18.29 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.29 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.23 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.23 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.16 Profile: Ex 100-yr

Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.16 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 18.09 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.09 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.95 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 17.95 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.84 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.84 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.78 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.78 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.65 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.65 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.57 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.57 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.48 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.48 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.39 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.

River: RIVER-1 Reach: Reach-1 RS: 17.39 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.3 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.3 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.18 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 17.18 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.06 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.06 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.96 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: RIVER-1 Reach: Reach-1 RS: 16.96 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: RIVER-1 Reach: Reach-1 RS: 16.87 Profile: Ex 100-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.87 Profile: Ex 100-yr Enc
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer
has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used
for pressure flow.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr Enc
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer
has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used
for pressure flow.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr Enc Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr Enc Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.86 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The 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, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.86 Profile: Ex 100-yr Enc

Warning:The energy equation could not 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, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.68 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.68 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.49 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.49 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.27 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 16.27 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 16.19 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.19 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.07 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.07 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.89 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 15.89 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 15.75 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.75 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.55 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.55 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.41 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: RIVER-1 Reach: Reach-1 RS: 15.41 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: RIVER-1 Reach: Reach-1 RS: 15.22 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 15.22 Profile: Ex 100-yr Enc
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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 15.12 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 15.12 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 15.06 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.06 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.89 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 14.89 Profile: Ex 100-yr Enc

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.74 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.74 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.54 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.54 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.3 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 14.3 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 14.07 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 14.07 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.86 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 13.86 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 13.66 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.66 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.55 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.55 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.4 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.4 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.28 Profile: Ex 100-yr
Warning:User specified water surface is not possible for the specified flow regime. The program used critical depth as the
starting water surface.
Warning:Divided flow computed for this cross-section.
River: RIVER-1 Reach: Reach-1 RS: 13.28 Profile: Ex 100-yr Enc
Warning:User specified water surface is not possible for the specified flow regime. The program used critical depth as the
starting water surface.
Warning:The cross section had to be extended vertically during the critical depth calculations.

HEC-RAS STAKEHOLDER ALTERNATIVE MODEL

HEC-RAS September 1998 Version 2.2
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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

PROJECT DATA
Project Title: Watercourse Master Plan - Skunk Creek
Project File : WMP_SC.prj
Run Date and Time: 3/26/01 7:32:14 AM

Project in English units

Project Description:
Skunk Creek Watercourse Master Plan. Prepared for Skunk Creek from the CAP
Canal to north of New River Road
by Stantec Consulting Inc. for ASL Consulting
and the Flood Control District of Maricopa County
FCD: 99-23

Project Start Date:October 1999

This
HEC-RAS model is based on HEC-2 models prepared by Montgomery Watson , Erie and Associates, and Hoskin Engineering Consultants. Montgomery Watson and Erie and Associates models reffect the FIS effective model for FEMA. Hoskins Engineering Counsultants model reflect a CLOMR submiital to FEMA (Case No. 99-09-592R, date of submittal responce 6/2/99).

PLAN DATA

Plan Title: Stakeholder Alternative 100yr Existing
Plan File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.p04

Geometry Title: Stakeholder Alt Phase I 100yr
Geometry File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.g06

Flow Title : Stakeholder Alternative 100yr Existing
Flow File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.f03

Plan Description:
Plan for Stakeholder Alternative
Phase I
from the Carefree Highway to the CAP
overchute
March 28, 00

Plan Summary Information:

Number of:	Cross Sections	= 124	Mulitple Openings	=	0
	Culverts	= 0	Inline Weirs	=	0
	Bridges	= 2			

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

Computation Options
    Critical depth computed at all cross sections
    Conveyance Calculation Method: At breaks in n values only
    Friction Slope Method: Average Conveyance
    Computational Flow Regime: Subcritical Flow

Encroachment Data
   Equal Conveyance = True
   Left Offset = 0
   Right Offset = 0

River = RIVER-1 Reach = Reach-1

RS	Profile	Method	Value1	Value2
26.17	Ex 100-yr Enc	1	9967	10063
25.95	Ex 100-yr Enc	1	9923	10064
25.83	Ex 100-yr Enc	1	9914	10040
25.78	Ex 100-yr Enc	1	9938	10110
25.74	Ex 100-yr Enc	1	9900	10115
25.73	Ex 100-yr Enc	1	9900	10115
25.69	Ex 100-yr Enc	1	9970	10160
25.63	Ex 100-yr Enc	1	9931	10477
25.56	Ex 100-yr Enc	1	9686	10511
25.45	Ex 100-yr Enc	1	9966	10598
25.38	Ex 100-yr Enc	1	9650	10296
25.28	Ex 100-yr Enc	1	9849	10052
25.12	Ex 100-yr Enc	1	9949	10105
24.95	Ex 100-yr Enc	1	9920	10100
24.87	Ex 100-yr Enc	1	9929	10080
24.74	Ex 100-yr Enc	1	9961	10086
24.61	Ex 100-yr Enc	1	9944	10023
24.48	Ex 100-yr Enc	1	9834	10048
24.38	Ex 100-yr Enc	1	9811	10077
24.25	Ex 100-yr Enc	1	9951	10199
24.12	Ex 100-yr Enc	1	9860	10067
24.03	Ex 100-yr Enc	1	9900	10123
23.94	Ex 100-yr Enc	1	9542	10042
23.87	Ex 100-yr Enc	1	9668	10021
23.64	Ex 100-yr Enc	1	9435	10097
23.55	Ex 100-yr Enc	1	9766	10233
23.45	Ex 100-yr Enc	1	9867	10332
23.33	Ex 100-yr Enc	1	9963	10294
23.25	Ex 100-yr Enc	1	9874	10208
23.13	Ex 100-yr Enc	1	9595	10156
22.96	Ex 100-yr Enc	1	9500	10016
22.86	Ex 100-yr Enc	1	9450	10192
22.79	Ex 100-yr Enc	1	9490	10150
22.73	Ex 100-yr Enc	1	9499	10030
22.67	Ex 100-yr Enc	1	9475	10050
22.56	Ex 100-yr Enc	1	9470	10105
22.48	Ex 100-yr Enc	1	9372	10095
22.43	Ex 100-yr Enc	1	9192	10110
22.36	Ex 100-yr Enc	1	9100	10080
22.29	Ex 100-yr Enc	1	9000	10100
22.22	Ex 100-yr Enc	1	8918	10067
22.15	Ex 100-yr Enc	1	8700	10070
22.08	Ex 100-yr Enc	1	9050	10175
21.99	Ex 100-yr Enc	1	8765	10090
21.91	Ex 100-yr Enc	1	8900	10040
21.82	Ex 100-yr Enc	1	8750	10200
21.77	Ex 100-yr Enc	1	8694	10165
21.69	Ex 100-yr Enc	1	8970	10300
21.63	Ex 100-yr Enc	1	9265	10320
21.58	Ex 100-yr Enc	1	9415	10255
21.49	Ex 100-yr Enc	1	9617	10317
21.41	Ex 100-yr Enc	1	9500	10100
21.35	Ex 100-yr Enc	1	9400	10105
21.31	Ex 100-yr Enc	1	9450	10100
21.25	Ex 100-yr Enc	1	9310	10055
21.18	Ex 100-yr Enc	1	9200	10100
21.11	Ex 100-yr Enc	1	9350	10125
21.05	Ex 100-yr Enc	1	9380	10075
20.98	Ex 100-yr Enc	1	9390	10060
20.9	Ex 100-yr Enc	1	9550	10220

20.79	Ex 100-yr Enc	1	9500	10160
20.71	Ex 100-yr Enc	1	9500	10310
20.64	Ex 100-yr Enc	1	9500	10350
20.62	Ex 100-yr Enc	1	9485	10370
20.48	Ex 100-yr Enc	1	9424	10330
20.38	Ex 100-yr Enc	1	9209	10415
20.26	Ex 100-yr Enc	1	9190	10395
20.16	Ex 100-yr Enc	1	9202	10489.7
20.05	Ex 100-yr Enc	1	9420	10473.12
19.92	Ex 100-yr Enc	1	9710	10393.31
19.83	Ex 100-yr Enc	1	9770	10420
19.72	Ex 100-yr Enc	1	9825	10550
19.62	Ex 100-yr Enc	1	9966	10730.51
19.52	Ex 100-yr Enc	1	9901	10581
19.41	Ex 100-yr Enc	1	9660	10610
19.26	Ex 100-yr Enc	1	9430	10065
19.18	Ex 100-yr Enc	1	9330	10080
19.07	Ex 100-yr Enc	1	9485	10315
18.96	Ex 100-yr Enc	1	9639	10480
18.84	Ex 100-yr Enc	1	9576	10140
18.74	Ex 100-yr Enc	1	9380	10125
18.57	Ex 100-yr Enc	1	9700	10480
18.49	Ex 100-yr Enc	1	9832	10475
18.29	Ex 100-yr Enc	1	9630	10330
18.23	Ex 100-yr Enc	1	9630	10330
18.16	Ex 100-yr Enc	1	9752	10425
18.09	Ex 100-yr Enc	1	9895	10610
17.95	Ex 100-yr Enc	1	9818.68	10595
17.84	Ex 100-yr Enc	1	9760	10665
17.78	Ex 100-yr Enc	1	9642.06	10578
17.65	Ex 100-yr Enc	1	9423.7	10270
17.57	Ex 100-yr Enc	1	9516.45	10263
17.48	Ex 100-yr Enc	1	9488.92	10340
17.39	Ex 100-yr Enc	1	9758	10471
17.3	Ex 100-yr Enc	1	9628	10550
17.18	Ex 100-yr Enc	1	9788	10680
17.06	Ex 100-yr Enc	1	9650	10520
16.96	Ex 100-yr Enc	1	9914	10370
16.87	Ex 100-yr Enc	1	9855.48	10152.83
16.86	Ex 100-yr Enc	1	9862.41	11444.85
16.68	Ex 100-yr Enc	1	9936.39	10596.96
16.49	Ex 100-yr Enc	1	9800	10505.45
16.27	Ex 100-yr Enc	1	9570	10043.2
16.19	Ex 100-yr Enc	1	9572	10069.78
16.07	Ex 100-yr Enc	1	9760	10130
15.89	Ex 100-yr Enc	1	9817	10210
15.75	Ex 100-yr Enc	1	9477	10198.22
15.55	Ex 100-yr Enc	1	9828.62	10360.78
15.41	Ex 100-yr Enc	1	9542	10390
15.22	Ex 100-yr Enc	1	9977	10551.19
15.12	Ex 100-yr Enc	1	9975	10538.65
15.06	Ex 100-yr Enc	1	9972	10503.38
14.89	Ex 100-yr Enc	1	9600	10090
14.74	Ex 100-yr Enc	1	9700	10308.01
14.59	Ex 100-yr Enc	1	9800	10370
14.58	Ex 100-yr Enc	1	9450	10380
14.54	Ex 100-yr Enc	1	9937.71	10476.71
14.3	Ex 100-yr Enc	1	8615.66	10878.43
14.07	Ex 100-yr Enc	1	8569.17	10898.09
13.86	Ex 100-yr Enc	1	8241.98	10260
13.66	Ex 100-yr Enc	1	8518.14	10484
13.55	Ex 100-yr Enc	1	8784.66	10605
13.4	Ex 100-yr Enc	1	8939.26	11045
13.28	Ex 100-yr Enc	1	8834.38	11019.99

FLOW DATA

Flow Title: Stakeholder Alternative 100yr Existing
Flow File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.f03

Flow Data (cfs)

River	Reach	RS	Ex 100-yr	Ex 100-yr Enc
RIVER-1	Reach-1	26.17	7800	7800
RIVER-1	Reach-1	24.74	9700	9700
RIVER-1	Reach-1	24.12	11800	11800
RIVER-1	Reach-1	23.55	24400	24400
RIVER-1	Reach-1	22.79	27300	27300

RIVER-1	Reach-1	18.57	27700	27700
RIVER-1	Reach-1	17.95	27300	27300
RIVER-1	Reach-1	16.68	26700	26700

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
RIVER-1	Reach-1	Ex 100-yr		Known WS = 1533.7
RIVER-1	Reach-1	Ex 100-yr Enc		Known WS = 1533.7

GEOMETRY DATA

Geometry Title: Stakeholder Alt Phase I 100yr
Geometry File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SC WMP\WMP_SC.g06

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 26.17

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9940	2138.3	9957	2136.6	9967	2132.3	9980	2122.5	9988	2121.9
10000	2121.7	10020	2128.2	10039	2129.9	10063	2131.5	10085	2131.2
10098	2131.5	10122	2130.8	10141	2129.5	10155	2130.1	10165	2130.2
10194	2131.5	10227	2131.8	10274	2131.3	10286	2130.2	10302	2128.2
10313	2129.3	10335	2130.8	10373	2131.2	10391	2129.7	10403	2128.3
10418	2129.7	10448	2132.6	10472	2131.9	10501	2132.9	10535	2133.3
10566	2133.4	10609	2132.5	10640	2131.9	10651	2131.7	10668	2132.7
10720	2134.4	10759	2135.1	10820	2136.1	10860	2136.5	10933	2136
10948	2136.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9940	.045	9967	.045	10063	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967	10063	1225	1132	1040	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10472	10948	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.95

INPUT
Description:
Station Elevation Data num= 81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9254	2123.2	9297	2119.8	9322	2117.2	9353	2116.1	9368	2116.6
9416	2115.7	9426	2115.9	9474	2115.4	9487	2112.1	9494	2114.1
9507	2113.7	9517	2111.4	9520	2111.4	9529	2115	9568	2116.1
9609	2115.2	9623	2114	9634	2115.1	9657	2115.8	9681	2116.6
9694	2115.6	9727	2116.5	9777	2117.5	9802	2117.4	9841	2117.8
9912	2117.6	9923	2119	9936	2118.9	9941	2117.6	9969	2117.5
9986	2118.1	10000	2110.8	10020	2110.4	10032	2113.5	10046	2114.2
10057	2117.7	10072	2119.5	10096	2119.9	10103	2119.4	10132	2119.1
10144	2117.6	10154	2117.5	10169	2119.2	10217	2119.1	10258	2118.1
10282	2118.8	10315	2118.9	10363	2118.6	10380	2116.5	10387	2116.4
10398	2117.4	10425	2117.6	10461	2117.2	10490	2116.9	10512	2116
10538	2116.2	10580	2115.9	10593	2116.3	10616	2116.8	10644	2116.5
10658	2116.2	10680	2116.1	10729	2116.1	10781	2115.9	10829	2115.7
10882	2115.5	10993	2115.9	11030	2115.8	11108	2115	11161	2114.4
11189	2113.5	11205	2110.3	11222	2110.5	11235	2112.9	11242	2109.1
11249	2109.1	11264	2112.8	11290	2114.5	11327	2117	11367	2118.6
11510	2123.3								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9254	.045	9681	.035	9986	.045	10057	.055	10363	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986	10057	600	620.6	625	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9254	9923		10616	11510	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.83

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9211	2114.5	9263	2109.9	9290	2108.9	9328	2107.8	9372	2106.5
9395	2103.6	9420	2106.3	9450	2108.1	9502	2109.1	9536	2108.8
9569	2109.2	9592	2108.7	9604	2107.9	9618	2108.9	9668	2109.6
9705	2110.4	9758	2110.5	9812	2111	9853	2110.6	9906	2110.8
9914	2111.8	9938	2110.2	9966	2108.1	10000	2106	10012	2105.1
10025	2105.3	10040	2112.7	10048	2111	10092	2111.1	10157	2110.8
10190	2109.6	10217	2110.4	10245	2109.9	10299	2110.7	10312	2113
10327	2113.3	10343	2113.7	10361	2113.6	10375	2113.1	10387	2111.3
10441	2111.1	10482	2110.5	10503	2110.8	10535	2111.1	10556	2110.7
10612	2110	10639	2108.4	10665	2109.7	10700	2110.1	10738	2109.5
10759	2108.4	10779	2108.1	10805	2108.8	10831	2109.2	10856	2108.6
10900	2109.7	10946	2110.1	10987	2109.6	11018	2109.2	11025	2109.6
11062	2109	11099	2108.7	11124	2108.2	11135	2106.6	11149	2108.1
11202	2106.3	11211	2104.6	11220	2104.6	11228	2107	11262	2108
11305	2109.4	11347	2110.1	11359	2110.5	11456	2114		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9211	.055	9502	.045	9914	.045	10040	.055	10299	.035
10387	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9914	10040	220	250	350	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9211	9914		10327	11456	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.78

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9155	2110	9185	2108	9215	2106	9245	2104	9275	2102
9290	2102	9325	2104	9380	2105	9435	2104	9493	2105
9558	2104.5	9580	2106	9660	2107.5	9765	2107	9795	2108
9938	2108	9960	2106	9965	2104	9975	2102	10025	2100
10045	2100	10070	2102	10075	2104	10085	2106	10100	2108
10110	2110	10139	2111.77	10158	2112.14	10177	2111.84	10200	2110
10210	2108	10370	2106	10625	2106	10720	2104	10775	2104
10800	2102	10821	2102	10839	2103	10858	2102	10868	2102
10915	2104	10955	2102	10970	2100	10980	2100	11015	2102
11040	2104	11075	2106	11105	2108	11175	2110		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9155	.055	9380	.045	9938	.045	10110	.035	10210	.045
10625	.055	10915	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9938	10110	195	195	195	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9155	9938		10158	11175	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.74

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9220	2104	9270	2102	9295	2100	9350	2100	9385	2098
9400	2096	9425	2098	9440	2100	9470	2102	9545	2104
9685	2103	9850	2104	9900	2104	9915	2102	9925	2100
10100	2100	10105	2102	10115	2104	10235	2104	10255	2103
10315	2104	10332	2102	10362	2103.5	10422	2102	10442	2102
10547	2102.8	10595	2102	10665	2100	10735	2098	10750	2098
10760	2100	10835	2102	10845	2102	10915	2100	10935	2098
10945	2098	10950	2100	10960	2102	11000	2104	11060	2106
11100	2107								

```
Manning's n Values          num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9220    .055    9440    .045    9545    .035    9900    .045   10115    .055
   10595    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9900   10115               84      84      84              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    9220    9900           10115   11100

BRIDGE                  RIVER: RIVER-1
REACH: Reach-1             RS: 25.735

INPUT
Description: New River Bridge
Distance from Upstream XS =       0
Deck/Roadway Width        =      84
Weir Coefficient          =     2.6
Bridge Deck/Roadway Skew  =
Upstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  9877.9 2109.73    2100 9888.38 2109.82    2100 9888.38 2111.64    2100
  9927.1 2111.83    2100  9927.1 2111.83 2105.84 10072.9 2113.27 2107.28
 10072.9 2113.27    210010111.62 2113.46    210010111.62 2111.64    2100
 10122.1 2111.73    2100

Upstream Bridge Cross Section Data
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9220    2104    9270    2102    9295    2100    9350    2100    9385    2098
    9400    2096    9425    2098    9440    2100    9470    2102    9545    2104
    9685    2103    9850    2104    9900    2104    9915    2102    9925    2100
   10100    2100   10105    2102   10115    2104   10235    2104   10255    2103
   10315    2104   10332    2102   10362  2103.5   10422    2102   10442    2102
   10547  2102.8   10595    2102   10665    2100   10735    2098   10750    2098
   10760    2100   10835    2102   10845    2102   10915    2100   10935    2098
   10945    2098   10950    2100   10960    2102   11000    2104   11060    2106
   11100    2107

Manning's n Values          num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9220    .055    9440    .045    9545    .035    9900    .045   10115    .055
   10595    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
          9900   10115              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    9220    9900           10115   11100

Downstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  9877.9 2109.73    2100 9888.38 2109.82    2100 9888.38 2111.64    2100
  9927.1 2111.83    2100  9927.1 2111.83 2105.84 10072.9 2113.27 2107.28
 10072.9 2113.27    210010111.62 2113.46    210010111.62 2111.64    2100
 10122.1 2111.73    2100

Downstream Bridge Cross Section Data
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9220    2104    9270    2102    9295    2100    9350    2100    9385    2098
    9400    2096    9425    2098    9440    2100    9470    2102    9545    2104
    9685    2103    9850    2104    9900    2104    9915    2102    9925    2100
   10100    2100   10105    2102   10115    2104   10235    2104   10255    2103
   10315    2104   10332    2102   10362  2103.5   10422    2102   10442    2102
   10547  2102.8   10595    2102   10665    2100   10735    2098   10750    2098
   10760    2100   10835    2102   10845    2102   10915    2100   10935    2098
   10945    2098   10950    2100   10960    2102   11000    2104   11060    2106
   11100    2107

Manning's n Values          num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9220    .055    9440    .045    9545    .035    9900    .045   10115    .055
   10595    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
          9900   10115              .3       .5
Ineffective Flow     num=       2
```

```
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    9220    9900           10115   11100

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 Piers =  2

Pier Data
Pier Station     Upstream=  9975.7    Downstream=  9975.7
Upstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109
Downstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109

Pier Data
Pier Station     Upstream= 10024.3    Downstream= 10024.3
Upstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109
Downstream     num=       2
    Width   Elev    Width   Elev
       3    2098       3    2109

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Energy Only

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.73

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9220    2104    9270    2102    9295    2100    9350    2100    9385    2098
    9400    2096    9425    2098    9440    2100    9470    2102    9545    2104
    9685    2103    9850    2104    9900    2104    9915    2102    9925    2100
   10100    2100   10105    2102   10115    2104   10235    2104   10255    2103
   10315    2104   10332    2102   10362  2103.5   10422    2102   10442    2102
   10547  2102.8   10595    2102   10665    2100   10735    2098   10750    2098
   10760    2100   10835    2102   10845    2102   10915    2100   10935    2098
   10945    2098   10950    2100   10960    2102   11000    2104   11060    2106
   11100    2107

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9220    .055    9440    .045    9545    .035    9900    .045   10115    .055
   10595    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9900   10115              200     200     200              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    9220    9900           10115   11100

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.69

INPUT
Description:
Station Elevation Data    num=      45
```

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9130	2104	9180	2102	9225	2100	9280	2098	9290	2096
9300	2094	9320	2094	9330	2096	9340	2098	9460	2100
9630	2100	9660	2102	9720	2104	9730	2106	9795	2108
9801	2109.08	9820	2109.48	9839	2109.21	9865	2108	9875	2106
9880	2104	9885	2102	9890	2100	9970	2100	9990	2098
10010	2098	10020	2100	10025	2101	10105	2100	10135	2102
10160	2102	10340	2100	10430	2098	10515	2096	10550	2096
10575	2098	10650	2099	10670	2098	10685	2096	10710	2096
10765	2098	10810	2100	10835	2102	10880	2104	10890	2104

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9130	.055	9460	.045	9630	.035	9885	.045	10025	.055
10430	.045	10765	.035						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970	10025	250	250	250	.3	.5

Ineffective Flow num= 1

Sta L	Sta R	Elev
9130	9820	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.63

INPUT
Description:
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9056	2104.7	9103	2102.4	9143	2100.5	9174	2098.6	9198	2095.5
9214	2092.8	9227	2089.7	9244	2090.3	9261	2093.5	9275	2094.7
9289	2095.8	9335	2097.9	9384	2099.1	9438	2099.6	9493	2099.9
9543	2100.2	9596	2100.5	9624	2100.9	9647	2106.9	9662	2107.2
9693	2106.8	9707	2106.2	9728	2102.4	9762	2101.7	9788	2101.2
9832	2101.2	9886	2101.1	9904	2100.3	9919	2098.8	9934	2098.6
9939	2101	9948	2096	9954	2095.4	9965	2095.2	9979	2096
10000	2095.7	10007	2099.2	10040	2099.2	10042	2098.1	10065	2098.2
10088	2099.2	10155	2099.8	10209	2099.6	10251	2099.2	10299	2098
10317	2096.3	10334	2097.8	10367	2097.6	10381	2097	10417	2096.4
10431	2093	10444	2093	10458	2094.6	10468	2094.7	10477	2095.1
10487	2096.5	10508	2096.8	10530	2093.2	10540	2093.3	10570	2096.9
10603	2101.2	10627	2104.4						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9056	.055	9335	.045	9624	.035	9939	.045	10007	.055
10417	.045	10570	.035						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9939	10007	375	365.7	350	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9056	9707	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.56

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8984	2100.4	9019	2098.8	9059	2098	9098	2096	9131	2094
9168	2093	9193	2092.3	9224	2089.6	9237	2086.1	9256	2085.5
9268	2087.2	9288	2092.9	9307	2094.5	9336	2095.3	9368	2095.4
9413	2095.2	9460	2095	9487	2095	9519	2094.8	9538	2094.4
9554	2098.2	9566	2098.6	9595	2098.5	9608	2097.9	9624	2095
9642	2094.1	9652	2095.3	9680	2096.3	9687	2095.9	9706	2096.2
9716	2095.4	9745	2095.2	9777	2094.6	9800	2094.9	9817	2094.6
9823	2093.7	9842	2094.9	9883	2094.8	9898	2095.2	9927	2095.2
9952	2094.7	9968	2092.3	9977	2091.6	9996	2091.8	10000	2091.9
10010	2095.6	10048	2095.6	10094	2095.1	10121	2093.8	10134	2094.6
10169	2094.8	10215	2094	10221	2093.5	10231	2094.1	10277	2094.3
10298	2094.6	10305	2094	10315	2094.7	10348	2094.9	10375	2094.8
10390	2092.6	10406	2086	10413	2085.6	10422	2086.2	10446	2091
10478	2093	10511	2094.8	10542	2096.6	10564	2097.9		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8984	.055	9307	.045	9538	.035	9680	.055	9952	.045
10010	.055	10390	.045	10446	.035				

```
Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          9952   10010              535   583.5     600              .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev
    8984    9608

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.45

INPUT
Description:
Station Elevation Data     num=      67
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
    9124   2092.6    9188     2091    9236   2089.7    9290   2088.1    9314   2086.9
    9329   2085.1    9367   2084.6    9383     2081    9394     2081    9412   2083.6
    9434   2085.2    9464   2086.6    9517   2087.6    9557   2088.1    9570     2088
    9600   2088.4    9633   2089.3    9650   2088.7    9679   2088.5    9715   2088.2
    9731   2088.9    9761   2089.3    9775   2089.8    9813   2090.2    9861   2090.2
    9909   2089.6    9941   2088.8    9966   2088.8    9975   2085.1   10000   2084.8
   10010   2086.9   10026   2086.9   10038   2088.5   10053   2086.9   10072   2087.9
   10093   2088.3   10113   2088.1   10127   2084.7   10132   2084.6   10148   2087.4
   10182     2088   10230   2088.5   10266   2088.2   10301   2087.8   10312   2085.6
   10322   2087.2   10347   2087.7   10374   2087.3   10388   2086.2   10394   2086.2
   10414   2087.9   10440   2088.5   10488     2089   10513   2088.4   10533   2086.7
   10551   2086.8   10575   2085.6   10598     2082   10615   2081.7   10641   2082.7
   10653   2087.7   10679   2089.2   10705   2089.8   10742   2090.3   10771   2091.5
   10780   2090.5   10793   2092.7

Manning's n Values         num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9124    .055    9434    .045    9517    .035    9861    .045    9966    .045
   10038    .055   10575    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          9966   10038              375   362.2     375              .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev
    9124    9861

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.38

INPUT
Description:
Station Elevation Data     num=      75
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
    8816   2090.3    8849   2088.6    8903   2087.3    8954   2085.3    9005   2083.9
    9032   2082.6    9045   2082.1    9053   2082.7    9066   2082.1    9076   2080.1
    9083     2080    9098   2081.8    9126   2081.8    9174   2083.8    9211   2084.9
    9235   2085.4    9244   2085.7    9247   2084.8    9262   2085.9    9276     2086
    9287   2085.7    9308     2085    9333   2084.6    9379   2084.1    9415   2083.9
    9447   2083.6    9487   2082.2    9510   2081.2    9523   2081.6    9549     2082
    9565   2081.8    9571   2082.4    9601   2082.5    9624   2082.8    9672   2083.3
    9697   2083.3    9725   2082.4    9760   2083.4    9775   2084.1    9795     2084
    9810   2083.4    9830   2084.8    9865   2084.7    9873   2081.6    9883   2081.7
    9892   2082.7    9910   2083.3    9940   2082.8    9952   2080.6    9967   2082.1
    9984   2080.3   10000   2079.8   10012   2083.8   10026   2083.2   10037   2083.3
   10071   2081.7   10085   2081.5   10094     2084   10109   2084.6   10140   2084.3
   10152   2082.2   10162   2084.6   10174     2084   10194   2080.9   10203   2084.5
   10236   2084.5   10262   2078.2   10281   2078.9   10296   2084.1   10336   2085.8
   10404     2087   10466   2089.1   10498   2089.3   10528   2090.7   10546   2091.2

Manning's n Values         num=       9
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    8816    .055    9174    .045    9244    .035    9287    .055    9697     .07
    9865    .045   10012     .07   10236    .045   10296    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          9865   10012              255   538.7     760              .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev
    8816    9287

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 25.28

INPUT
Description:
Station Elevation Data     num=      57
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
    8848   2089.8    8893   2088.3    8943   2087.1    8997   2086.2    9033     2085
```

9077	2083.4	9099	2081.8	9134	2081.2	9154	2080.2	9166	2078.5
9174	2078	9181	2080.2	9199	2080.4	9222	2081.1	9234	2082.1
9269	2082.8	9292	2084.1	9320	2085	9323	2084.5	9330	2084.8
9337	2085.5	9360	2085.8	9378	2085.7	9386	2084.3	9409	2084
9433	2083.4	9450	2082.5	9487	2082	9498	2082.2	9523	2082.7
9552	2082.6	9577	2082.3	9606	2081.3	9632	2079.8	9648	2079.1
9657	2079.9	9675	2080.1	9687	2078.5	9707	2079.9	9725	2079.3
9767	2079.4	9791	2079.5	9807	2079	9838	2079.3	9849	2078.9
9887	2078.6	9899	2077.3	9919	2078.7	9954	2078.7	9965	2077.8
9978	2075.1	9995	2072.6	10000	2072.3	10014	2071.5	10024	2074
10052	2089.4	10060	2090.5						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8848	.055	9320	.035	9378	.055	9954	.045	10052	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9954	10052	950	867.5	715	.3	.5

Ineffective Flow num= 1

Sta L	Sta R	Elev
8848	9552	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 25.12

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9560	2078.3	9570	2077.5	9586	2077.5	9612	2076.9	9632	2076.2
9637	2077.3	9654	2074.7	9667	2074.1	9676	2075.1	9703	2074.3
9721	2072.5	9740	2071.6	9774	2069.4	9798	2066.9	9819	2069.4
9826	2068.6	9836	2069.9	9855	2071	9872	2071.7	9903	2074.9
9928	2074.9	9949	2073.5	9976	2066.7	9985	2066.2	10000	2064.7
10008	2065.2	10033	2065	10053	2070.6	10079	2072.1	10092	2071.5
10104	2072.4	10113	2075.3	10125	2075	10138	2071.2	10173	2073
10184	2072.5	10211	2072	10240	2072.3	10242	2077.9	10253	2072.5
10267	2072.4	10289	2075.6	10312	2082.4				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9560	.055	9949	.045	10053	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9949	10053	900	867.7	800	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9560	9928		10113	10312	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.95

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9846	2075.2	9874	2073.3	9901	2070	9920	2064.7	9939	2064.6
9953	2064.3	9975	2063.7	9989	2057.4	10000	2057.7	10007	2059.4
10018	2059.9	10024	2059.3	10033	2060.4	10069	2060.5	10086	2059.2
10097	2060.5	10121	2060.3	10135	2061.5	10159	2062.9	10173	2062.7
10185	2062.2	10201	2060.8	10204	2061.1	10226	2060.5	10236	2061.2
10248	2061.2	10258	2060.2	10266	2060	10275	2063.2	10296	2070.9

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9846	.07	9920	.045	9975	.045	10097	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975	10097	485	405.6	285	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.87

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9592	2071.9	9602	2067.9	9659	2061.1	9754	2061.7	9770	2061.3
9816	2061.2	9870	2061.7	9911	2061.6	9917	2059.7	9929	2061.1
9962	2060.7	9978	2055	10000	2054.6	10012	2056.3	10042	2056.4
10057	2057.8	10071	2059.1	10100	2058.6	10124	2057.2	10135	2060.1

10157	2060.8	10172	2061.5	10198	2062.8	10237	2071

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9592	.055	9659	.045	9911	.055	9962	.045	10071	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9962	10071	775	732.8	685	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.74

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9431	2065.3	9450	2062.9	9482	2060.4	9498	2058.1	9511	2057.8
9536	2057	9547	2056.2	9561	2055.2	9579	2054.7	9591	2055.9
9620	2055.8	9659	2055.4	9701	2055.4	9721	2055.2	9748	2055.4
9770	2055.3	9802	2055.6	9824	2054.7	9841	2055.2	9891	2055.4
9906	2055.2	9937	2055.1	9961	2055	9981	2045.8	10000	2046.1
10011	2048.3	10036	2049.5	10065	2051.2	10086	2053.8	10124	2053.9
10146	2054.1	10180	2053.1	10189	2052	10200	2052	10217	2055.6
10239	2055.5	10273	2057.7	10328	2062.1	10369	2063.9	10394	2065.4
10436	2065.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9431	.035	9961	.045	10086	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9961	10086	615	668.8	615	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.61

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9419	2052.5	9428	2050.4	9460	2049.9	9502	2049.7	9538	2049.3
9575	2049.2	9619	2048.9	9675	2048.8	9704	2048.7	9738	2048.4
9755	2044.8	9775	2044.9	9782	2046.7	9798	2047.7	9821	2048.5
9858	2048.6	9893	2048	9915	2046	9921	2046.2	9934	2045.9
9944	2046.1	9959	2042.9	9984	2040.7	10000	2040.2	10012	2045.3
10023	2046.5	10037	2045.5	10050	2047	10074	2048.1	10086	2049.2
10096	2049.8	10130	2050.2	10157	2050.7	10182	2051	10196	2051.4
10219	2051.6	10244	2051.8	10250	2052.4	10264	2052.8	10291	2054.9
10312	2056.3								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9419	.035	9738	.045	9798	.07	9944	.045	10023	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9944	10023	730	668.9	725	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.48

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9589	2047	9620	2043.8	9644	2042.3	9664	2042.4	9675	2039.1
9685	2039.4	9706	2039.2	9717	2038.5	9726	2040.8	9753	2042.6
9785	2043.3	9802	2040.4	9842	2040.4	9882	2041.8	9921	2041.7
9951	2041.5	9962	2037.2	10000	2036.8	10008	2038.7	10037	2037.8
10048	2042.9	10072	2042.5	10105	2044.3	10138	2046.9	10176	2048.9

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9589	.055	9675	.035	9717	.055	9951	.045	10048	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10048	385	501.7	550	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.38

INPUT

Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9708	2051.6	9743	2042	9780	2037.7	9794	2036	9811	2035.7
9834	2035.6	9863	2035.8	9875	2033.7	9888	2033.6	9897	2031.6
9911	2032.7	9930	2032.8	9944	2031.5	9954	2033.6	9974	2034
9981	2032.9	10000	2032.7	10004	2034	10038	2035.1	10077	2036.3
10089	2035.5	10095	2036.1	10138	2037.2	10160	2043	10176	2037.4
10193	2038	10210	2037.8	10223	2039.4	10290	2039.9	10329	2039.4
10377	2039.7	10388	2041	10437	2041.6	10478	2044	10503	2045.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9708	.055	9888	.045	10004	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9888	10004	640	708.8	450	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10160	10503	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.25

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9735	2047.9	9770	2040.4	9798	2037.4	9809	2035.3	9832	2034.2
9842	2033.9	9867	2034.4	9901	2033.8	9951	2034.6	9968	2025.5
9981	2024.8	10000	2024.2	10004	2024	10018	2034.5	10045	2032.8
10052	2033.1	10070	2031.6	10114	2032	10129	2031	10144	2031
10162	2027.1	10175	2027.4	10199	2027.2	10247	2035.8	10261	2034.3
10281	2033.5	10295	2034.3	10311	2033.9	10361	2035	10407	2035.5
10444	2036	10491	2037.1	10532	2038.2	10565	2038.8	10589	2040.1

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9735	.055	9809	.045	9951	.045	10018	.055	10144	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10018	765	708.6	665	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10247	10589	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.12

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9627	2040	9648	2033.7	9664	2033.1	9693	2033.6	9726	2033.9
9737	2028.6	9750	2028.2	9778	2028.8	9813	2028.5	9838	2028
9859	2027.8	9911	2026.6	9920	2024.1	9941	2023.5	9944	2020.6
9956	2020.7	9961	2021.2	9986	2021.6	10000	2021.8	10027	2022.2
10043	2023.4	10067	2027.2	10094	2028.1	10126	2027.9	10153	2028.3
10187	2029.3	10228	2029.8	10272	2030.5	10330	2032.1	10374	2033.3
10393	2034.3	10430	2035.9	10455	2036.7	10506	2038	10545	2039.2
10570	2040.1								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9627	.045	9911	.045	10067	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9911	10067	450	451.7	440	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 24.03

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9750	2028	9768	2019.6	9783	2023.4	9793	2023.5	9806	2021.3
9819	2018.8	9824	2018.8	9838	2022.7	9872	2024.3	9889	2024.4
9903	2023.6	9917	2022.7	9932	2025.1	9958	2021.5	9976	2017.5
10000	2017.6	10003	2017.8	10023	2022.1	10063	2021	10077	2021.8
10095	2021.2	10109	2017.8	10123	2017.9	10134	2019.5	10146	2019.9

10165	2018.6	10194	2023.3	10218	2024	10256	2022.9	10289	2023.4
10362	2024.1	10370	2023.3	10375	2024.5	10405	2024.9	10435	2026.5
10485	2026.3	10501	2027.5	10536	2029.8				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9750	.045	9932	.045	10023	.055	10194	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9932	10023	585	457.8	300	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.94

INPUT
Description: THE PRESENCE OF INNER-CHANNEL ISLANDS AT THIS CROSS-SECTION CAUSE FLOODWAY TOPWID TO EXCEED FLOODPLAIN TOPWID HOWEVER, FLOODWAY IS WITHIN BOUNDARIES OF FLOODPLAIN

Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9516	2027.1	9533	2017.8	9551	2016	9572	2015.9	9596	2019.4
9626	2019.8	9671	2020.8	9700	2021	9725	2021.4	9769	2021
9789	2020.7	9809	2021.5	9827	2020.9	9848	2021	9880	2020.6
9894	2017.4	9919	2016.4	9946	2015.4	9968	2013.2	9979	2011.7
10000	2010.6	10002	2010.4	10020	2020.1	10036	2020.1	10042	2015.1
10055	2020.1	10073	2020.4	10100	2020.9	10118	2020.8	10131	2021.6
10153	2021.9	10190	2023.1	10226	2025.2	10261	2026.9	10293	2029.9

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9516	.045	9596	.055	9880	.045	10020	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9880	10020	340	403.2	435	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.87

INPUT
Description:

Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9487	2023.3	9499	2022.3	9550	2020.6	9575	2020.9	9594	2019.9
9628	2018	9648	2013.9	9662	2013.6	9669	2013.8	9681	2013.5
9700	2015.5	9728	2016.7	9769	2017	9804	2016.9	9825	2016.1
9842	2017	9875	2017.1	9907	2017.7	9934	2016.7	9951	2010.1
9969	2009.9	9975	2009.2	10000	2008.8	10006	2009	10021	2016.7
10039	2017	10054	2016.6	10083	2016.7	10098	2017.3	10134	2018
10166	2018.8	10207	2020.4	10234	2020.9	10273	2023.6	10306	2025.8

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9487	.045	9628	.045	9728	.07	9934	.045	10021	.1
10098	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9934	10021	1125	1179.6	1200	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.64

INPUT
Description:

Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9081	2012	9109	2009.1	9138	2010.9	9200	2010.6	9231	2010.6
9271	2010	9295	2008.5	9317	2009.8	9349	2009.9	9387	2008.2
9404	2009.2	9421	2009.5	9435	2008.6	9458	2008.8	9510	2007.8
9517	2007.1	9528	2007	9537	2007.6	9556	2007.1	9572	2008.1
9599	2007.9	9630	2007.7	9658	2006.6	9671	2006.6	9677	2005.6
9691	2005.5	9701	2007.7	9715	2007.4	9720	2008.3	9732	2008.1
9747	2006.4	9767	2007.3	9799	2006.7	9846	2004.9	9855	2003.6
9863	2002.8	9877	2004.4	9889	2003	9912	2002.9	9925	2004.6
9941	2003.7	9970	2003.6	9978	2000.1	10000	2000	10005	2000.5
10019	2005.1	10032	2004.9	10039	2003.1	10054	2006	10071	2006.1
10078	2005.8	10097	2007	10114	2009.5	10136	2012.2	10155	2015.7

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9081	.055	9846	.07	9970	.045	10019	.1

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9970   10019              525   500.2     460            .1        .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9081    9421

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 23.55

INPUT
Description: Cross Section 23.55 Lengthened 44 feet  At Right Overbank Using
             Topographic Maps


Station Elevation Data    num=      55
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9263  2009.4    9315  2008.5    9335  2008.3    9375  2007.2    9405  2006.5
    9440  2005.9    9466  2005.3    9486  2004.5    9531  2003.7    9555  2003.9
    9559  2004.9    9569  2003.2    9588  2003.1    9594  2003.9    9603  2003.2
    9647  2002.1    9661  2001.6    9696  2002.5    9730  2001.9    9743  1996.9
    9766  1996.7    9781  1999.4    9791    1999    9801  1999.7    9809  1999.5
    9835  2000.3    9840  1999.1    9849  1999.5    9869  1999.2    9882  2000.3
    9905  2000.6    9916  2001.2    9945  2000.5    9959  1997.4    9976    1997
   10000  1997.7   10014  1997.9   10028  1999.2   10062  1999.6   10069  1999.4
   10076  1997.9   10081  1997.7   10091  1998.5   10102  2001.1   10131  2001.7
   10157  2001.3   10184  2000.2   10202  1998.8   10213  1999.1   10233  1998.6
   10242  1997.8   10248  1997.9   10264  2003.1   10289    2006   10308    2010

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9263    .045    9730    .045    9781    .055    9945    .045   10102     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9945   10102              325   545.1     595            .1        .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9263    9559

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 23.45

INPUT
Description:
Station Elevation Data    num=      39
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9460    2004    9576  2001.8    9590  2001.7    9623  2000.8    9662  1999.9
    9712  1999.2    9731  1998.8    9753    1998    9787  1997.6    9817  1998.1
    9850  1997.8    9874  1993.1    9888  1991.8    9909  1991.4    9927  1993.8
    9951  1994.2    9959  1995.1    9979  1994.8    9985  1991.5    9991  1991.5
   10000  1991.8   10005    1992   10020  1993.9   10039  1993.4   10058  1994.5
   10103  1995.7   10137  1994.5   10151  1994.5   10157  1993.7   10172  1994.8
   10236  1994.3   10252  1989.9   10260  1991.7   10270  1991.5   10279  1988.5
   10305  1988.4   10314  1989.5   10328  1989.5   10352  2000.1

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9460    .045    9787    .045    9927      .1    9979    .045   10020      .1
   10270    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9979   10020              530   623.5     630            .1        .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 23.33

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9541  1997.8    9565    1998    9582  1997.1    9646  1995.9    9703  1994.4
    9741  1992.7    9769  1990.4    9809  1989.2    9819  1988.3    9835  1989.6
    9858  1990.8    9896  1990.9    9924  1989.9    9942  1990.4    9963    1989
    9981  1981.3   10000  1981.1   10004  1981.1   10017  1985.3   10026  1985.4
   10038  1981.8   10048  1979.5   10057  1979.9   10065    1982   10082  1983.8
   10100  1983.9   10111  1985.4   10129  1985.6   10146  1987.8   10164  1988.1
   10182  1986.2   10202  1986.4   10222  1988.2   10253  1988.1   10269  1987.4
   10289  1985.8   10314  1986.7   10333  1985.1   10339  1984.6   10352  1988.4
   10368  1997.3   10386  2000.4

Manning's n Values        num=       4
```

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9541	.055	9963	.045	10017	.045	10065	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9963	10017	490	432.6	375	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.25

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9293	1995.4	9364	1994.8	9421	1994	9518	1993.5	9602	1992.6
9609	1991.5	9613	1991.8	9632	1991.8	9639	1991.3	9660	1989.2
9694	1985	9713	1984.5	9766	1983.9	9801	1985.6	9827	1985.9
9861	1983.8	9874	1983.5	9900	1984	9928	1983.4	9945	1980.3
9954	1977.5	9973	1977.8	10000	1977.3	10025	1981.3	10054	1981.3
10078	1981.9	10105	1982.1	10118	1982.9	10150	1983.4	10165	1982.6
10181	1984.1	10208	1983	10226	1984.4	10257	1984.9	10299	1984.8
10332	1983	10353	1983	10361	1981.5	10374	1982.6	10385	1980.9
10400	1983	10408	1983.2	10424	1988.6				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9293	.055	9928	.045	10025	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9928	10025	675	619.4	550	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 23.13

INPUT
Description: Cross Section 23.12 Lengthened 138 feet At Left Overbank Using Topographic Maps

Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9370	1982	9508	1980.4	9530	1979.3	9541	1978.8	9554	1976.9
9580	1975.8	9638	1976.1	9690	1978	9720	1979.4	9787	1979.7
9868	1980	9895	1978.3	9917	1976.9	9932	1970.6	9945	1970.6
9951	1972	9965	1972.1	9979	1971	10000	1969.8	10011	1977.2
10035	1976.9	10067	1978	10101	1977.4	10129	1976.4	10151	1976.3
10162	1974.6	10170	1975.4	10183	1974.1	10212	1979.6	10262	1984.6
10301	1987.7	10311	1989.9	10332	1990.6				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9370	.035	9720	.055	9917	.045	10011	.1	10212	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9917	10011	730	880.2	900	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.96

INPUT
Description: Beginning of Montgomery Watson's Analysis Cross Section 22.96 Lengthened 339 feet At left overbank using topographic maps
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8982	1976	9119	1974	9307	1972	9320	1972.6	9386	1972.3
9440	1971.4	9470	1970.3	9513	1970	9589	1970.3	9618	1970.5
9642	1969.4	9660	1968	9669	1968.3	9686	1969.4	9718	1970
9775	1970.9	9827	1970.6	9844	1969.3	9876	1969.6	9900	1968.6
9951	1966	9963	1962.9	9977	1960.8	10000	1959.6	10016	1975.7
10023	1976.9	10050	1976.7	10090	1978	10124	1979.7	10128	1979.9

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8982	.055	9307	.035	9513	.07	9844	.1	9951	.045
10016	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10016	1025	1033	1031.3	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.86

INPUT
Description:

Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8772	1970	8806	1969	8932	1968	9108	1966	9274	1964
9360	1962	9434	1960	9442	1959.5	9452	1960	9480	1961
9530	1962	9585	1962.5	9636	1962	9646	1960	9651	1961
9660	1960	9672	1960.5	9686	1960	9690	1958	9702	1958
9718	1960	9834	1962	9888	1962.5	9912	1962	9968	1960
9976	1958	10000	1953.5	10024	1954	10030	1956	10034	1958
10078	1960	10108	1960.5	10124	1960	10192	1962	10202	1964
10232	1966	10262	1968	10300	1970	10440	1972		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8772	.055	9672	.045	9718	.055	9834	.035	9912	.1
9968	.045	10034	.1	10108	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968	10034	370	370	370	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.79

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9140	1962	9195	1961	9240	1960	9270	1959	9310	1958
9380	1957	9390	1956	9410	1955.5	9420	1956	9440	1957
9510	1958	9550	1957	9590	1956.7	9660	1956	9690	1956
9700	1958	9720	1958.2	9785	1959.8	9830	1958	9880	1959
9900	1958	9930	1956	9940	1954	9965	1952	9985	1950
10000	1950	10010	1952	10040	1954	10060	1956	10100	1958
10125	1960	10165	1961	10295	1962				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9140	.055	9880	.1	9930	.045	10060	.1	10125	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10060	295	316.8	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.73

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9200	1960	9300	1955.5	9310	1955	9357	1954	9390	1953
9410	1953	9435	1954	9450	1954.2	9460	1954	9480	1953
9510	1952	9520	1952.5	9530	1952	9540	1954	9570	1953
9580	1952	9580.5	1953	9590	1953	9600	1954	9620	1954
9670	1954	9690	1956	9720	1957	9750	1956	9780	1954.8
9810	1956	9840	1956.2	9870	1956	9880	1954	9900	1952
9965	1950	9980	1948	9985	1947	10010	1947	10010	1948
10020	1950	10025	1954	10030	1956	10085	1957.5	10125	1958
10450	1960								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9200	.055	9870	.1	9965	.045	10030	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10030	330	316.8	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.67

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9165	1960	9230	1957	9290	1956	9400	1954	9430	1952
9440	1950	9450	1948	9460	1945	9480	1948	9540	1949
9560	1950	9610	1950.7	9665	1950	9680	1949	9690	1949

9700	1950	9730	1951	9785	1951	9800	1950.3	9850	1952
9930	1952	9950	1950	9980	1946	10000	1944.5	10020	1944.5
10040	1946	10050	1950	10070	1950	10087	1952	10120	1954
10195	1954.6	10275	1956						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9165	.045	9480	.055	9930	.045	10050	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10050	620	528	450	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.56

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9125	1952	9340	1950	9420	1945	9455	1940	9525	1940
9530	1938.5	9550	1940	9565	1942	9610	1944	9660	1945
9750	1946	9770	1946	9790	1946	9905	1946.5	9970	1946
9980	1940	9990	1938.6	10010	1938.6	10020	1940	10055	1942
10060	1944	10095	1946	10180	1946	10190	1944	10200	1944
10240	1946	10255	1948	10300	1947.5	10400	1948	10475	1948.4
10600	1950	10740	1952						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9125	.045	9610	.055	9970	.045	10095	.07	10180	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970	10095	335.4	422.4	390	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10255	10740	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.48

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8700	1946	8780	1944	8990	1942	9025	1938	9040	1937
9070	1936	9080	1935	9095	1937	9115	1938	9133	1940
9178	1945	9230	1945	9268	1943	9310	1940	9338	1938
9350	1937.5	9395	1938	9415	1939	9440	1940	9460	1940
9485	1940	9503	1940	9515	1940.7	9565	1940	9578	1939.6
9583	1940	9645	1941	9670	1942	9690	1942.6	9705	1942
9720	1941	9730	1940.4	9745	1942	9765	1942	9805	1943
9900	1944	9932	1944	9952	1942	9967	1940	9980	1936
10013	1936	10045	1940	10055	1942	10072	1942	10085	1942
10095	1944	10113	1944	10140	1942	10155	1942	10172	1942.5
10185	1942	10212	1940	10225	1938	10237	1938	10245	1940
10255	1942	10330	1944	10420	1944.8	10650	1946		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8700	.055	8990	.045	9440	.055	9932	.045	10095	.07
10212	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9932	10095	210.7	264	220	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8700	9230	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.43

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8745	1944	8955	1942	9000	1936	9020	1934	9060	1935
9070	1933.4	9080	1935	9098	1936.8	9140	1936	9163	1935
9173	1934	9180	1935	9185	1936	9287	1938	9295	1939
9340	1939	9367	1938	9375	1937	9400	1936	9415	1935
9425	1935	9440	1937	9452	1935	9535	1940	9570	1937.5
9630	1939.3	9665	1939	9690	1939	9745	1940	9827	1940

9880	1941.5	9915	1940	9950	1940	9960	1938	9970	1934
9980	1936.2	10000	1936.2	10010	1934	10025	1938	10050	1940
10065	1939.8	10080	1940	10110	1941.5	10135	1940	10165	1940
10175	1936	10190	1936	10210	1934	10223	1936	10225	1938
10240	1940	10310	1942	10825	1942	10965	1944		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8745	.055	9000	.045	9080	.055	9140	.045	9185	.055
9950	.045	10050	.07	10165	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10050	410	369.6	340	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.36

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9050	1940	9110	1930	9150	1928	9172	1927	9185	1926
9200	1929	9210	1925	9220	1926	9236	1930	9250	1932
9305	1933	9333	1934	9365	1935	9402	1936	9460	1937
9525	1937.8	9605	1937	9630	1936	9632	1934	9635	1934
9650	1933.3	9660	1934	9675	1934.7	9735	1936	9750	1937
9765	1936	9787	1934	9800	1932.5	9822	1936	9850	1935
9860	1936	9890	1938	9940	1938	9975	1930	9985	1929
10000	1929	10010	1930	10025	1934	10040	1936	10070	1938
10110	1938	10140	1936	10155	1934	10180	1932.2	10195	1934
10202	1936	10232	1938	10285	1938.8	10345	1938	10420	1937.3
10485	1936	10490	1935	10525	1936	10650	1936	10655	1935
10670	1936	10710	1938	10805	1940	10845	1940.7		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9050	.055	9110	.045	9402	.035	9630	.07	9940	.045
10070	.07	10110	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10070	435.7	369.6	370	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.29

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8908	1935	8955	1930	8960	1925	8965	1924.5	8985	1924
9005	1923.5	9015	1924	9050	1923	9055	1923.5	9065	1924
9085	1924.5	9100	1926.5	9110	1927	9120	1927.2	9140	1927.8
9175	1928.5	9250	1929.5	9300	1931	9350	1932.5	9400	1933.2
9465	1934	9491	1934	9630	1932	9640	1930	9652	1925
9672	1926	9710	1928	9740	1930	9770	1932	9860	1932
9880	1931	9890	1932	9908	1934	9930	1934	9972	1932
9980	1930	9982	1928	9984	1926	9990	1925.5	10010	1925.5
10020	1926	10030	1930	10040	1932	10060	1934	10072	1934
10100	1932	10110	1931.9	10115	1932	10155	1932.4	10205	1932
10240	1931.6	10273	1932	10320	1932.4	10380	1931.7	10410	1932
10534	1934	10678	1936						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8908	.055	8955	.045	9350	.035	9630	.045	9770	.07
9972	.045	10040	.07	10155	.045	10320	.07		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10040	358.9	369.6	280	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.22

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8685	1930	8800	1928	8895	1925	8907	1924	8920	1923
8935	1920	8970	1918	8990	1923	9058	1924	9105	1924
9125	1925	9138	1927	9210	1929	9410	1929.8	9510	1928
9530	1922	9533	1920	9552	1919.6	9565	1920	9577	1922

9585	1924	9590	1926	9600	1928	9648	1928	9657	1926
9662	1925.6	9670	1926	9680	1928	9712	1930	9795	1929.5
9915	1930	9935	1930.2	9955	1930	9975	1928	9985	1922
10000	1921.5	10020	1921.5	10055	1928	10067	1930	10080	1930.2
10097	1930	10117	1930	10145	1930.2	10170	1930	10205	1928
10240	1930	10305	1932	10455	1932.5	10555	1933		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8685	.045	9210	.035	9510	.045	9600	.055	9955	.045
10067	.07								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9935	10080	312.4	369.6	473.3	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.15

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8312	1926	8385	1925	8520	1923	8540	1918	8550	1916
8560	1918	8565	1920	8579	1923	8585	1923.3	8615	1923
8680	1922	8705	1921	8722	1922	8756	1922.8	8822	1922
8840	1921	8853	1920	8867	1918	8885	1916	8895	1915
8905	1916	8915	1920	9030	1922	9045	1924	9075	1925
9105	1926	9170	1927	9308	1926	9325	1924	9350	1922
9360	1920	9385	1918.4	9410	1920	9430	1922	9445	1924
9456	1926	9515	1926	9535	1923	9550	1926	9575	1927.2
9662	1926	9786	1924	9800	1924	9815	1925.3	9825	1924
9853	1924	9870	1923.3	9917	1926	9960	1924	9972	1922
9985	1920	9990	1919	10010	1919	10015	1920	10022	1922
10050	1924	10075	1926	10135	1927.4	10160	1926	10185	1925.8
10210	1926	10265	1926.4	10295	1926	10325	1926	10376	1928

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8312	.055	8520	.045	9105	.035	9308	.045	9575	.055
9815	.07	9960	.045	10050	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960	10050	330.7	369.6	378.9	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 22.08

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8620	1930	8660	1925	8700	1930	8720	1919	8765	1920
8785	1920	8835	1915	8850	1919	8875	1919	8895	1916
8910	1919	8950	1921	9090	1921	9120	1920	9150	1918
9170	1918	9180	1916	9200	1915	9210	1913	9235	1915
9250	1918	9260	1918	9270	1917	9280	1916	9290	1915.8
9315	1918	9345	1920	9360	1918	9390	1916.2	9450	1918
9465	1920	9480	1921.2	9515	1920	9525	1918.5	9555	1920
9565	1920.3	9575	1920	9585	1918.6	9605	1920	9635	1922
9655	1922.7	9770	1922	9870	1921	9905	1922	9915	1922.2
9930	1922	9950	1920	9970	1917	9975	1916	9990	1915
10010	1915	10020	1916	10040	1918	10055	1922	10080	1922
10110	1920	10130	1920	10155	1918.3	10175	1920	10220	1922
10270	1920	10305	1922	10420	1924	10545	1926		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8620	.055	8950	.045	9480	.045	9930	.045	10055	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10055	450.7	475.2	300	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.99

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8660	1925	8675	1910	8740	1915	8765	1916	8835	1918
8895	1914	9025	1918	9095	1917	9105	1912	9130	1910

9147	1911	9175	1912	9218	1913	9272	1916	9320	1916
9390	1914	9445	1914	9485	1916	9500	1916	9518	1914
9550	1916	9603	1916	9700	1917.8	9740	1916.6	9800	1918
9850	1919	9960	1918	9975	1912	9985	1910	10000	1909.9
10008	1910	10022	1912	10090	1916	10160	1918	10185	1918
10195	1916	10210	1916	10235	1917.2	10255	1916	10260	1914
10270	1913.4	10275	1914	10285	1916	10320	1918	10362	1920
10435	1922								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8660	.055	8675	.045	8765	.055	9105	.045	9800	.035
9960	.045	10090	.055	10320	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960	10090	400	422.4	470	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.91

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8740	1925	8780	1920	8805	1915	8826	1910	8835	1907
8850	1906	8863	1906	8883	1906	8895	1905	8915	1902
8935	1905	8945	1909	8990	1910	9030	1912	9070	1912.5
9125	1912	9190	1910	9250	1911.1	9320	1910	9370	1908
9380	1910	9410	1908	9425	1910	9460	1912	9490	1910
9500	1912	9525	1914	9730	1914.6	9830	1914	9878	1912
9940	1910	9975	1908	9990	1906	10000	1906	10020	1910
10040	1912	10060	1912.5	10080	1912	10120	1912.5	10150	1912
10180	1910.6	10210	1912	10250	1914	10370	1916		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8740	.055	8883	.045	9500	.035	9830	.07	9940	.045
10040	.07	10250	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10040	450.3	475.2	450.3	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.82

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8655	1920	8700	1906	8720	1906	8740	1904	8750	1903
8760	1902	8790	1901	8805	1900	8830	1901	8850	1905
8860	1907	8935	1908	8970	1908	9025	1908.7	9080	1908.2
9110	1908.9	9135	1908	9185	1906	9195	1905	9210	1906
9240	1905.2	9250	1906	9260	1906.5	9285	1906	9300	1904
9310	1902.3	9340	1904	9355	1906	9375	1908	9475	1909.4
9605	1909.3	9805	1909.6	9830	1908	9855	1906	9865	1904.3
9885	1905.8	9915	1906	9950	1906	9965	1904	9970	1902
9980	1900.5	10000	1900.5	10015	1902	10040	1904.5	10070	1906
10150	1906.7	10180	1908	10250	1910	10350	1911		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8655	.055	8720	.045	9475	.035	9805	.07	9855	.045
9885	.07	9950	.045	10070	.055				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10070	240.7	264	297.2	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.77

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8630	1915	8652	1910	8680	1909	8697	1905	8705	1900
8720	1895	8745	1899	8815	1900	8837	1904	8850	1905
8876	1905	8952	1905	9005	1906	9075	1906	9115	1906
9180	1904	9205	1902	9240	1902	9255	1900	9270	1902
9290	1904	9320	1904	9325	1902	9340	1902	9355	1906
9395	1906	9445	1906	9535	1906	9565	1905.3	9620	1906

9740	1906.5	9785	1906	9795	1904	9830	1902	9850	1900
9885	1900	9910	1900	9955	1902	9965	1900	9970	1898
9975	1898	10000	1897.3	10005	1898	10015	1900	10030	1902
10045	1904	10115	1904	10130	1903.1	10150	1904	10205	1906

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8630	.055	8697	.045	9355	.035	9785	.07	9830	.045
9955	.045	10045	.055						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9955	10045	442.2	422.4	422.4	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.69

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8860	1910	8878	1900	8900	1890	8932	1890	8960	1896
8970	1898	9020	1900	9060	1900.9	9070	1900	9080	1899.3
9110	1900	9145	1900	9180	1900.8	9230	1900.8	9290	1900
9310	1898	9365	1896	9380	1894	9390	1896	9415	1898
9480	1899.9	9505	1898	9510	1897.3	9515	1898	9575	1900
9660	1901.6	9685	1901.8	9755	1900.8	9780	1900	9815	1898
9907	1896.1	9940	1898	9982	1896	10000	1895.1	10015	1896
10025	1898	10085	1900	10157	1898	10160	1897.1	10175	1898
10265	1900	10280	1902	10300	1902.2	10615	1904		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8860	.055	8878	.045	9780	.07	9940	.045	10025	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10025	408	422.4	320	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.63

INPUT
Description:
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9060	1910	9130	1908	9140	1906	9180	1900	9212	1900
9220	1888	9230	1888	9250	1890	9260	1892	9290	1894
9320	1896	9375	1894.9	9435	1897.6	9480	1898	9560	1898
9585	1896	9605	1894	9625	1892	9633	1898.6	9645	1892
9660	1894	9695	1896	9725	1896	9785	1894	9800	1892.6
9805	1894	9830	1896	9930	1898	9980	1896	9990	1890
10000	1888.5	10007	1890	10025	1892	10085	1894	10140	1895.3
10185	1894	10190	1892	10205	1892	10220	1894	10240	1894.8
10255	1894	10270	1893.8	10275	1894	10300	1896	10400	1897.7
10530	1898	10565	1898.3	10585	1898	10600	1898	10705	1900
10840	1902	10950	1904	11015	1906	11085	1908	11175	1910

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9060	.055	9212	.045	9633	.055	9980	.045	10085	.07
10185	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980	10085	280	264	370	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.58

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9220	1906	9250	1904	9320	1900	9365	1886.8	9395	1886.8
9400	1888	9415	1890	9430	1892	9465	1892	9510	1894
9565	1894	9590	1892	9615	1888	9640	1892	9670	1894
9725	1894.7	9750	1894	9780	1893.3	9815	1894	9890	1892
9910	1890.1	9940	1892	9965	1890	10000	1888	10025	1890
10050	1892	10090	1893.8	10155	1890	10170	1888	10185	1890
10235	1892	10255	1894	10310	1894.3	10355	1894	10425	1892.2
10482	1894	10525	1894.8	10630	1895.5	10800	1897		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9220	.035	9320	.045	9430	.07	9590	.045	9640	.055
9940	.045	10090	.055	10155	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10090	525	475.2	250	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.49

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9565	1892.5	9585	1892	9640	1890	9690	1888	9695	1884
9710	1882	9715	1884	9730	1884.5	9755	1884	9770	1883.3
9780	1886	9840	1887	9900	1887.7	9925	1886	9940	1885.3
9950	1886	9990	1886	9995	1884	10000	1883	10010	1884
10035	1885	10040	1884	10060	1882	10070	1884	10080	1888
10130	1889.4	10155	1888	10175	1884	10195	1882.5	10210	1884
10220	1884	10240	1886	10270	1888	10295	1890	10345	1892
10390	1891.5	10515	1894.1						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9565	.045	9690	.07	9780	.1	9900	.045	10080	.1
10155	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9900	10080	475	475	475	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.41

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9110	1890	9250	1888	9330	1886	9510	1885	9575	1884
9590	1880	9600	1879	9620	1880	9630	1882	9670	1882.5
9720	1882	9765	1880	9795	1877.5	9805	1880	9830	1881
9845	1880	9855	1879	9865	1880	9910	1882	9930	1880
9980	1878	10000	1874.2	10010	1880	10020	1882	10030	1884
10060	1886	10165	1888	10290	1889				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9110	.055	9575	.038	9630	.1	9765	.038	9805	.1
9980	.038	10010	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980	10010	422	422	422	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.35

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8755	1888	9110	1886	9225	1884	9320	1882	9330	1880
9350	1879.2	9400	1880	9490	1881.5	9620	1881	9750	1880
9755	1878	9760	1876	9770	1874.2	9800	1876	9810	1878
9895	1878	9915	1876	9970	1874	9980	1872	10000	1871.5
10015	1872	10025	1878	10030	1880	10040	1882	10105	1884
10310	1886	10430	1886.8	10500	1887				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8755	.035	9320	.055	9750	.038	9810	.1	9970	.038
10025	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970	10025	205	211.2	220	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.31

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8660	1887.3	8740	1886	8930	1884.3	9040	1885	9125	1884
9200	1882	9275	1880	9280	1878	9290	1876.4	9310	1878
9410	1880	9500	1880.7	9570	1880	9640	1878.8	9700	1879.8
9825	1878	9855	1872	9870	1871.2	9880	1872	9890	1874
9900	1876	9920	1876.5	9940	1876	9950	1874	9965	1872
10000	1870.7	10015	1872	10050	1878	10065	1880	10105	1882
10190	1883.5	10230	1883.9	10585	1884				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8660	.035	9410	.055	9825	.07	9940	.038	10050	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10050	230	316.8	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.25

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8610	1887	8650	1886	8723	1885.2	8857	1884	8890	1883.2
9025	1884	9125	1882	9220	1880	9225	1878	9260	1875.3
9275	1876	9310	1878	9365	1879	9410	1878.4	9500	1879.8
9515	1879.8	9655	1878	9685	1877	9730	1877.6	9820	1876.5
9860	1876.6	9880	1876	9910	1875	9935	1874	9965	1870
10000	1868.7	10045	1870	10055	1878	10090	1880	10120	1880
10365	1880	10400	1878.3	10430	1878.4	10490	1879.5	10540	1880
10600	1880.7	10715	1882	10850	1884				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8610	.035	9220	.055	9935	.038	10055	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9935	10055	420	369.6	370	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.18

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8690	1876	8800	1875.2	8940	1875	9050	1876	9155	1874
9225	1872	9240	1870	9250	1869.7	9260	1870	9300	1872
9330	1874	9420	1874.4	9490	1874	9650	1872.5	9845	1872.9
9950	1872	9970	1870	9980	1868	9988	1866	10000	1865
10010	1866	10080	1868	10090	1870	10100	1872	10120	1874
10200	1876	10270	1878	10365	1878	10480	1877.3	10535	1878
10700	1880								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8690	.035	9225	.055	9950	.038	10100	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10100	360	369.6	355.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8690	9050	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 21.11

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8410	1880	8480	1876	8535	1874	8595	1872.3	8735	1872
8910	1874	9025	1874	9160	1872	9280	1870	9325	1868
9365	1866.5	9410	1868	9450	1869.7	9555	1868	9675	1869.3
9715	1869.1	9770	1870	9850	1870	9910	1868	9930	1866
9945	1864	9960	1862	9990	1860.5	10020	1862	10035	1864
10055	1866	10080	1868	10125	1870	10185	1872	10420	1874
10580	1876								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

```
    8410    .045    9280    .055    9910    .038   10080    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9910   10080             260   316.8     370             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    8410    8950

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 21.05

INPUT
Description:
Station Elevation Data    num=      36
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
    8540    1870    8560   1869.5    8605    1870    8670    1870    8730   1869.5
    8750    1870    8825    1872     8875   1872.3   8975    1872    9080    1870
    9220    1868    9345    1866     9400   1864.8   9430    1866    9475   1866.4
    9520    1866    9545   1865.5    9560    1866    9610    1867    9670   1866.3
    9775   1867.4   9830    1866     9892    1866    9920    1864    9930    1862
    9960    1860    9990    1858    10000   1857.6   10012   1858   10022    1860
   10045    1866   10075    1868    10095   1869.2   10145  1868.3  10375    1870
   10475    1872

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    8540    .045    9345    .055    9892    .038   10045    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9892   10045             340   369.6     380             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    8540    8875

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 20.98

INPUT
Description:
Station Elevation Data    num=      41
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
    8490    1870    8540    1868     8580   1866.2    8660   1866.7   8800   1866.2
    8955    1868    9145    1866     9330    1864     9380   1862.8   9390   1863.2
    9425    1862    9440    1861     9465    1862     9500   1861.3   9520    1862
    9580   1863.6   9615   1863.3    9645    1864     9695   1864.2   9730    1864
    9870    1862    9880    1861     9920    1860     9945    1858    9965    1856
    9995    1854   10000   1853.2   10005    1854    10020    1860   10060   1864.7
   10125    1866   10165   1866.2   10220    1866    10280    1864   10315    1864
   10390    1866   10470    1870    10480    1872    10505    1874   10565    1876
   10605    1878

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    8490    .045    9330    .055    9870    .038   10060    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9870   10060             400   422.4   430.5             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    8490    8955

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 20.9

INPUT
Description:
Station Elevation Data    num=      33
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
    8740    1864    8790   1862.7    8845   1863.2    8915    1862    8950   1861.5
    8965    1862    9090   1863.2    9200    1862     9360    1862    9425    1862
    9560    1858    9625    1858     9810   1860.7    9830    1860    9850    1858
    9865   1857.5   9875    1858     9885   1858.2    9900    1858    9950    1856
    9965    1854   10000   1852.6   10030    1854    10042    1858   10050    1860
   10090   1860.9  10210   1860.5   10275    1860    10330  1858.5  10385    1860
   10475    1861   10520    1864    10545    1866

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    8740    .045    9425    .055    9810     .07    9885    .038   10050    .045

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

```
          9885   10050                570   580.8     480              .1        .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev
    8740    9090

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 20.79

INPUT
Description:
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    8860    1859    8895    1858    8925  1857.4    8980  1857.2    9030    1857
    9070    1856    9240    1855    9300    1854    9350    1854    9385    1853
    9415    1852    9440    1851    9450    1852    9585    1853    9907    1855
    9937    1854    9950    1852    9980    1850    9990    1848   10000  1847.5
   10027    1848   10070    1850   10083    1852   10118    1854   10160  1855.3
   10205  1854.3   10300    1855   10350    1854   10385    1853   10465    1854
   10530    1856   10645    1860

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    8860    .045    9907    .038   10160    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9907   10160               460   422.4     575              .1        .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev
    8860    9240

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 20.71

INPUT
Description:
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9055    1855    9060    1854    9095    1853    9122  1852.9    9212    1852
    9265    1851    9290  1850.8    9350    1851    9430    1851    9455    1850
    9460    1849    9480    1848    9490    1848    9550    1849    9625    1850
    9720    1850    9750    1850    9810    1851    9910    1852    9960    1851
    9990    1844    9995    1843   10020    1844   10040    1846   10075    1847
   10085    1850   10140    1850   10160    1851   10170    1852   10230    1852
   10270    1851   10370    1850   10390    1849   10470    1850   10534    1854
   10610    1856

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9055    .045    9625    .035    9750    .055    9960    .038   10085    .055
   10470    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9960   10085               475   369.6     320              .3        .5

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 20.64

INPUT
Description: Beginning of Castro Fleet's Analysis (Del Webb Area)  Cross
             Section Identification Numbers Were Increased by a factor ranging
             from 0.25 to 0.14 miles for consistency with Montgomery Watson
             Modeling.  For example, Castro Fleet cross section 20.39 becomes
             Montgomery Watson cross section 20.64
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9140    1860    9220    1848    9300  1846.5    9430    1847    9500    1845
    9660    1847    9940    1847    9950    1844    9970    1842   10000    1842
   10020    1842   10030    1844   10110    1848   10210    1848   10310    1844
   10340    1844   10360    1843   10370    1844   10420    1848   10600    1852
   10830    1856   11100    1860

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9140    .055    9220    .045    9660    .035    9940    .038   10110    .055
   10420    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9940   10110             112.5     135   137.5              .1        .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 20.62
```

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9218	1854	9257	1848.4	9269	1846.4	9297	1845.8	9324	1844.7
9340	1845.8	9381	1846	9417	1846.6	9438	1845.7	9464	1845.2
9486	1844.5	9511	1843.9	9518	1842.5	9526	1844.1	9552	1844.7
9592	1845.3	9629	1845.8	9687	1846	9735	1846.1	9789	1846.1
9840	1846.5	9863	1847.1	9868	1846.5	9913	1846.9	9953	1846.8
9969	1845.6	9996	1839.7	10000	1839.8	10019	1840	10042	1839.3
10053	1843.3	10074	1844.3	10092	1844	10110	1845.1	10134	1846.7
10182	1847.1	10229	1846.7	10275	1846.6	10310	1845.6	10333	1844.5
10344	1842.9	10354	1844.2	10366	1844	10373	1840.3	10384	1843.4
10407	1844.1	10429	1844.2	10479	1848.4	10531	1849.6	10591	1850.8
10631	1851.3	10692	1851.9	10742	1853.1	10786	1853.8	10840	1854.5
10898	1855.5								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9218	.055	9269	.045	9526	.035	9969	.038	10053	.055
10429	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969	10053	915	788.9	580	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.48

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9183	1846.5	9221	1842.4	9262	1839.1	9283	1838	9345	1837.3
9355	1836.5	9361	1837.5	9412	1837.6	9460	1837.7	9516	1838.6
9572	1839	9640	1839.4	9704	1839.7	9740	1838.6	9768	1834.9
9779	1836.7	9799	1838.1	9823	1838.7	9831	1837.9	9847	1839.3
9864	1838.7	9896	1838.4	9916	1839.8	9931	1840.7	9972	1840.6
9986	1833.9	10000	1834	10014	1833.9	10023	1832.8	10050	1833
10065	1838.6	10087	1838.2	10112	1839	10139	1839.5	10187	1838.8
10195	1838.7	10224	1839.2	10238	1838.6	10261	1835.2	10282	1832.4
10309	1833.4	10327	1838.4	10350	1839	10390	1838.5	10422	1838.9
10485	1840	10529	1841.4	10561	1842.6	10597	1843.7	10655	1844.6
10697	1845.6	10752	1847.1						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9183	.055	9283	.045	9704	.07	9972	.038	10065	.07
10238	.038	10327	.055	10529	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10065	600	526.7	520	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.38

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9126	1840.6	9160	1836.4	9184	1834	9192	1832.5	9230	1830.6
9246	1829.9	9254	1830.6	9288	1830.9	9338	1831.8	9368	1832.3
9434	1832.4	9490	1831.3	9519	1826.9	9537	1827.2	9545	1829.2
9576	1830	9589	1831.6	9612	1831.4	9643	1830.9	9666	1832.2
9709	1833.5	9741	1834.1	9771	1834.7	9813	1835.2	9881	1835.5
9895	1834.7	9900	1835	9927	1834.2	9951	1837.5	9968	1832.6
9990	1830.2	10000	1829.6	10026	1829.6	10043	1835.9	10087	1835.6
10133	1835.6	10164	1834.5	10195	1833.5	10216	1832.2	10229	1830.5
10256	1828.9	10293	1833.1	10312	1833.2	10335	1832.1	10376	1828.9
10386	1826.6	10405	1825.9	10419	1835.3	10447	1836.4	10512	1838.3
10570	1840.2								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9126	.055	9184	.045	9490	.055	9951	.038	10043	.07
10335	.038	10419	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951	10043	475	622.3	650	.1	.3

CROSS SECTION RIVER: RIVER-1

REACH: Reach-1 RS: 20.26

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9079	1841.1	9115	1837.6	9151	1832.2	9182	1823.3	9191	1825.3
9208	1825.4	9218	1824.1	9224	1825.7	9253	1825.2	9307	1826
9342	1826.8	9363	1828.1	9404	1828.4	9465	1829.1	9507	1829.6
9540	1829.5	9622	1830.4	9632	1824.8	9639	1825	9650	1826.2
9664	1826.5	9675	1828.9	9699	1829.6	9705	1828.5	9715	1830.4
9758	1831.4	9814	1830.1	9837	1829.7	9846	1828.3	9865	1829.5
9879	1830.1	9920	1828.2	9945	1828.4	9956	1827.2	9972	1827.2
9988	1826.1	10000	1825.2	10010	1827.3	10026	1827.9	10054	1828.2
10064	1825.5	10080	1825.1	10088	1825.8	10096	1828.7	10154	1828.6
10194	1828.6	10234	1828.5	10252	1828.5	10286	1827.7	10319	1825.4
10332	1822.4	10351	1821.9	10362	1822	10376	1823.4	10399	1831.1
10430	1831.8	10506	1832	10517	1833.5	10529	1830.7	10537	1831.7
10569	1832.9	10610	1833.5	10643	1834.2	10700	1834.9	10737	1835.9

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9079	.07	9307	.045	9622	.038	9675	.07	9945	.038
10096	.055	10319	.038	10399	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945	10096	460	531.6	585	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.16

INPUT
Description: THE PRESENCE OF INNER-CHANNEL ISLANDS AT THIS CROSS-SECTION CAUSE FLOODWAY TOPWID TO EXCEED FLOODPLAIN TOPWID HOWEVER, FLOODWAY IS WITHIN BOUNDARIES OF FLOODPLAIN
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9031	1830.2	9108	1826.4	9139	1826	9167	1823.8	9194	1822
9200	1820.4	9212	1822.2	9232	1824.2	9258	1825	9304	1825.2
9319	1825	9350	1825.2	9361	1824.4	9371	1825.6	9392	1825.3
9406	1821.1	9412	1821.4	9419	1822.9	9425	1823	9445	1825.8
9480	1825.2	9525	1824.7	9578	1823.3	9589	1820.9	9606	1821.7
9622	1821.1	9642	1819.3	9654	1822.4	9666	1823.6	9722	1823.3
9744	1823.1	9757	1822	9772	1822.7	9783	1821.3	9792	1821.3
9801	1822.8	9815	1822.3	9843	1823.3	9868	1823.6	9878	1821.8
9915	1821.9	9922	1821.2	9937	1821.6	9953	1821.5	9966	1818.5
9969	1818.4	10000	1817.7	10015	1823.9	10071	1823.6	10096	1822.5
10118	1818.7	10139	1819	10178	1818.8	10195	1818.4	10208	1822
10255	1822	10284	1823.5	10336	1823.1	10362	1818.5	10374	1816.2
10399	1815.5	10419	1821.2	10433	1823.5	10460	1821.4	10473	1821.3
10501	1827.1	10517	1828.7						

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9031	.035	9167	.07	9232	.055	9392	.038	9445	.055
9578	.038	9666	.055	9953	.038	10015	.055	10096	.038
10208	.055	10336	.038	10433	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9953	10015	450	555.7	635	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 20.05

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9039	1828	9079	1825.1	9125	1823.7	9157	1823.8	9204	1823.6
9253	1822.6	9335	1821.4	9358	1820.6	9370	1821.5	9394	1820.6
9416	1819.6	9455	1820.6	9477	1815.6	9503	1815.4	9517	1813.8
9541	1818.4	9582	1817.8	9602	1817.2	9625	1819.1	9637	1814.9
9646	1815.6	9655	1815.7	9688	1815.9	9702	1815.5	9716	1820.9
9721	1819.4	9750	1818.7	9760	1814.4	9772	1813.5	9786	1813.8
9802	1816.1	9837	1814.9	9849	1815.8	9857	1815.7	9864	1814.1
9878	1816	9903	1816.9	9916	1816.5	9935	1812.5	9942	1812.6
9954	1814.4	9967	1813	9974	1813.9	9980	1813.9	9996	1810.7
10000	1811.1	10011	1814.9	10032	1816	10064	1816.4	10113	1815.2
10133	1813.6	10143	1813.6	10156	1816.9	10212	1816.8	10230	1815.5
10241	1816.3	10307	1817.1	10334	1817.5	10363	1815.2	10382	1815.1
10416	1811.9	10447	1811.2	10476	1821.5	10491	1823.1	10529	1824.4

10579	1825.4	10625	1825.5	10672	1826.7

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9039	.035	9455	.038	9541	.055	9625	.038	9716	.07
9954	.038	10011	.055	10113	.038	10156	.055	10334	.038
10476	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9954	10011	815	700	770	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.92

INPUT
Description: CROSS SECTION 19.92 LENGTHENED 865 FEET AT LEFT OVERBANK USING TOPOGRAPHIC MAP

Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8928	1820	8966	1818	8991	1816	9091	1816	9241	1814
9365	1813.1	9529	1814	9617	1814	9667	1814	9705	1812
9718	1810	9793	1810.2	9827	1811.6	9863	1813.4	9879	1813.8
9909	1813.7	9948	1812.6	9959	1814.2	9974	1809.7	9985	1810.5
10000	1803.6	10014	1802	10024	1802	10044	1805.4	10057	1808.1
10066	1806	10082	1809.4	10097	1810.4	10133	1811	10180	1811.4
10199	1809	10220	1808.9	10230	1809	10241	1809.9	10268	1809.5
10283	1809.7	10305	1812	10320	1811.8	10343	1811.7	10358	1811
10373	1808.8	10399	1816.5	10413	1817.6	10433	1818.3	10462	1819.8
10505	1820.5	10531	1820.8						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8928	.035	9718	.055	9985	.05	10057	.07	10180	.05
10305	.055	10399	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985	10057	250	492	660	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.83

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8883	1815.8	8943	1814.6	8997	1814	9054	1813.4	9125	1812.8
9179	1811.8	9223	1811.7	9270	1811.4	9332	1811.3	9390	1811.2
9457	1811.4	9547	1811.3	9602	1811.4	9651	1811.6	9681	1812
9711	1811.8	9736	1810.3	9751	1807.2	9761	1806.9	9770	1807.3
9804	1807.1	9826	1806	9836	1807	9862	1806.3	9881	1807.6
9908	1807.7	9929	1805.3	9943	1805.5	9960	1805.8	9974	1802.8
10000	1801.2	10018	1800.7	10035	1799.3	10045	1801.9	10074	1806.6
10121	1806.2	10150	1808.3	10184	1807.5	10206	1803.9	10222	1804.5
10263	1805.7	10301	1806.9	10333	1807.9	10372	1808.1	10398	1808.7
10429	1810.5	10487	1812						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8883	.035	9751	.055	9960	.05	10074	.07	10184	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960	10074	500	567.8	600	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.72

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8917	1812.3	8958	1810.8	9008	1809.5	9064	1809.2	9129	1808.4
9196	1808.3	9243	1807.8	9298	1807.2	9350	1806.8	9423	1806.7
9474	1806.8	9534	1807.4	9576	1807.5	9623	1807.2	9677	1808
9715	1808.6	9793	1808.4	9812	1801.9	9822	1800.9	9847	1801.3
9871	1802	9884	1797.2	9893	1796.5	9905	1799.8	9926	1801.6
9948	1800.7	9961	1798.3	9973	1798.4	9989	1797.8	10000	1796.5
10018	1795.1	10030	1796.9	10043	1801.8	10064	1803.5	10089	1802.9
10108	1802.3	10129	1802.7	10160	1801.7	10187	1801.7	10225	1800.4

10241	1797.4	10261	1797.5	10275	1799.5	10300	1802.1	10326	1803.1
10359	1802.7	10408	1801.2	10465	1799.9	10483	1798.3	10498	1798.4
10513	1799.1	10533	1803.1	10563	1805	10592	1806.4	10641	1808.2
10680	1809.5								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8917	.035	9793	.055	9871	.05	9905	.055	9948	.05
10043	.055	10225	.05	10300	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9948	10043	500	509.9	500	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.62

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9000	1808	9035	1806.3	9083	1805	9143	1804.4	9224	1804.3
9276	1803.1	9354	1802.8	9437	1802.3	9491	1802.2	9563	1802.1
9653	1801.6	9716	1801.3	9737	1800.7	9753	1800.7	9783	1801.4
9834	1801.1	9879	1801.3	9924	1802.7	9966	1803.9	9981	1802.5
10000	1791.1	10025	1790.3	10036	1792.4	10046	1796	10077	1797.5
10120	1798.2	10180	1797.8	10221	1796.4	10241	1795.6	10293	1795
10309	1793.1	10317	1793.9	10323	1792.4	10343	1793.3	10361	1795.7
10375	1796.4	10398	1794.9	10417	1797.1	10448	1797.6	10494	1797.1
10535	1796.2	10581	1795.1	10609	1795.3	10632	1794.6	10650	1795.2
10677	1798.6	10708	1799.9	10742	1801.3	10788	1802.6	10840	1803.7
10901	1804.6	10961	1805.9	11026	1806.4	11080	1807.4	11145	1808.6
11200	1810								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9000	.035	9966	.05	10046	.055	10293	.05	10361	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9966	10046	515	528	530	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9000	9966	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.52

INPUT
Description:
Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9196	1800	9242	1799.2	9307	1798.6	9367	1797.5	9417	1797
9474	1796.1	9482	1794.8	9489	1795.5	9517	1795.5	9524	1796.3
9528	1795.4	9590	1795.8	9657	1796.2	9718	1796.5	9795	1796.5
9871	1795.5	9916	1794.5	9936	1788.8	9952	1791.3	9972	1790.6
9983	1788.7	10000	1787	10005	1786.4	10022	1786.2	10038	1793
10055	1793.4	10095	1793.6	10134	1792.6	10156	1788.1	10164	1788.2
10177	1789.7	10189	1788.7	10215	1791.3	10222	1790.4	10238	1791.5
10251	1790.6	10265	1791.5	10294	1791.3	10300	1790.4	10325	1791.2
10345	1791.4	10354	1790.3	10387	1791.8	10411	1791.6	10436	1791.2
10472	1790.4	10488	1787.7	10502	1791	10518	1790.8	10539	1787.9
10559	1786.8	10582	1795.2	10617	1796.4	10679	1797	10746	1797.5
10814	1797.8	10893	1797.8	10903	1796.5	10910	1797.5	11010	1797.7
11097	1797.3	11187	1797.8	11237	1798.4				

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9196	.035	9916	.05	9972	.05	10038	.07	10134	.055
10387	.07	10518	.05	10582	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10038	700	606.3	485	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9196	9795	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.41

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9475	1802.7	9548	1794.3	9613	1789.7	9658	1787.9	9675	1786.2
9681	1787.1	9715	1788.2	9764	1788.1	9796	1787.7	9830	1788.3
9859	1790.3	9880	1791	9908	1790.6	9928	1789.4	9948	1786.8
9965	1787.6	9979	1783.9	10000	1784	10039	1784.6	10052	1785
10072	1788.6	10110	1788.5	10139	1788.6	10171	1787.5	10183	1786.6
10193	1783.2	10209	1783.3	10225	1786.1	10246	1786.6	10263	1785.9
10284	1786.5	10328	1787.3	10353	1785.2	10365	1783.2	10374	1782.6
10383	1783.1	10403	1785.8	10415	1785.7	10425	1784	10446	1787.3
10480	1786.7	10495	1787.3	10521	1787	10545	1783.5	10561	1783.8
10587	1783	10616	1790.3	10654	1791.8	10698	1792.3	10763	1792.8
10803	1793.2	10811	1792.6	10823	1793.2	10878	1793.3	10925	1793.4
10979	1793.3	11038	1793.4	11100	1793.5	11160	1793	11213	1793.2
11254	1793.8	11307	1794	11380	1794.5	11443	1795.1	11509	1795.9
11572	1796.6	11647	1798.4	11735	1800.1				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9475	.045	9965	.05	10072	.055	10183	.05	10225	.07
10521	.05	10616	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10072	600	769.4	790	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.26

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9258	1798	9307	1793.5	9361	1787.2	9382	1785.3	9425	1783
9434	1781.7	9446	1783.4	9458	1783.2	9466	1780.8	9478	1781
9490	1783.2	9541	1784.1	9573	1782.4	9594	1782.3	9602	1783.1
9634	1782.2	9645	1782.9	9675	1782.2	9708	1781.9	9715	1779.9
9723	1780.1	9740	1779.1	9759	1780.5	9812	1780	9819	1780.5
9849	1780.3	9900	1779.9	9923	1777.9	9934	1779.6	9955	1779.5
9981	1778.2	10000	1775.4	10018	1773	10024	1780.7	10035	1782
10061	1782.7	10070	1781.9	10085	1783.4	10129	1784.6	10176	1785.5
10243	1785.6	10331	1785.1	10394	1785.2	10452	1784.9	10511	1784.7
10595	1784.7	10657	1784.5	10707	1784.8	10777	1785.4	10836	1786
10871	1785.9	10904	1785.3	10948	1785.7	10995	1786.9	11037	1788.1
11072	1789	11162	1789.7	11215	1790.1				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9258	.055	9425	.07	9541	.045	9759	.07	9981	.05
10024	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981	10024	500	416.4	300	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10110	11215	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.18

INPUT
Description: From Cross section 19.18 to Cross section 20.62, the floodplain and the floodway boundaries are made coincident on the right overbank only. As per discussion with the FEMA technical evaluator, this is done to include, the low flow channel on the right overbank of the Skunk Creek Wash, within the floodway boundary (March 17, 1998)
Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9114	1791.3	9152	1788	9213	1782.9	9246	1780	9281	1778.8
9312	1778.2	9367	1777.6	9382	1776.3	9399	1775.6	9415	1773.5
9430	1778.7	9442	1776.1	9452	1776.5	9465	1778.7	9479	1778.8
9493	1774.7	9514	1775.1	9534	1777	9568	1777.6	9625	1778
9638	1776.9	9649	1777	9672	1779	9722	1779.1	9764	1779
9774	1778.2	9813	1778.8	9834	1778.5	9854	1779.4	9874	1779.4
9906	1777.1	9918	1777	9926	1774.7	9943	1775.9	9980	1773.9
10000	1771.2	10006	1770	10025	1770.1	10040	1775.5	10055	1775.8
10080	1781.1	10135	1781.4	10202	1782.1	10254	1782.2	10305	1781.8
10344	1781.8	10403	1781.6	10410	1781.1	10438	1781.3	10534	1781.4
10600	1781.9	10659	1783	10688	1783.1	10727	1783.2	10758	1783.6
10796	1784.1	10857	1784.4	10925	1785.3	10969	1786	11042	1787.5
11098	1788.4	11158	1788.4	11224	1788.6				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9114	.045	9367	.05	9430	.055	9479	.05	9534	.055
9943	.05	10080	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9943	10080	460	598.7	720	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 19.07

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9213	1782.6	9244	1779.1	9266	1776.5	9296	1775.1	9326	1775.1
9352	1775	9406	1775	9426	1774.8	9467	1773.3	9515	1772
9537	1770.3	9556	1769.6	9569	1768.1	9586	1770.4	9614	1771.6
9641	1772	9656	1773.6	9691	1773.2	9711	1772	9724	1769.5
9748	1771.8	9783	1772.9	9806	1772.1	9842	1772.2	9876	1772.3
9909	1772.6	9928	1771.9	9952	1770.5	9969	1771.6	9985	1768
10000	1764.8	10007	1764.8	10022	1766.5	10047	1767	10068	1773.1
10092	1773.7	10141	1773.3	10157	1772.6	10164	1773.2	10198	1773.6
10246	1773.9	10274	1775.1	10315	1775.3	10361	1775	10402	1774.5
10441	1774	10485	1773.4	10509	1773.6	10558	1773.5	10573	1773.8
10632	1774.1	10679	1774.4	10711	1775.2	10731	1775.1	10750	1775.4
10774	1775.7	10827	1775.7	10882	1776	10923	1777.1	10971	1777.8
11014	1778.3	11069	1779.1	11099	1779.6	11110	1779.4	11128	1780
11163	1780.4	11196	1781.1						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9213	.07	9296	.055	9515	.05	9614	.055	9969	.05
10068	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969	10068	680	601	500	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.96

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9326	1779.1	9377	1778.7	9418	1776	9427	1774.9	9442	1773.9
9458	1769	9482	1767.7	9489	1766	9496	1767.1	9514	1767.3
9536	1767	9545	1768	9570	1768.8	9607	1768.6	9640	1768.1
9649	1767.9	9687	1767.8	9714	1767.3	9726	1767.7	9764	1767.9
9796	1767.6	9809	1768.2	9837	1768.3	9862	1768.6	9894	1768.2
9924	1768	9931	1762.2	9938	1762.6	9959	1762.6	10000	1762.9
10007	1763.3	10021	1766.3	10035	1767.2	10043	1767.2	10055	1766
10069	1766.9	10100	1765.7	10107	1766.7	10125	1766.3	10137	1764.5
10159	1769.4	10193	1771	10235	1770.9	10281	1770.5	10317	1769
10347	1768.7	10358	1767.5	10370	1768.8	10401	1768.8	10408	1767.4
10414	1768.5	10436	1769	10455	1769.7	10515	1770.2	10574	1770.5
10644	1770.6	10686	1770.7	10731	1770.9	10781	1771	10818	1771.3
10877	1771.2	10930	1772.4	10975	1773.1	11027	1773.1	11087	1773.4
11135	1773.8	11195	1773.9	11217	1774.3	11277	1774.5	11298	1774.6

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9326	.055	9924	.05	10021	.07	10159	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9924	10021	525	631.7	600	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.84

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9450	1770.8	9475	1764.5	9503	1756.9	9512	1757.6	9522	1758.4
9531	1758.5	9538	1757.4	9557	1759.8	9576	1759.9	9586	1758.7
9597	1759.6	9604	1759.6	9612	1758.6	9620	1760	9649	1760.6
9679	1760.6	9702	1761	9721	1759.8	9732	1760.5	9768	1760.6
9784	1759.8	9797	1759.8	9818	1761.3	9848	1763.1	9888	1763.4
9915	1763.2	9942	1759.9	9987	1758	10000	1755.9	10008	1755.7
10036	1762.6	10051	1763.3	10101	1762.5	10107	1760.8	10115	1762.3

10145	1764.2	10182	1765.5	10209	1766	10231	1765	10258	1765
10308	1765.5	10357	1764.9	10413	1765.4	10417	1765.4		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9450	.055	9915	.05	10036	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9915	10036	500	497.1	325	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10165	10417	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.74

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9245	1770	9249	1770.1	9269	1763.2	9291	1763.1	9321	1762.2
9332	1760.3	9362	1758	9377	1757.6	9388	1752	9404	1754.6
9417	1753.8	9437	1750.4	9454	1750.7	9479	1754.9	9493	1756.6
9528	1756.7	9552	1756.7	9583	1757.1	9616	1757.8	9656	1758.2
9692	1758.9	9729	1760	9750	1759.4	9767	1759.8	9791	1758.1
9814	1758.5	9851	1759.2	9883	1759	9908	1758.5	9924	1757
9938	1757.7	9975	1757.7	9986	1755.1	10000	1755	10018	1755.2
10042	1755.3	10056	1757.7	10111	1758.5	10142	1758.7	10163	1759.6
10198	1760.5	10244	1760.9	10281	1760.1	10318	1759.2	10336	1759.3
10361	1759.6	10381	1759.5	10434	1759.2	10471	1761.4	10502	1763.1
10533	1763.6	10581	1763.5	10628	1763.1	10660	1763.7	10706	1763.7
10752	1763.6	10796	1763.6	10855	1763.9	10889	1763.8	10896	1761.9
10910	1763.9	10932	1764	10947	1766.7	10962	1766	10991	1764
11003	1762.8	11018	1766.7	11036	1768.5				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9245	.055	9377	.05	9479	.055	9975	.05	10056	.055
10502	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975	10056	750	917.8	650	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10244	11036	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.57

INPUT
Description:
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9578	1785.6	9624	1759.3	9644	1751.3	9663	1748.8	9671	1748.5
9703	1746	9714	1743.7	9735	1743.5	9747	1746.6	9772	1749.2
9819	1750.4	9829	1750.1	9832	1750.3	9879	1751.1	9926	1752.5
9947	1752.5	9969	1745.1	10000	1744.4	10001	1744.4	10006	1745.5
10014	1745.9	10041	1751.5	10062	1749.2	10076	1751.5	10102	1751.5
10116	1750.9	10146	1751.2	10170	1752.4	10224	1752.3	10247	1751.4
10263	1752.2	10302	1753.1	10332	1753.6	10360	1753.3	10386	1753.7
10400	1751	10416	1753.4	10452	1752.6	10474	1752.5	10490	1751.8
10507	1752.7	10528	1752.8	10560	1754.2	10585	1755.2	10600	1756.5
10645	1757	10678	1757.7	10717	1757.9	10766	1758.1	10820	1758.8
10862	1759.2	10915	1760.1	10941	1760.2	10950	1760.5	10964	1760.8
10993	1760.4	11007	1760.2	11021	1761.1	11048	1761.8	11082	1765.7
11111	1770.4	11148	1776.8						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9578	.07	9703	.04	9747	.07	9947	.04	10041	.07
10600	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9947	10041	275	389	675	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.49

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9699	1762.2	9727	1754.7	9755	1746.3	9766	1747.1	9792	1747.4
9832	1747.4	9853	1745.9	9867	1742.7	9895	1743.3	9909	1744.9
9930	1744.8	9965	1744.6	9985	1741.7	10000	1741.9	10015	1745.2
10037	1746.9	10052	1746.9	10060	1746.2	10072	1745.8	10082	1747.3
10111	1747.8	10142	1748.7	10167	1748.9	10202	1749	10243	1748.9
10282	1748.7	10327	1748.2	10379	1748	10394	1747.8	10406	1746.5
10417	1747.4	10434	1743.7	10445	1744	10464	1746.9	10481	1742.3
10497	1746.3	10522	1748.9	10562	1750.3	10602	1751.2	10637	1751.4
10676	1751.9	10727	1752.2	10780	1752.5	10817	1752.7	10834	1753.1
10873	1753.7	10897	1754.2	10951	1754.5	10998	1754.9	11036	1755.3
11087	1755.7	11131	1757.1	11137	1757.6	11163	1757.6	11194	1759.2
11230	1759	11254	1759.4						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9699	.07	9853	.04	9909	.07	9965	.04	10037	.07
10202	.055	10417	.04	10497	.07	10562	.045		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10037	1162.5	1099.7	850	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.29

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9535	1750.9	9583	1741.6	9597	1737.2	9608	1739.5	9634	1739.1
9647	1737.5	9660	1732.6	9678	1737.5	9712	1739.3	9758	1740.2
9788	1740.1	9800	1739.1	9812	1739.7	9832	1738.7	9852	1735.8
9872	1737.4	9914	1738.3	9932	1737	9949	1735.5	9968	1735
9976	1734	9984	1734.6	10000	1734.3	10009	1735.5	10020	1735.3
10029	1733.5	10049	1739.9	10076	1740.5	10115	1740	10130	1736.1
10144	1734.7	10160	1736.9	10185	1738.4	10213	1742	10244	1742.5
10266	1742.8	10270	1742.2	10286	1742.8	10318	1742.8	10349	1742.7
10388	1742.8	10395	1742.5	10429	1742.5	10468	1742.2	10472	1742.6
10553	1742.5	10565	1741.1	10574	1742.8	10607	1743.2	10634	1743
10693	1743.3	10746	1744.6	10795	1744.9	10858	1745.6	10899	1746
10970	1747.1	11035	1747.8						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9535	.055	9634	.04	9678	.055	9914	.04	10049	.07
10115	.04	10185	.055	10244	.045				

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9914	10049	200	300	310	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.23

INPUT
Description: NEW CROSS SECTION: GR CARD DATA FOR 18.20 DEVELOPED FROM TOPOGRAPHIC MAPS. CROSS SECTION ADDED TO MODEL FLOW OVER CLOUD ROAD. CAPACITY OF 3-60" CMPS IGNORED
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9510	1750	9550	1740	9640	1736	9650	1734	9660	1736
9690	1736	9700	1735	9710	1736	9780	1738	9800	1738
9930	1736	9950	1734	9965	1732	10000	1730	10010	1738.8
10240	1740	10480	1740	10730	1740	10870	1742		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9510	.055	9930	.04	10010	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10010	370	370	400	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.16

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9687	1755.1	9711	1739.9	9724	1736.1	9754	1734	9768	1730.7
9775	1730.5	9788	1733.9	9810	1735.2	9836	1735.2	9860	1734.7
9877	1733.3	9892	1732.7	9911	1732.9	9951	1732.5	9981	1732.5

9996	1729.6	10000	1729.6	10020	1729.6	10050	1728.8	10075	1739
10078	1737.8	10095	1737.2	10124	1735.8	10139	1734.7	10155	1734
10199	1733.5	10330	1730	10380	1730	10430	1734	10650	1736
10750	1736.9	10930	1738	11040	1738	11130	1740		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9687	.07	9754	.04	9788	.07	9981	.04	10075	.055
10330	.04	10430	.055						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981	10075	345	377.6	360	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 18.09

INPUT
Description: *END OF CARTER-BURGESS ONE-FOOT CONTOUR MAPPING. MONTGOMERY-WATSON TWO-FOOT INTERVAL CONTOUR MAPPING RESUMES. ENCROACHMENT INSERTED AT SECTION 18.09 TO CONTAIN FLOODPLAIN*

Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9828	1748.2	9855	1733.9	9862	1732.7	9872	1729.9	9880	1729.7
9885	1731.3	9900	1730.9	9919	1727.3	9936	1730.5	9951	1727.5
9971	1728.2	9991	1728.2	10000	1727.4	10006	1727.8	10065	1728.8
10076	1729.6	10090	1731.3	10119	1731.8	10178	1731.7	10226	1730.9
10264	1729.9	10280	1726.2	10290	1725.9	10310	1733	10333	1732.9
10380	1731.3	10407	1730.4	10447	1729.1	10497	1728.6	10522	1729.1
10540	1723.5	10556	1723.7	10573	1728.6	10597	1731.4	10633	1733.6
10663	1734.3	10717	1734.2	10772	1733.5	10799	1732.5	10847	1732.3
10899	1732.4	10935	1732.3	10974	1733.1	11013	1733	11076	1732.8
11132	1733.3	11210	1733.7	11263	1734	11349	1734.7	11423	1735.8
11479	1736.6	11538	1737.7	11570	1738	11595	1738.6	11632	1739.1
11661	1739.7								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9828	.07	9936	.04	10090	.07	10310	.055	10522	.04
10573	.045								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9936	10090	712.5	705.8	375	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 17.95

INPUT
Description: CLOUD ROAD CROSSES THROUGH THIS CROSS-SECTION. 3-60" CMPS: CAPACITY IGNORED REMOVED LEFT ET 9845

Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9755.02	1740.51	9818.34	1730.21	9852.1	1726.85	9867	1726.36	9873.24	1726.15
9879.76	1724.21	9941.9	1724.21	10021.83	1722.21	10042.15	1722.21	10047	1723.51
10058.87	1726.71	10131.78	1726.21	10166.46	1727.01	10219.74	1727.07	10281.54	1728.21
10340.58	1728.21	10351.82	1726.21	10391.92	1724.21	10410.16	1724.43	10440.86	1728.21
10470.78	1728.21	10517.06	1726.71	10529.03	1726.21	10545.77	1723.06	10569.84	1728.36
10647.71	1730.21	10713.11	1730.31	10858.38	1730.21	10888.71	1729.96	11036.4	1730.21
11046.39	1731.31	11060.67	1734.21	11064.15	1732.11	11068.55	1734.95	11081.31	1752.83

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9755.02	.055	9873.24	.041	10058.87	.071	10340.58	.041	10440.86	.055
10529.03	.041	10569.84	.055						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9873.24	10058.87	500	563.8	520	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 17.84

INPUT
Description: Change elevation of 10533.75 and 10579.92 to 1718 to match topo, Modified geometry to include changes by Tramonto development between station 1072 and 10867.86

REMOVED LEFT ET 9770

4-8-99: ADDED RIGHT FP ET AT 10706

Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9670.69	1730.91	9713.32	1728.97	9753.84	1724.21	9772.54	1720.21	9790.38	1720.65

```
  9800.9 1722.31 9834.61 1724.21 9909.89 1724.21    9925 1723.21 9940.13 1722.21
 9955.16 1719.61 10029.4 1718.2110048.88 1718.2110133.86 1718.21 10164.5 1720.21
   10219 1720.3110230.85 1722.2110374.53 1722.21 10440.3 1723.3410487.83 1722.59
10533.75    171810579.92    171810616.26 1722.2110663.58 1722.2110716.91 1724.21
   10720  1725.510867.86 1725.5110903.95 1725.5711049.41 1726.58

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9670.69    .055 9753.84     .04 9834.61    .055 9940.13     .04 10164.5    .055
10487.83     .0410616.26    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9940.13 10164.5               310   341.7     310             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.78

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10585.51 and 10800

REMOVED LEFT ET
             9615
4-8-99: RIGHT EP ET CHANGED FROM 10607 TO 10610
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9599.65 1732.21 9627.65 1721.39  9684.5 1716.21 9717.21 1718.21 9765.64 1718.48
  9841.5 1720.21    9931 1720.21 9955.49 1720.21 9973.26 1714.21 9988.08 1714.21
   10026 1713.3810070.76 1716.2110151.26 1716.4410235.37 1716.0110282.17 1718.21
10309.14 1720.2110385.19 1720.21 10409.4 1716.2110447.79 1716.2110488.02 1720.21
10527.03 1720.2110585.51 1722.21 10585.6  1723.3   10800  1723.3 10884.8 1723.81
10986.97 1724.2111024.28  1724.9

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9599.65    .045 9955.49     .0410070.76    .05510385.19     .0410488.02    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9955.4910070.76               490   661.3     720             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.65

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10358.37 and 10903.11

4-8-99: ADDED RIGHT FP ET
             10314



Station Elevation Data    num=      24
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9382.74 1726.21 9413.87 1716.21 9475.55 1714.21  9482.6 1712.21 9493.88 1712.71
 9550.02 1713.98 9594.24 1713.48  9630.3 1714.21 9665.77 1713.31 9812.95 1714.21
 9899.02  1712.1 9912.78 1708.21    9924 1707.25 9959.39 1704.21 9984.01 1704.21
 9992.68 1708.3110000.49 1710.21   10021 1711.2810077.36 1714.2110133.98 1715.41
10205.53 1716.11   10314 1716.11 10314.1    171910903.11    1719

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9382.74    .045 9899.02     .0410000.49    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9899.0210000.49               370   460.8     500             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.57

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10401.97 and 11289.4, raised elevation to
             1715

4-8-99: ADDED RIGHT FP ET AT 10302, ADDED LEFT FP ET AT
             9440
Station Elevation Data    num=      23
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9303.56 1717.16 9335.15 1715.35 9428.56  1714.3 9471.01 1714.57  9508.1 1710.21
 9548.25 1711.34 9576.05 1712.21 9686.77 1712.21 9871.91 1708.21  9897.5 1706.21
```

```
    9923 1706.21 9930.23 1702.21 9971.46  1703.610007.46 1706.3810020.08 1708.91
   10040 1710.2110114.97 1708.53 10161.6  1711.510169.27 1712.21   10302 1712.21
10401.97    171511225.31    1715 11289.4 1715.39

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9303.56    .045 9576.05    .055 9871.91     .04   10040    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9871.91   10040              365   474.4     500             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.48

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10455.69 and 11616.42, raised elevations to
             1710.5.

4-8-99: RT FP ET CHANGED FROM 11597 TO 10383, LEFT FP
             ET CHANGED FROM 9404 TO 9478
APPROX. 3,600CFS DIVERTS INTO RIGHT
             OVERBANK FROM THIS CROSS-SECTION DOWNSTREAM. REFER TO SPLIT FLOW
             MODEL FOR RIGHT OVERBANK ANALYSIS. FLOODWAY ANALYSIS USES ENTIRE
             FLOW AND IS STRICTLY FOR MAIN CHANNEL.
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9372.88 1716.21 9458.51 1711.05 9485.84 1708.21 9544.18 1708.21  9597.5 1707.46
 9679.17 1706.81 9739.84 1706.21 9877.04 1706.21    9893 1702.89 9936.69 1702.21
 10037.7 1702.2110047.62 1704.6110063.16 1706.21   10073 1706.2110247.95 1706.21
10301.08 1706.71   10383 1706.7110455.69  1710.511541.69  1710.511616.42 1710.65
11696.98 1712.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9372.88    .045 9877.04     .04   10073    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9877.04   10073              429   429.4     429             .1       .3

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.39

INPUT
Description: Modified geometry to include changes by Tramonto development
             between station 10621.24 and 11645.05 by raising the elevation to
             1706.11.  This elevation is from the cross section profiles,
             rather than the grading drawing.  The grading drawing shows the
             elevatio

4-8-99: RIGHT FP ET CHANGED FROM 11369 TO 10508



Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9116.73 1711.31 9167.22 1710.21    9190 1710.21 9326.23 1707.99 9403.55 1706.21
 9430.65 1706.21  9471.2 1705.33 9555.58 1704.95  9664.9  1705.2 9710.74 1705.61
 9779.45 1704.11 9887.09 1702.21    9893 1698.05 9898.69 1698.21 9920.72 1698.21
 9928.58 1700.21 9951.05 1696.21  9973.4 1696.21 9991.02 1698.2110057.52 1700.21
10099.04 1700.2110111.87 1698.2110131.69 1698.2110144.53 1702.2110170.78 1702.21
   10179 1701.5110195.61 1700.21 10231.6 1702.2110316.97 1702.3710463.14 1702.98
   10508 1702.9810621.24 1706.1111622.56 1706.1111645.05 1706.1111673.91 1705.15
11732.23  1705.1 11786.9 1705.6111887.47 1705.1111960.19 1705.4112035.23 1704.99
12058.85 1704.39

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9116.73    .055 9326.23    .045 9887.09     .0410144.53    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9887.0910144.53              465     500     530             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9116.73    9731           1136912058.85

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 17.3

INPUT
Description: Modified geometry to include changes by Tramonto development. To
```

the right on station 10584.84 raised elevations to
1702.4

4-8-99: RIGHT FP ET CHANGED FROM 11686 TO 10590, LEFT FP
ET CHANGED FROM 9451 TO 9568

```
Station Elevation Data     num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9322.93 1704.81 9419.22 1704.21 9448.82 1704.11 9534.19 1701.51 9566.96 1700.21
 9598.26 1700.21 9656.94 1698.21 9720.94 1698.21 9761.09 1697.56 9881.54 1698.21
 9933.98 1697.23 9946.95 1696.21 9962.55 1692.21    9970 1692.2110031.21 1692.21
10063.76 1694.2110074.95 1696.2110119.18 1696.21   10156 1697.4110169.28 1697.91
10277.48 1698.2110295.67 1696.2110308.57 1696.3110327.84 1698.2110437.49 1698.21
10523.21 1700.2110569.87 1700.5110584.84  1702.412183.66  1702.4

Manning's n Values         num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9322.93    .045 9933.98     .0410074.95     .0710437.49    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9933.9810074.95              630   644.4     580             .1       .3
```

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 17.18

INPUT
Description: Modified geometry to include changes by Tramonto development between station 10749.27 elevatio from 1694.71 to 1696.01, 11408.6 and 11794.13, and 12285.64 and 12352.81, added vertical wall on RHS

4-8-99: RIGHT FW ET CHANGED FROM 10672 TO 10668, RIGHT FP
ET CHANGED FROM 10839 TO 10710, LEFT FP ET CHANGED FROM 9590 TO
9746

```
Station Elevation Data     num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9493.99 1700.01 9664.32 1697.27 9715.97 1695.77 9779.51 1694.21 9808.56 1692.26
 9845.85 1693.41 9935.01  1692.7 9963.19 1692.21    9978 1688.95 9990.45 1686.21
10011.48 1686.21 10053.3 1690.2110123.73 1690.2110145.22  1687.510162.51 1686.21
10206.89 1688.2110244.97 1688.21   10254 1689.5610284.66 1694.2110342.46 1696.21
10386.32 1695.6110446.24 1695.3110516.41 1694.21 10575.4 1693.9810655.64 1693.27
10749.27 1696.0110806.19 1696.0110933.46 1695.9310997.29 1696.2111083.48 1696.11
11089.79 1696.3111108.75 1696.7111237.26 1695.8411322.92 1695.01 11408.6 1693.91
11794.13 1694.1111930.31 1694.7812034.58 1695.7112115.02 1696.1112238.17 1695.91
12285.64 1696.1112352.81 1696.6112381.62 1696.1112395.49 1696.8112435.45 1696.29
 12500.3 1696.9112576.83 1698.21 12621.6 1698.41 12621.7    1700

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9493.99    .055 9963.19     .04 10053.3     .0710123.73     .0410284.66    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9963.19 10053.3              610   600.8     510             .1       .3
Blocked Obstructions      num=       1
   Sta L   Sta R    Elev
   11108 12621.7
```

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 17.06

INPUT
Description: Modified geometry to include changes by Tramonto development between station 10572.12 and 10928.08, 11414.59 and 11790.8, 12092.7 and 12200.38

4-8-99: RIGHT FW ET CHANGED FROM 10513 TO
10490, RIGHT FP ET CHANGED FROM 10899 TO 10513, LEFT FP ET CHANGED
FROM 9451 TO 9533

```
Station Elevation Data     num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9443.14 1694.16 9475.62 1690.21 9497.53 1690.21 9557.26 1688.21 9581.93 1684.21
 9621.41 1682.52 9643.26 1686.21 9763.42 1686.21 9806.79 1684.21 9929.44 1684.21
    9947 1682.89 9963.19 1681.71 9982.51 1680.21 9988.59 1682.21 10002.5 1682.21
10029.28 1678.2110052.12 1678.2110064.34 1684.6910069.46 1686.21   10090 1688.11
10122.23 1689.2110215.28 1689.5110336.61 1688.2110396.62 1688.3110487.99 1688.01
10511.72 1688.2110522.16 1687.6110572.12 1691.1910928.08 1691.1911030.08 1690.75
11081.08 1691.1111116.85 1691.11 11217.9 1690.6111307.94 1690.6111414.59 1690.26
 11790.8 1690.0511846.52 1690.2211921.73 1691.8111976.53 1691.8112032.71 1690.41
12064.67 1690.66 12092.7 1689.4912200.38 1689.6512313.66  1691.612385.08 1691.71
12479.24 1691.2112605.82 1692.31

Manning's n Values         num=       5
```

```
     Sta    n Val     Sta    n Val     Sta    n Val     Sta    n Val     Sta    n Val
 9443.14      .07 9557.26      .04 9643.26      .07 9929.44      .04   10090     .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9929.44   10090              630     566     440             .1        .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
 11976.512605.82

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 16.96

INPUT
Description: GR DATA FOR SECTIONS 16.96 TO 17.95 IS BASED UPON ONE-FOOT MAPPING
             FROM CARTER-BURGESS DIGITAL TERRAIN MODEL. DATE:2-24-99
GR
             ELEVATIONS FOR SEC 16.96 TO 17.95 ARE BASED UPON CITY OF PHOENIX
             DATUM. MONTGOMERY -WATSON GR DATA ARE BASED UPON NGVD 1927 DATUM.
             THE GR DATA FOR SEC 16.96-17.95 ARE RAISED BY .21FT ON THE X1 CARD
             FOR CONVERSION TO THE NGVD 1927 DATUM
LEFT ET CHANGED FROM
             9889,9506 TO 9914 FOR BOTH FP AND FW
4-8-99: RT FW ET CHANGED
             FROM 10450 TO 10389, RT FP ET CHANGED FROM 11080 TO 10408
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9539.39 1684.31 9594.54 1680.21 9637.67 1682.21 9655.49 1680.21 9757.68 1680.21
 9807.96 1678.71 9870.41 1678.21 9902.01 1678.21 9929.31 1684.21    9932 1684.21
 9947.83 1684.21    9966 1678.21 9988.98 1677.9210007.22 1676.2110075.82 1676.21
10134.07 1679.6110257.04 1680.11 10270.3 1682.6510282.57 1683.1210307.33  1684.5
   10342 1684.9110383.59 1685.4110435.94 1685.8110503.13  1684.810601.12 1684.71
10660.64 1685.21 10704.2 1685.3510830.52 1686.06 10864.9 1686.8110909.44 1688.71
10920.87 1688.9110970.87 1688.67 11018.3 1688.4211061.63 1688.6111137.84 1688.11
11246.93 1688.1111567.48 1687.4411645.69 1686.9811668.64 1686.3111730.35 1685.21
11795.39 1682.91 11904.8 1683.3211972.35 1683.8112221.54 1684.9112302.92 1685.51
12482.15 1686.4112553.87 1686.2212583.61 1686.4412619.86 1686.01

Manning's n Values        num=       4
     Sta    n Val     Sta    n Val     Sta    n Val     Sta    n Val
 9539.39      .07 9947.83      .0410307.33     .04510435.94     .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9947.8310307.33              410   456.2     600             .1        .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   1108012619.86

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 16.87

INPUT
Description: UP/S FACE OF CAREFREE HWY  APPROX 3,600CFS DIVERTS OUT OF THE
             SKUNK CRK W. APPROX. 1,500FT WEST OF THE MAIN HWY BRDG REFER TO
             SPILT FLOW MODEL FROM X-SEC 16.87 TO X-SEC 17.48 X-SEC 17.48 IS
             THE PNT OF FLOW MATCHING BT BASED UPON "AS-BUILT" PLANS ADJUSTED
             TO ACCOUNT FOR MAPPED CONDITIONS ET CHANGED FROM 9806,10117 D/STRM
             REACH LENGTHS FOR X-SEC 16.87 INCR TO 146FT TO REFLECT TO ADD. OF
             THE S. HALF OF THE CAREFREE HWY BRDG.
Channel geometry is
             adjusted by 58ft to center the bridge opening at station 100+00
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9328.22    1687  9385.7  1685.7 9402.02  1685.5 9468.73  1684.7 9536.14  1683.5
 9597.17  1683.4 9654.65  1683.2 9701.49  1683.3 9755.42  1684.5 9832.07  1685.6
 9855.48  1685.7 9876.77 1671.37 9890.91 1673.51 9905.05 1673.94  9919.2 1673.14
 9933.34 1673.08 9947.48 1672.74 9961.62 1672.71 9975.76 1672.58 9989.91    1672
10004.05 1671.4810018.19  1671.410032.33 1671.1610046.48 1671.0810060.62 1670.99
10074.76 1671.22 10088.9 1670.6710103.04 1670.2510114.36 1669.9510152.83  1685.8
 10172.7  1685.610235.86  1685.210311.79  1683.110383.46  1681.710442.37  1679.9
 10503.4  1679.710553.78  1679.7 10599.2  1679.510664.49  1679.910719.84  1679.6
 10812.8  1679.910863.19  1680.110908.61  1679.710980.28  1679.211031.38  1678.8
11080.34  1678.611130.73  1678.111189.63    167811232.92  1677.711302.46  1677.8
11363.49  1678.211403.23  1678.411458.58  1678.3

Manning's n Values        num=       3
     Sta    n Val     Sta    n Val     Sta    n Val
 9328.22     .045 9855.48      .0410152.83     .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9855.4810152.83              146     146     146             .3        .5
Ineffective Flow     num=       2
```

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9328.22	9855.48	1685.7	10152.83	11458.58	1685.8

BRIDGE RIVER: RIVER-1
REACH: Reach-1 RS: 16.865

INPUT
Description: Carefree Highway Bridge

Distance from Upstream XS = 1
Deck/Roadway Width = 144
Weir Coefficient = 2.7
Bridge Deck/Roadway Skew =
Upstream Deck/Roadway Coordinates
num= 54

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9328.22	1687	1670	9365.2	1686.75	1670	9395.1	1686.19	1670
9430.6	1685.65	1670	9466.1	1685.23	1670	9501.6	1684.93	1670
9537.1	1684.75	1670	9539.9	1684.74	1670	9572.6	1684.7	1670
9608.1	1684.77	1670	9643.6	1684.96	1670	9679.1	1685.27	1670
9714.6	1685.71	1670	9825.3	1687.25	1670	9855.2	1687.64	1670
9857.9	1687.68	1670	9857.9	1687.68	1670	9860.6	1690.18	1670
9860.6	1690.2	1680.84	9893.4	1690.5	1681.16	9928.9	1690.77	1681.23
9964.4	1690.93	1681.33	9999.9	1690.98	1681.26	10002.7	1690.98	1681.27
10035.4	1690.94	1681.13	10070.9	1690.8	1680.84	10106.4	1690.55	1680.57
10141.9	1690.2	1680.12	10141.9	1690.18	1670	10142.1	1687.68	1670
10174.7	1687.25	1670	10272.6	1685.47	1670	10277	1685.39	1670
10312.5	1684.78	1670	10348	1684.21	1670	10383.5	1683.69	1670
10419	1683.21	1670	10454.5	1682.78	1670	10490	1682.4	1670
10505.5	1682.24	1670	10525.5	1682.06	1670	10561	1681.77	1670
10596.5	1681.53	1670	10632	1681.33	1670	10667.5	1681.18	1670
10703	1681.08	1670	10738.5	1681.02	1670	10827	1680.94	1670
10914.3	1680.86	1670	11001.7	1680.34	1670	11059.9	1680	1670
11147.3	1679.48	1670	11234.6	1679.42	1670	11458.58	1678.3	1670

Upstream Bridge Cross Section Data
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9328.22	1687	9385.7	1685.7	9402.02	1685.5	9468.73	1684.7	9536.14	1683.5
9597.17	1683.4	9654.65	1683.2	9701.49	1683.3	9755.42	1684.5	9832.07	1685.6
9855.48	1685.7	9876.77	1671.37	9890.91	1673.51	9905.05	1673.94	9919.2	1673.14
9933.34	1673.08	9947.48	1672.74	9961.62	1672.71	9975.76	1672.58	9989.91	1672
10004.05	1671.48	10018.19	1671.4	10032.33	1671.16	10046.48	1671.08	10060.62	1670.99
10074.76	1671.22	10088.9	1670.67	10103.04	1670.25	10114.36	1669.95	10152.83	1685.8
10172.7	1685.6	10235.86	1685.2	10311.79	1683.1	10383.46	1681.7	10442.37	1679.9
10503.4	1679.7	10553.78	1679.7	10599.2	1679.5	10664.49	1679.9	10719.84	1679.6
10812.8	1679.9	10863.19	1680.1	10908.61	1679.7	10980.28	1679.2	11031.38	1678.8
11080.34	1678.6	11130.73	1678.1	11189.63	1678	11232.92	1677.7	11302.46	1677.8
11363.49	1678.2	11403.23	1678.4	11458.58	1678.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9328.22	.045	9855.48	.04	10152.83	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
9855.48	10152.83	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9328.22	9855.48	1685.7	10152.83	11458.58	1685.8

Downstream Deck/Roadway Coordinates
num= 54

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9330.09	1687	1670	9365.2	1686.75	1670	9395.1	1686.19	1670
9430.6	1685.65	1670	9466.1	1685.23	1670	9501.6	1684.93	1670
9537.1	1684.75	1670	9539.9	1684.74	1670	9572.6	1684.7	1670
9608.1	1684.77	1670	9643.6	1684.96	1670	9679.1	1685.27	1670
9714.6	1685.71	1670	9825.3	1687.25	1670	9855.2	1687.64	1670
9857.9	1687.68	1670	9857.9	1687.68	1670	9860.6	1690.18	1670
9860.6	1690.2	1680.84	9893.4	1690.5	1681.16	9928.9	1690.77	1681.23
9964.4	1690.93	1681.33	9999.9	1690.98	1681.26	10002.7	1690.98	1681.27
10035.4	1690.94	1681.13	10070.9	1690.8	1680.84	10106.4	1690.55	1680.57
10141.9	1690.2	1680.12	10141.9	1690.18	1670	10142.1	1687.68	1670
10174.7	1687.25	1670	10272.6	1685.47	1670	10277	1685.39	1670
10312.5	1684.78	1670	10348	1684.21	1670	10383.5	1683.69	1670
10419	1683.21	1670	10454.5	1682.78	1670	10490	1682.4	1670

```
 10505.5 1682.24    1670 10525.5 1682.06    1670   10561 1681.77    1670
 10596.5 1681.53    1670   10632 1681.33    1670 10667.5 1681.18    1670
   10703 1681.08    1670 10738.5 1681.02    1670   10827 1680.94    1670
 10914.3 1680.86    1670 11001.7 1680.34    1670 11059.9    1680    1670
 11147.3 1679.48    1670 11234.6 1679.42    167011444.85  1678.3    1670

Downstream Bridge Cross Section Data
Station Elevation Data    num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9330.09  1686.9 9398.22  1685.4 9459.25  1684.6  9507.5  1684.1 9571.37  1683.3
 9633.11  1683.3 9680.66  1683.5 9716.85  1684.2 9767.23  1684.9 9809.81  1685.7
 9850.97    1686 9877.23 1671.45 9897.37 1671.29 9905.51 1671.92 9919.66 1671.98
  9933.8 1672.52 9947.94 1672.76 9962.08 1672.81 9976.22 1672.58 9990.37 1672.08
10004.51 1671.4410018.65  1671.310032.79 1671.2810046.94 1670.5410061.08 1671.17
10075.22 1670.7610089.36 1670.59 10103.5 1670.6110116.59 1670.8110118.51  1671.2
10149.03  1685.910202.96  1685.310254.76  1684.310312.25  1683.210371.15  1681.8
10386.76  1681.410439.98  1679.710491.79  1679.5 10544.3  1679.410589.01  1679.4
10643.65  1679.510696.88  1679.710742.29  1679.910792.68  1680.310838.81  1679.8
 10882.8    1680 10948.8  1679.711005.57  1679.411057.38  1679.311106.34    1679
 11161.7  1678.711215.63  1678.411267.43  1678.311325.63  1678.111371.75  1678.4
11444.85  1678.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9330.09    .045 9850.97     .0410149.03    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9850.9710149.03             .3        .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9330.09 9850.97    168610149.0311444.85  1685.9

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         = 1688.08
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Piers =  3

Pier Data
Pier Station     Upstream= 9928.97    Downstream= 9928.97
Upstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78
Downstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78

Pier Data
Pier Station     Upstream=   10000    Downstream=   10000
Upstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78
Downstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78

Pier Data
Pier Station     Upstream=10071.03    Downstream=10071.03
Upstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78
Downstream     num=       2
    Width   Elev    Width   Elev
   3.281    1670   3.281 1685.78

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
       Momentum                Cd   =    1.33
       Yarnell                 KVal =    1.05
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Pressure and Weir flow
           Submerged Inlet Cd          =
           Submerged Inlet + Outlet Cd =       .8
```

```
          Max Low Cord                =

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 16.86

INPUT
Description: 4-8-99: QT CHANGED TO 27300 FOR BOTH FP AND FW DUE TO THE FULL
             ENCROACHMENT THROUGH THE TRAMONTO DEVELOPMENT

DOWNSTREAM SIDE
             OF CAREFREE HIGHWAY BRIDGE OPENING ADJUSTED BY FACTOR OF 0.83 TO
             ACCOUNT FOR 34 DEG. SKEW ET CHANGED FROM 9788,10101

DOWNSTEAM
             REACH LENGTHS FOR CROSS-SECTION 16.86 REDUCED BY 101.8FT TO
             ACCOUNT FOR NEW CAREFREE HIGHWAY BRIDGE CONSTRUCTION.

ELREA ON
             X3 CARD CHANGED FROM 1679.75 TO 1680.

Channel geometry is
             adjusted by 55.48 feet to center bridge opening at station 100+00.
Station Elevation Data    num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9330.09  1686.9 9398.22  1685.4 9459.25  1684.6  9507.5  1684.1 9571.37  1683.3
 9633.11  1683.3 9680.66  1683.5 9716.85  1684.2 9767.23  1684.9 9809.81  1685.7
 9850.97    1686 9877.23 1671.45 9897.37 1671.29 9905.51 1671.92 9919.66 1671.98
  9933.8 1672.52 9947.94 1672.76 9962.08 1672.81 9976.22 1672.58 9990.37 1672.08
10004.51 1671.4410018.65  1671.310032.79 1671.2810046.94 1670.5410061.08 1671.17
10075.22 1670.7610089.36 1670.59 10103.5 1670.6110116.59 1670.8110118.51  1671.2
10149.03  1685.910202.96  1685.310254.76  1684.310312.25  1683.210371.15  1681.8
10386.76  1681.410439.98  1679.710491.79  1679.5 10544.3  1679.410589.01  1679.4
10643.65  1679.510696.88  1679.710742.29  1679.910792.68  1680.310838.81  1679.8
 10882.8    1680 10948.8  1679.711005.57  1679.411057.38  1679.311106.34    1679
 11161.7  1678.711215.63  1678.411267.43  1678.311325.63  1678.111371.75  1678.4
11444.85  1678.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9330.09    .045 9850.97     .0410149.03    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9850.9710149.03            888.2   879.1   778.2              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9330.09 9850.97    168610149.0311444.85  1685.9

CROSS SECTION          RIVER: RIVER-1
REACH: Reach-1            RS: 16.68

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9880  1682.1    9916  1676.2    9928  1673.5    9950  1662.9    9956  1662.6
    9964  1666.6    9989  1666.2   10000  1662.3   10009  1662.8   10020  1662.7
   10025  1664.5   10043  1665.2   10076  1665.3   10100  1664.9   10107  1662.9
   10120  1662.9   10135  1661.5   10142  1665.1   10161  1665.4   10168  1664.6
   10183  1664.2   10192  1664.5   10218  1663.7   10230  1662.3   10247  1661.7
   10262  1662.9   10302  1664.5   10308    1664   10353  1663.9   10390    1664
   10437  1663.6   10463  1663.5   10470  1662.9   10479  1663.5   10511  1662.7
   10530  1661.8   10540  1661.3   10553  1661.3   10569  1662.3   10590  1666.8
   10612  1675.2   10641  1674.8   10677  1675.2   10718  1675.4   10765  1675.4
   10821  1675.3   10870  1675.4   10900  1675.6   10938  1675.6   10964    1676
   11005    1676

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
    9880     .07    9989     .04   10025    .045   10100     .04   10142    .055
   10218    .045   10302    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9989   10025              940   997.5   1160              .1       .3
```

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.49

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9520	1667.1	9583	1667.6	9619	1667.4	9661	1665.7	9708	1665.1
9776	1664.9	9808	1664.1	9841	1661.9	9871	1661.5	9888	1659.1
9906	1659.2	9925	1653.7	9933	1653.9	9961	1653.8	10000	1653.3
10018	1654.5	10040	1658.6	10066	1658.9	10073	1658.1	10095	1657.8
10104	1659.1	10130	1659.5	10147	1653.7	10168	1654	10211	1653.7
10224	1655.7	10234	1655.2	10246	1655.3	10253	1656.7	10285	1657.7
10316	1658.8	10335	1659.1	10371	1658.9	10413	1657.8	10420	1656.7
10428	1657.4	10438	1657.6	10446	1656.8	10465	1657.6	10485	1659.8
10512	1662.4	10532	1663.3	10582	1664	10619	1664.5	10669	1664.7
10742	1664.8								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9520	.055	9906	.04	10040	.07	10130	.04	10224	.045
10371	.055								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9906	10040	1190	1153.6	1150	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.27

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9044	1655.1	9106	1655.3	9139	1655.6	9198	1655.9	9247	1656.1
9283	1656.3	9326	1655.9	9357	1654.9	9394	1652.7	9404	1650.9
9443	1650.4	9466	1650.5	9508	1650.7	9529	1648.7	9539	1648.6
9553	1646.7	9572	1648.2	9588	1647.6	9600	1648.6	9623	1647.5
9643	1649	9667	1650.5	9682	1650.2	9700	1650.3	9724	1649.6
9760	1650.2	9771	1648.3	9798	1647.7	9816	1646.1	9835	1647.3
9853	1647.9	9872	1649.6	9892	1649.9	9905	1648.8	9915	1648.9
9923	1648.4	9947	1648.9	9967	1643.5	9990	1642.4	10000	1639.4
10009	1639.8	10032	1640	10045	1654.9	10052	1655.9	10111	1656
10158	1656.2	10207	1656.4	10255	1656.4	10316	1656.5	10391	1656.1

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9044	.045	9508	.055	9667	.045	9872	.055	9947	.04
10045	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9947	10045	400	422.1	425	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.19

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9011	1652	9072	1652.5	9131	1652.6	9193	1652.8	9235	1652.7
9260	1651.8	9281	1649.9	9326	1647.9	9377	1645.6	9385	1644.7
9392	1645.2	9431	1646.1	9457	1646.6	9500	1646.3	9506	1645.4
9515	1646.3	9539	1646.3	9548	1645.2	9556	1645.8	9574	1645.2
9600	1643.7	9613	1641.7	9624	1640.9	9639	1641.8	9652	1641.7
9664	1642.7	9687	1642.9	9695	1642.4	9709	1642.5	9730	1644.9
9760	1646.3	9781	1646.9	9807	1647.2	9817	1646.2	9833	1645.8
9855	1646.5	9881	1646.9	9907	1644.9	9934	1644.4	9950	1643.9
9966	1638.9	9981	1639.7	10000	1637.5	10018	1637.8	10034	1637.9
10048	1639.1	10077	1652	10101	1652.8	10139	1653.2	10192	1653.3
10245	1653	10291	1652.7	10341	1652.4	10389	1652.2		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9011	.045	9600	.055	9730	.045	9950	.04	10077	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10077	540	645.6	660	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 16.07

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9258	1648.3	9327	1648.3	9384	1648.3	9446	1648.1	9494	1648
9536	1647.3	9578	1646.8	9614	1645.7	9631	1644.4	9648	1641.8
9701	1641.5	9720	1641.1	9734	1638.4	9750	1637.8	9760	1639.7
9781	1637.5	9791	1639.3	9822	1639.5	9854	1638.8	9877	1638.8
9884	1639.4	9902	1640.1	9948	1640.1	9974	1638.8	9986	1634.8
10000	1634.3	10037	1634.7	10044	1635.4	10071	1636.2	10089	1636.3
10105	1635.5	10113	1635.5	10130	1643.3	10166	1644.3	10196	1645.7
10222	1646.5	10267	1646.6	10315	1646.7	10350	1646.2	10392	1645.8
10433	1645.6	10494	1645.5						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9258	.035	9760	.055	9974	.04	10130	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974	10130	980	950.3	840	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.89

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9095	1636.6	9172	1637	9243	1636.9	9312	1637.2	9359	1637.1
9398	1637.6	9428	1638.1	9460	1637.5	9490	1634	9517	1630.6
9522	1631.6	9539	1631.8	9550	1631.4	9571	1631.6	9626	1632.6
9676	1633.3	9714	1633.4	9744	1632.5	9775	1631.7	9809	1630.9
9818	1629.2	9822	1629.2	9831	1630.6	9850	1631.6	9866	1632.4
9887	1632.6	9901	1632.1	9919	1636.5	9934	1635.9	9949	1633.3
9969	1633.2	9981	1632.2	10000	1626.9	10011	1627	10018	1628.2
10035	1627.9	10056	1626.8	10068	1626.8	10096	1630.8	10121	1630.7
10172	1631.1	10182	1630.2	10194	1630.1	10210	1633.5	10224	1635.6
10243	1636.1	10296	1636.9	10337	1637	10370	1637.2	10414	1637.1
10440	1636.4	10469	1636.4	10477	1635.7	10492	1636.7	10535	1636.9
10578	1637.6	10598	1637.2	10621	1637.2				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9095	.045	9969	.04	10096	.055	10224	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969	10096	700	738.4	730	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.75

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9040	1633.1	9098	1633.1	9146	1632.7	9185	1632	9268	1632
9319	1631.5	9364	1630.5	9404	1630.7	9431	1629.9	9467	1626.7
9481	1626.1	9500	1624.3	9515	1624.3	9534	1623.4	9549	1619.5
9557	1619.5	9566	1622.4	9580	1624.1	9602	1624.8	9637	1625.6
9689	1626.1	9712	1626	9736	1625	9751	1625.4	9769	1627.1
9816	1628.7	9835	1628.8	9850	1627.8	9875	1628	9933	1628.6
9944	1627.2	9963	1626.9	9967	1626.1	9977	1625.7	10000	1619.8
10015	1620.1	10027	1621.2	10050	1621.5	10070	1616.7	10079	1616.3
10102	1627.5	10116	1627.9	10121	1627.5	10138	1628.4	10174	1629.3
10210	1630.3	10259	1631.2	10307	1631.4	10370	1631.7	10411	1631.7

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9040	.035	9534	.04	9580	.045	9977	.04	10102	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977	10102	880	1048.4	1030	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.55

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9645	1628	9680	1627.1	9703	1626.7	9731	1626.5	9761	1626.1

9790	1625.3	9822	1623.7	9835	1622.3	9858	1618.7	9869	1619.5
9906	1619.7	9935	1619.5	9954	1618.8	9972	1615.4	9982	1615.3
9991	1613.8	10000	1613.9	10030	1614.7	10057	1615.2	10078	1614.9
10093	1613.4	10104	1614.5	10126	1617.5	10147	1619.4	10184	1620.5
10222	1620.7	10247	1620.5	10266	1620.2	10278	1619.4	10314	1618.9
10326	1619.4	10343	1620	10368	1624.2	10381	1625	10410	1625.1
10453	1625.3	10483	1625.2	10525	1625.1	10531	1625		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9645	.035	9954	.04	10147	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9954	10147	730	755.3	550	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.41

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9542	1618	9643	1618.6	9676	1618.9	9683	1620.7	9694	1619
9751	1619.4	9787	1619.7	9830	1620	9867	1619.2	9907	1619.4
9940	1619.7	9968	1618.7	9979	1615.1	9993	1609.8	10000	1609.2
10009	1608.3	10021	1607.6	10027	1609.7	10043	1610.4	10053	1610.4
10058	1611.1	10070	1612.8	10077	1613.1	10085	1611.8	10096	1612
10106	1610.1	10113	1611.9	10124	1613	10135	1613	10157	1612.5
10178	1611.8	10194	1612	10212	1610.2	10221	1610.9	10245	1610.4
10257	1609.6	10282	1609.4	10297	1608.7	10310	1610.1	10324	1611
10333	1611	10353	1614.7	10383	1618.6	10403	1620.1	10426	1620.5
10440	1621.2	10464	1619.6	10479	1617.9	10496	1618.1	10517	1619.3
10534	1620	10569	1621	10607	1622	10642	1622.6	10678	1622.9
10732	1623	10769	1623.1						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9542	.035	9968	.04	10070	.055	10333	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968	10070	980	968.9	950	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9542	9940	1619.7

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.22

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9749	1612	9816	1611.9	9893	1611.1	9937	1610.5	9977	1609.1
9996	1599.9	10000	1599.4	10022	1599.2	10041	1598.9	10057	1602.7
10077	1605.6	10091	1606.6	10113	1606.1	10126	1606.8	10151	1607.7
10166	1607.9	10191	1606.7	10210	1606	10234	1606.8	10242	1605.9
10249	1606.2	10260	1604.1	10269	1605.4	10282	1605.1	10301	1602
10310	1601.5	10327	1601.9	10348	1607.8	10374	1608.2	10413	1608
10439	1607.9	10461	1604.5	10480	1607.3	10507	1607.9	10527	1609.1
10570	1611	10605	1612.3	10657	1613.6	10672	1613.8	10708	1613.4
10752	1613.6	10797	1614.3	10850	1615.1				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9749	.035	9977	.04	10091	.055	10282	.04	10348	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977	10091	535	553.1	600	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.12

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9503	1606.8	9545	1606.7	9620	1606.5	9665	1606.2	9703	1605.5
9754	1604.5	9762	1603.8	9792	1604.4	9836	1603.5	9865	1603.5
9886	1602.9	9903	1603.3	9928	1603.9	9975	1604.1	10000	1596.3
10009	1596.9	10015	1596.4	10032	1596.7	10059	1595.8	10070	1600.2
10087	1601.3	10109	1601.7	10130	1602.2	10144	1602.4	10156	1601.5

10176	1602.1	10205	1602.1	10213	1601.7	10230	1602.2	10258	1602.8
10282	1595.4	10302	1596.7	10319	1597.2	10351	1601.5	10370	1600.3
10378	1601.1	10387	1601.1	10417	1603.1	10441	1603.4	10480	1603.1
10493	1602.9	10513	1603.8	10532	1604.1	10546	1606.5	10564	1606.1
10587	1607.2	10621	1608.2	10657	1609.1	10716	1609.8	10769	1610.4
10822	1610.7								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9503	.035	9975	.04	10087	.055	10258	.04	10351	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975	10087	255	283.6	330	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 15.06

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9663	1606.6	9685	1606.5	9707	1605.7	9733	1603	9751	1599.7
9759	1599	9764	1599.5	9782	1600.1	9800	1600.6	9836	1600.6
9872	1601.4	9917	1602.1	9972	1602.2	9988	1597.9	10000	1593
10010	1591.5	10020	1591.3	10043	1594.5	10060	1593.9	10070	1595.3
10089	1597.5	10109	1598	10126	1597.8	10138	1595.7	10152	1596.7
10174	1600.2	10205	1600.1	10229	1593.4	10246	1593.7	10268	1596.4
10283	1596.6	10298	1597.3	10314	1597.8	10323	1597.1	10337	1598.4
10350	1597.4	10367	1600	10390	1601.4	10411	1601.3	10441	1599.6
10453	1595.7	10470	1600.3	10480	1600.7	10495	1602.7	10517	1603.6
10549	1605.1	10581	1606	10621	1606.6	10667	1606.9	10713	1607.1
10776	1607.2								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9663	.045	9972	.04	10089	.055	10205	.04	10268	.045
10441	.04	10470	.035						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972	10089	670	930.3	950	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.89

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9234	1601.5	9270	1601.3	9318	1599.7	9337	1598.4	9377	1597.4
9406	1597	9434	1596.9	9460	1597.5	9477	1598.4	9494	1598.5
9511	1597	9549	1595.3	9572	1593.2	9577	1593.5	9587	1590.8
9606	1591.2	9626	1591	9633	1592	9659	1593	9671	1592.7
9683	1593.5	9702	1593.6	9714	1592.4	9741	1592.5	9775	1592.4
9804	1592.7	9817	1591.3	9847	1591.4	9869	1591.8	9890	1592.2
9906	1593	9927	1592.5	9938	1591.9	9949	1589.9	9956	1589.9
9979	1587.2	9995	1583.3	10000	1583.2	10013	1583.3	10032	1583.8
10042	1588	10059	1596.4	10087	1597.2	10101	1598.2	10141	1599.3
10186	1599.6	10236	1600.2	10284	1600.4	10319	1600.5		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9234	.035	9577	.055	9633	.045	9938	.04	10059	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9938	10059	700	756.4	760	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.74

INPUT
Description: CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW

Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9253	1594.6	9384	1594.6	9435	1593.5	9495	1592.2	9526	1591.7
9540	1590.5	9564	1589.6	9615	1589.3	9650	1589	9663	1587.4
9705	1587.4	9720	1587	9769	1588.5	9791	1588.3	9809	1587.1
9837	1586.1	9853	1585.5	9871	1585.1	9891	1585.5	9917	1584.9
9952	1585	9976	1587.3	9988	1581.8	10000	1581.8	10024	1582.1

10057	1581.7	10076	1588.3	10095	1588.3	10125	1590.2	10145	1591
10172	1591.6	10203	1591.5	10225	1591.5	10248	1591.6	10375	1591.7
10635	1592	10690	1592.6						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9253	.035	9650	.055	9769	.035	9976	.04	10076	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976	10076	870	780	660	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.59

INPUT
Description: Added x-sec for stakeholder alternative
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8990	1585.3	9720	1586	9800	1586	9805	1584	9810	1582
9815	1580	9820	1578	9840	1578	9860	1580	9900	1582
9970	1582	9980	1580	9990	1578	10110	1578	10130	1580
10140	1582	10210	1582	10220	1580	10280	1580	10310	1582
10330	1584	10360	1586	10480	1586	10940	1586		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
8990	.035	9970	.04	10140	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970	10140	50	50	50	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.58

INPUT
Description: Added x-sec for stakeholder alternative
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9010	1585	9480	1584	9760	1586	9810	1586	9815	1584
9820	1582	9825	1580	9830	1578	9860	1578	9870	1580
9970	1580	9980	1578	10020	1576	10050	1576	10120	1578
10240	1578	10260	1580	10300	1582	10310	1584	10330	1586
10930	1586	11010	1586						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9010	.035	9970	.04	10120	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970	10120	180	190	230	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.54

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8984	1584.8	9072	1584.8	9160	1584.7	9220	1584.7	9283	1584.9
9355	1584.7	9421	1584.5	9499	1584.2	9525	1583.8	9546	1583.4
9563	1583.7	9621	1583.4	9683	1583.8	9715	1583	9741	1583.4
9767	1582.9	9798	1583.5	9818	1583.9	9845	1584.2	9892	1584
9926	1583.2	9950	1581.9	9970	1574.4	9986	1574	10000	1571.6
10045	1576.7	10066	1574.9	10080	1577.8	10110	1579.5	10136	1577.7
10153	1578.5	10177	1578.1	10199	1576.3	10222	1576.9	10259	1576.6
10273	1577.7	10287	1577.7	10306	1578.9	10354	1578.4	10384	1578.1
10410	1577	10416	1578.1	10428	1578.3	10437	1577.7	10458	1580.1
10480	1583	10495	1583.8	10523	1584.2	10556	1584.8	10588	1585
10623	1584.4	10669	1583.5	10695	1583.4	10738	1583.4	10762	1583.8
10808	1584.1	10821	1583.9	10881	1583.9	10936	1584.2	10999	1584.2
11072	1584.2	11131	1584.3	11205	1584.1	11269	1584.2	11381	1584.9

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8984	.035	9950	.04	10110	.055	10177	.07	10306	.055
10495	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10110	1410	1273.2	1150	.1	.3

CROSS SECTION RIVER: RIVER-1

REACH: Reach-1 RS: 14.3

INPUT
Description: The following GR record has been modified as per discussion with the FEMA technical evaluator. From station 8450 to station 9500, the elevations are read from the topographic map. From station 9563 to station station 11361, the elevations remain the same as provided by the Aerial Mapping Company, Inc (AMCI) (March 17, 1998).

Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8450	1576.2	8550	1575.9	8650	1574.1	8750	1573.7	8850	1573.5
8950	1573.4	9050	1573.3	9150	1572.5	9250	1572.5	9350	1571.9
9450	1571.9	9500	1573.5	9563	1573.8	9626	1574.2	9652	1573.5
9672	1573.1	9707	1573.8	9731	1573.7	9769	1573.8	9788	1573.2
9836	1573.2	9878	1572.9	9906	1572.4	9923	1571.6	9941	1570.4
9961	1565.1	9967	1565.2	9973	1560	9983	1560.3	10000	1559.6
10011	1566.5	10027	1570	10045	1570.1	10052	1569.4	10062	1570.1
10097	1571	10131	1571.2	10157	1571.1	10191	1572.5	10211	1572.9
10251	1572.6	10297	1572.3	10351	1572.5	10386	1572.2	10410	1571.8
10417	1572.1	10437	1571.7	10448	1571.7	10480	1571.5	10515	1571.6
10552	1572.7	10571	1572.9	10608	1572.7	10642	1572.4	10681	1571.4
10735	1571.6	10765	1571.9	10792	1572	10804	1571.2	10811	1571.8
10852	1573.2	10899	1575.9	10931	1577.1	10967	1577.9	10992	1578.4
11034	1578.7	11096	1578.6	11179	1578.4	11233	1578.2	11273	1577.7
11295	1582.1	11336	1582.8						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8450	.045	9923	.04	10027	.045	10681	.07	10852	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9923	10027	1010	1213.6	1210	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 14.07

INPUT
Description: CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW

Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8530	1565.4	8652	1564	8685	1562	8705	1560.7	8805	1560.7
8920	1562	9043	1562.4	9116	1562.8	9185	1563.1	9201	1562.8
9250	1562.8	9286	1563.3	9321	1563.7	9353	1563.4	9394	1562.5
9417	1561.5	9462	1561.4	9530	1562.3	9554	1562.4	9566	1562
9614	1562	9680	1562.3	9746	1563.1	9814	1563.6	9855	1564
9879	1564.3	9898	1560.9	9904	1561.4	9924	1558.5	9938	1558.9
9959	1558.9	9972	1557.5	9978	1557.5	10000	1558.5	10020	1562
10040	1562.6	10059	1564.5	10077	1564	10125	1563.5	10151	1563.1
10166	1562.6	10176	1562.7	10201	1562.2	10217	1563.1	10249	1563
10300	1563.1	10338	1563	10381	1563.2	10396	1563.1	10404	1562.3
10408	1563.1	10454	1563.1	10499	1563.1	10516	1564.1	10571	1565.5
10608	1566	10656	1565.9	10710	1565.8	10758	1565.6	10813	1564.7
10848	1564.3	10873	1564.8	10923	1565.1	10950	1570	10989	1570.8

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8530	.045	8705	.07	8805	.045	9879	.04	10059	.045
10396	.07	10499	.035						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9879	10059	1050	1134.1	1100	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10608	10989	

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.86

INPUT
Description: CROSS-SECTION PROVIDED BY AERIAL MAPPER SKEWED TO CONTAIN FLOW

Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8212	1556	8550	1554	8600	1553	8617	1553.4	8685	1552.4
8708	1551.6	8749	1551.5	8759	1550.6	8767	1551.7	8788	1552.1

8817	1551.5	8863	1554.3	8895	1555.1	8908	1555.4	8935	1555.1
8975	1555	9022	1555.5	9072	1556.1	9125	1556.9	9165	1557.1
9223	1557.3	9242	1556.6	9263	1557.3	9298	1557.4	9319	1557
9330	1556.1	9344	1553.5	9379	1552.5	9393	1551.4	9404	1552.9
9416	1552.7	9420	1551.9	9429	1553.3	9446	1553.2	9464	1549.8
9472	1549.3	9494	1549.8	9513	1553	9535	1553.6	9596	1553.4
9605	1552.9	9613	1553.3	9634	1553.5	9666	1553.4	9716	1553.2
9727	1552.5	9739	1553.4	9770	1552.6	9784	1553.6	9803	1553.4
9819	1551.8	9831	1551.2	9842	1552.5	9855	1551.1	9864	1553.3
9885	1553.3	9919	1551.8	9936	1549	9948	1549	9970	1551.6
9983	1550.4	9991	1547.6	10000	1546.3	10009	1551.6	10023	1554.6
10042	1555.7	10083	1555.6	10149	1554.3	10159	1550.9	10171	1552.6
10197	1554.4	10232	1554.7	10271	1556	10327	1557	10379	1557.5
10433	1557.7	10477	1557.5						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8212	.045	8685	.055	8817	.045	9446	.04	9513	.055
9885	.04	10042	.055	10149	.04	10197	.035		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9885	10042	1060	1049.1	1050	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.66

INPUT
Description:
Station Elevation Data num= 92

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8244	1548.4	8287	1548.9	8335	1549	8352	1548.3	8399	1548.2
8462	1548.3	8514	1548	8594	1547.5	8663	1546.9	8720	1546
8738	1545.8	8780	1544.9	8828	1544.1	8914	1543.6	8917	1543.1
8921	1543.7	8985	1544	9048	1544.6	9086	1545.1	9138	1545.3
9173	1546.1	9234	1546.5	9275	1546.3	9318	1546	9360	1545.7
9383	1545.3	9436	1545.1	9449	1544.5	9457	1545	9467	1544.1
9477	1545.4	9492	1544.9	9512	1543.5	9528	1540.2	9540	1540.5
9550	1542.2	9572	1546.6	9585	1546.4	9600	1542.7	9619	1542.8
9627	1543.3	9643	1542.4	9655	1543.1	9667	1546	9689	1546.6
9709	1546.7	9717	1546.1	9736	1546	9744	1544.6	9753	1546
9775	1545.3	9791	1546.1	9829	1546.1	9852	1547.5	9878	1547.5
9894	1546.7	9941	1546.7	9956	1545.9	9988	1544.6	10000	1542.1
10006	1542.3	10015	1543.9	10055	1543	10063	1543.5	10083	1546.5
10108	1546.6	10119	1546	10133	1547.2	10145	1546.3	10160	1547.2
10177	1546.2	10193	1546.6	10207	1546.1	10246	1546.4	10280	1546.8
10324	1547.3	10357	1547.3	10379	1546.7	10392	1545.6	10408	1543.2
10430	1543.9	10442	1542.9	10465	1542.6	10486	1548.6	10509	1549.3
10557	1549.5	10592	1549.8	10646	1549.9	10686	1549.4	10727	1549.5
10784	1549.4	10846	1549.5						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8244	.045	8828	.055	8985	.045	9477	.04	9667	.055
9941	.04	10083	.055	10357	.04	10486	.035		

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9941	10083	500	549.1	540	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.55

INPUT
Description:
Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8416	1544.6	8496	1544.5	8598	1543.9	8689	1543.5	8797	1542.8
8877	1542.2	8929	1541.9	8950	1541.3	8963	1540.3	8985	1539.6
8993	1540.1	9040	1540.1	9081	1539.8	9104	1540.4	9157	1540
9241	1540.8	9311	1541.2	9346	1540.5	9443	1541	9451	1540.2
9464	1541.2	9477	1541	9510	1541.9	9558	1542.7	9592	1543.1
9645	1543.3	9688	1543.1	9715	1541.9	9736	1539.8	9742	1540.1
9757	1538.2	9776	1537.4	9787	1532.2	9804	1535.6	9828	1540.7
9836	1539.7	9855	1541.7	9877	1541.6	9897	1542	9930	1541.4
9965	1541.8	9988	1535.8	10000	1535.2	10010	1538.4	10031	1540.8
10045	1540.9	10054	1540.5	10065	1541.3	10098	1541.2	10123	1541.8
10132	1541.3	10150	1542.7	10176	1541.1	10191	1539.5	10208	1538.7
10219	1537.7	10233	1539.2	10262	1541.4	10270	1541.1	10283	1542
10307	1542.3	10349	1541.4	10370	1537.3	10380	1537.9	10394	1537
10403	1538.6	10432	1541	10456	1542.6	10494	1543	10550	1544.4
10623	1544.5	10680	1545	10743	1545.2	10802	1544.8	10856	1544.6
10907	1544.2	10973	1544.1	10985	1545.1	10993	1545.3		

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8416	.045	8929	.055	9104	.045	9715	.04	9828	.055
9965	.04	10031	.055	10150	.04	10262	.055	10349	.04
10456	.035								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965	10031	740	787.3	850	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.4

INPUT
Description: Q100 INCREASED FROM 23300,23300 TO 26700,26700 CFS DUE TO UPSTREAM DEVELOPMENT.

Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8520	1540	8940	1538	9105	1536	9155	1535	9197	1536
9202	1536.2	9212	1536	9214.5	1535.9	9217	1536	9287	1536.5
9359	1536	9414	1535.5	9474	1536	9641	1537.5	9670	1537.6
9692	1536.4	9719	1534.6	9732	1527.4	9748	1530.8	9770	1532.1
9782	1530	9800	1534.1	9820	1533.9	9840	1535.3	9849	1534.9
9866	1535.8	9908	1536.5	9939	1537.1	9968	1536.9	9980	1535.2
9994	1529	10000	1528.7	10010	1529.7	10033	1534.5	10063	1534.1
10084	1534.3	10102	1534.3	10133	1536	10164	1536.4	10177	1535
10194	1535.9	10209	1535.2	10246	1526.8	10252	1528.5	10269	1529.1
10289	1537.1	10319	1537.5	10361	1536.6	10379	1535.1	10395	1535.3
10422	1536	10447	1535.1	10465	1535.7	10514	1535.8	10539	1535.1
10600	1535	10653	1535.4	10687	1535.5	10726	1535	10744	1534.3
10772	1534.4	10797	1535.1	10833	1534.7	10874	1535.5	10910	1535.5
10944	1535.1	11001	1534.7	11027	1535.1	11043	1539	11070	1538.8
11080	1537.4	11101	1540.1	11142	1539.6				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8520	.045	9670	.04	9800	.045	9968	.04	10033	.055
10209	.04	10289	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968	10033	650	678.6	590	.1	.3

CROSS SECTION RIVER: RIVER-1
REACH: Reach-1 RS: 13.28

INPUT
Description: CROSS-SECTION AT WHICH FLOWS TO CAP OVERCHUTES 1 AND 2 RECOMBINE. WSEL MATCHES AT THIS CROSS-SECTION

Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
8217	1536	8297	1534.9	8552	1534.2	8677	1534.3	8812	1534
8979	1532	9107	1530	9165	1529.3	9205	1530	9255	1532
9337	1532.2	9390	1531.5	9439	1531.5	9484	1530.1	9507	1525.7
9523	1526	9537	1529.8	9605	1530.1	9671	1530.9	9682	1530.2
9709	1530.4	9726	1531.2	9776	1531.3	9840	1530.4	9851	1529.7
9901	1530.9	9962	1531.6	9975	1530.6	9991	1522.9	10000	1522.6
10034	1522.9	10052	1530.4	10083	1530.6	10097	1527.4	10110	1531.2
10143	1531	10169	1531.2	10193	1532.3	10222	1532.9	10250	1532.2
10302	1532.2	10347	1532.2	10363	1531.6	10389	1532	10421	1531.1
10475	1531.1	10529	1531.1	10581	1529.7	10594	1530.3	10634	1530.6
10654	1530	10667	1530.5	10697	1529.9	10727	1531.7	10771	1532.2
10840	1532.9	10884	1533.5	10956	1533.9	10961	1533.3	10969	1534.6
10995	1534.9	11002	1534	11019	1533.5	11025	1534.9	11065	1535.4

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
8217	.045	9107	.07	9205	.045	9484	.04	9537	.045
9962	.04	10052	.045						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9962	10052	1260	1471	1485	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
8217	9537	

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach-1	13.28	26700.0	1522.6	1533.7	1533.7	1534.9	0.007372	12.7	3992.1	2106.5	0.8
Reach-1	13.28	26700.0	1522.6	1533.7	1533.7	1534.9	0.007407	12.8	3984.8	2104.8	0.8
Reach-1	13.4	26700.0	1528.7	1538.0	1537.0	1538.4	0.004102	7.6	5608.0	2108.7	0.6
Reach-1	13.4	26700.0	1528.7	1538.0	1537.0	1538.4	0.004090	7.6	5611.6	2099.7	0.6
Reach-1	13.55	26700.0	1535.2	1542.9	1542.8	1543.9	0.012936	11.7	3484.5	1578.3	1.0
Reach-1	13.55	26700.0	1535.2	1542.9	1542.8	1543.9	0.012977	11.7	3480.0	1577.3	1.0
Reach-1	13.66	26700.0	1542.1	1548.0	1547.1	1548.4	0.006326	7.0	4948.7	1965.7	0.6
Reach-1	13.66	26700.0	1542.1	1548.0	1547.1	1548.4	0.006310	7.0	4953.3	1965.7	0.6
Reach-1	13.86	26700.0	1546.3	1555.8	1555.5	1556.6	0.009373	9.8	4128.0	1741.1	0.8
Reach-1	13.86	26700.0	1546.3	1555.8	1555.5	1556.6	0.009383	9.8	4124.5	1735.0	0.8
Reach-1	14.07	26700.0	1557.5	1565.0	1564.5	1565.5	0.007320	8.8	4905.3	2080.7	0.7
Reach-1	14.07	26700.0	1557.5	1564.9	1564.6	1565.5	0.007328	8.9	4903.6	2080.4	0.7
Reach-1	14.3	26700.0	1559.6	1574.7	1574.7	1575.6	0.004784	11.0	5349.4	2262.8	0.6
Reach-1	14.3	26700.0	1559.6	1574.7	1574.7	1575.6	0.004761	11.0	5359.6	2262.8	0.6
Reach-1	14.54	26700.0	1571.6	1582.6	1582.3	1584.6	0.011116	13.9	2736.9	539.0	0.9
Reach-1	14.54	26700.0	1571.6	1582.6	1582.3	1584.6	0.011180	13.9	2731.7	538.8	0.9
Reach-1	14.58	26700.0	1576.0	1584.9	1583.1	1585.9	0.003754	9.1	3368.4	1046.8	0.6
Reach-1	14.58	26700.0	1576.0	1584.8	1583.1	1586.0	0.003944	9.2	3169.6	650.9	0.6
Reach-1	14.59	26700.0	1578.0	1584.7	1584.7	1586.8	0.010722	12.9	2342.6	537.1	0.9
Reach-1	14.59	26700.0	1578.0	1584.7	1584.7	1586.8	0.010722	12.9	2342.6	537.1	0.9
Reach-1	14.74	26700.0	1581.7	1591.6	1591.0	1593.2	0.005979	12.1	2919.2	748.8	0.7
Reach-1	14.74	26700.0	1581.7	1591.7	1591.1	1593.7	0.007042	13.1	2502.4	608.0	0.8
Reach-1	14.89	26700.0	1583.2	1596.3	1596.3	1598.5	0.007794	14.1	2664.2	532.6	0.8
Reach-1	14.89	26700.0	1583.2	1596.7	1596.4	1598.8	0.006898	13.7	2670.6	470.7	0.8
Reach-1	15.06	26700.0	1591.3	1603.0	1602.3	1604.3	0.005587	11.1	3362.9	770.8	0.7
Reach-1	15.06	26700.0	1591.3	1603.1	1602.2	1604.6	0.006092	11.7	2958.0	531.4	0.7
Reach-1	15.12	26700.0	1595.8	1605.2	1605.2	1606.9	0.008722	12.7	2827.1	822.4	0.8
Reach-1	15.12	26700.0	1595.8	1605.1	1605.1	1607.2	0.010599	13.8	2429.8	563.1	0.9
Reach-1	15.22	26700.0	1598.9	1610.2	1610.2	1612.2	0.009111	14.1	2582.6	604.7	0.9
Reach-1	15.22	26700.0	1598.9	1610.6	1610.2	1612.3	0.007234	12.9	2791.8	574.2	0.8
Reach-1	15.41	26700.0	1607.6	1618.4	1616.7	1619.9	0.006996	11.8	2863.0	514.2	0.8
Reach-1	15.41	26700.0	1607.6	1618.1	1616.7	1619.7	0.008375	12.6	2694.8	417.5	0.8
Reach-1	15.55	26700.0	1613.4	1623.0	1622.9	1625.0	0.007952	12.8	2482.1	532.2	0.8
Reach-1	15.55	26700.0	1613.4	1623.1	1622.9	1625.1	0.007416	12.4	2540.9	532.2	0.8
Reach-1	15.75	26700.0	1616.3	1630.0	1629.3	1631.2	0.004905	11.2	3333.3	769.7	0.7
Reach-1	15.75	26700.0	1616.3	1629.9	1629.2	1631.3	0.005236	11.5	3179.0	718.3	0.7
Reach-1	15.89	26700.0	1626.8	1635.5	1635.5	1637.3	0.010358	13.7	2900.6	724.5	0.9

Reach-1	15.89	26700.0	1626.8	1636.7	1636.7	1639.4	0.010491	15.4	2300.1	393.0	0.9
Reach-1	16.07	26700.0	1634.3	1644.0	1643.7	1646.0	0.008036	13.3	2657.9	520.5	0.8
Reach-1	16.07	26700.0	1634.3	1645.1	1644.0	1647.1	0.006317	12.8	2669.4	370.0	0.7
Reach-1	16.19	26700.0	1637.5	1648.8	1648.5	1650.3	0.006226	12.5	3315.6	763.8	0.7
Reach-1	16.19	26700.0	1637.5	1649.2	1648.6	1651.0	0.006646	13.2	2832.3	497.8	0.8
Reach-1	16.27	26700.0	1639.4	1652.8	1652.8	1654.8	0.007406	14.2	3012.4	651.5	0.8
Reach-1	16.27	26700.0	1639.4	1653.1	1653.1	1655.5	0.007998	15.0	2636.1	473.2	0.8
Reach-1	16.49	26700.0	1653.3	1661.8	1660.9	1663.1	0.006947	11.5	3055.4	654.6	0.8
Reach-1	16.49	26700.0	1653.3	1662.1	1660.9	1663.3	0.005638	10.7	3294.5	667.9	0.7
Reach-1	16.68	26700.0	1662.3	1669.5	1667.6	1670.3	0.005864	9.4	3701.4	660.6	0.7
Reach-1	16.68	26700.0	1662.3	1669.2	1667.6	1670.2	0.006650	9.8	3559.2	659.6	0.7
Reach-1	16.86	27300.0	1670.5	1678.7	1678.7	1682.2	0.012826	14.9	1829.0	554.7	1.0
Reach-1	16.86	27300.0	1670.5	1678.8	1678.8	1682.2	0.012439	14.8	1846.7	567.0	1.0
Reach-1	16.865	Bridge									
Reach-1	16.87	27300.0	1669.9	1685.3	1679.1	1686.2	0.001538	7.6	3599.2	1921.0	0.4
Reach-1	16.87	27300.0	1669.9	1685.3	1679.1	1686.2	0.001535	7.6	3601.4	295.5	0.4
Reach-1	16.96	27300.0	1676.2	1686.5	1683.5	1687.0	0.002213	6.6	5885.0	1313.1	0.4
Reach-1	16.96	27300.0	1676.2	1685.9	1684.8	1687.8	0.006758	11.0	2601.8	456.0	0.7
Reach-1	17.06	27300.0	1678.2	1689.4	1689.4	1691.2	0.008732	13.1	3203.7	986.8	0.8
Reach-1	17.06	27300.0	1678.2	1690.2	1690.2	1692.0	0.007506	13.0	3397.7	870.0	0.8
Reach-1	17.18	27300.0	1686.2	1695.3	1695.3	1697.0	0.009207	13.3	2865.4	857.2	0.9
Reach-1	17.18	27300.0	1686.2	1695.2	1695.2	1697.1	0.009533	13.4	2758.9	755.0	0.9
Reach-1	17.3	27300.0	1692.2	1701.3	1701.3	1702.8	0.007557	12.8	3769.1	1035.6	0.8
Reach-1	17.3	27300.0	1692.2	1701.2	1701.2	1702.8	0.007893	13.0	3593.0	922.0	0.8
Reach-1	17.39	27300.0	1696.2	1705.4	1705.4	1707.1	0.008541	12.0	3169.4	1380.4	0.8
Reach-1	17.39	27300.0	1696.2	1705.3	1705.3	1707.2	0.009126	12.3	2926.1	713.0	0.8
Reach-1	17.48	27300.0	1702.2	1709.5	1709.5	1711.0	0.008642	12.0	3309.1	962.9	0.8
Reach-1	17.48	27300.0	1702.2	1709.5	1709.5	1711.1	0.009000	12.3	3127.5	851.1	0.8
Reach-1	17.57	27300.0	1702.2	1714.0	1714.0	1715.7	0.006889	12.5	3383.3	889.9	0.8
Reach-1	17.57	27300.0	1702.2	1714.0	1714.0	1715.8	0.007211	12.8	3160.3	746.5	0.8
Reach-1	17.65	27300.0	1704.2	1717.4	1717.4	1719.0	0.005370	13.2	3639.3	903.7	0.7
Reach-1	17.65	27300.0	1704.2	1717.3	1717.3	1719.0	0.005538	13.4	3531.0	846.3	0.7
Reach-1	17.78	27300.0	1713.4	1721.9	1721.5	1723.1	0.007738	12.0	3590.8	948.9	0.8
Reach-1	17.78	27300.0	1713.4	1721.9	1721.5	1723.1	0.007440	11.8	3624.2	934.8	0.8
Reach-1	17.84	27300.0	1718.2	1724.5	1724.3	1725.9	0.009558	11.6	3116.7	965.8	0.9
Reach-1	17.84	27300.0	1718.2	1724.4	1724.3	1726.0	0.009906	11.8	3021.5	905.0	0.9
Reach-1	17.95	27300.0	1722.2	1730.1	1730.1	1731.8	0.010079	12.9	3058.4	900.3	0.9
Reach-1	17.95	27300.0	1722.2	1730.0	1730.0	1731.8	0.010527	13.1	2983.2	774.7	0.9
Reach-1	18.09	27700.0	1727.4	1734.8	1733.6	1735.5	0.004778	8.8	4967.6	1505.5	0.6
Reach-1	18.09	27700.0	1727.4	1735.0	1733.4	1736.0	0.005689	9.8	3834.4	715.0	0.7

Reach-1	18.16	27700.0	1728.8	1736.8	1736.7	1738.2	0.011086	13.3	3310.4	988.8	0.9
Reach-1	18.16	27700.0	1728.8	1737.3	1736.7	1738.8	0.009725	12.9	3096.2	651.4	0.9
Reach-1	18.23	27700.0	1730.0	1741.9	1741.9	1743.2	0.007537	13.6	4155.7	1317.0	0.8
Reach-1	18.23	27700.0	1730.0	1742.1	1742.1	1744.0	0.009024	15.2	3170.6	700.0	0.9
Reach-1	18.29	27700.0	1733.5	1743.9	1742.2	1744.7	0.004053	9.6	4330.6	1144.3	0.6
Reach-1	18.29	27700.0	1733.5	1744.7	1742.3	1745.4	0.003152	9.0	4223.5	700.0	0.5
Reach-1	18.49	27700.0	1741.7	1750.4	1750.4	1752.2	0.013275	14.9	2942.7	826.2	1.0
Reach-1	18.49	27700.0	1741.7	1751.0	1751.0	1753.0	0.012442	15.3	2790.5	643.0	1.0
Reach-1	18.57	27700.0	1744.4	1754.9	1754.3	1756.3	0.007411	12.6	3830.3	942.5	0.8
Reach-1	18.57	27700.0	1744.4	1755.5	1754.7	1756.8	0.006659	12.5	3719.7	780.0	0.8
Reach-1	18.74	27300.0	1755.0	1761.6	1760.6	1762.5	0.008627	9.1	3672.8	1150.0	0.7
Reach-1	18.74	27300.0	1755.0	1761.8	1760.6	1762.8	0.008591	9.3	3474.8	745.0	0.7
Reach-1	18.84	27300.0	1755.7	1765.8	1764.6	1766.8	0.008925	9.8	3434.9	930.1	0.7
Reach-1	18.84	27300.0	1755.7	1766.2	1765.4	1767.6	0.011015	11.4	2973.6	564.0	0.8
Reach-1	18.96	27300.0	1762.2	1771.4	1771.4	1772.6	0.010465	12.2	3946.1	1436.9	0.7
Reach-1	18.96	27300.0	1762.2	1772.1	1771.7	1773.3	0.008747	11.8	3632.2	841.0	0.7
Reach-1	19.07	27300.0	1764.8	1776.4	1775.6	1777.0	0.005187	9.0	5067.5	1627.1	0.5
Reach-1	19.07	27300.0	1764.8	1776.7	1775.6	1777.6	0.005674	9.7	4036.5	830.0	0.6
Reach-1	19.18	27300.0	1770.0	1780.8	1780.8	1782.4	0.014737	12.7	3008.3	841.6	0.9
Reach-1	19.18	27300.0	1770.0	1780.9	1780.9	1782.5	0.015205	12.9	2881.1	748.8	0.9
Reach-1	19.26	27300.0	1773.0	1786.3	1785.4	1787.4	0.008109	12.2	3692.5	1603.0	0.7
Reach-1	19.26	27300.0	1773.0	1786.5	1785.4	1787.6	0.008073	12.3	3557.9	635.0	0.7
Reach-1	19.41	27300.0	1783.9	1791.5	1789.7	1792.1	0.005506	7.7	4680.1	1058.7	0.5
Reach-1	19.41	27300.0	1783.9	1791.6	1789.7	1792.2	0.005285	7.6	4629.9	950.0	0.5
Reach-1	19.52	27300.0	1786.2	1795.3	1794.6	1796.6	0.012918	12.4	3104.6	713.8	0.8
Reach-1	19.52	27300.0	1786.2	1795.3	1794.6	1796.6	0.012790	12.4	3108.1	680.0	0.8
Reach-1	19.62	27300.0	1790.3	1800.9	1799.8	1801.9	0.007762	10.2	3512.6	778.6	0.6
Reach-1	19.62	27300.0	1790.3	1800.9	1799.8	1801.9	0.007775	10.2	3508.4	746.8	0.6
Reach-1	19.72	27300.0	1795.1	1805.1	1804.4	1806.3	0.009626	11.0	3297.0	762.2	0.7
Reach-1	19.72	27300.0	1795.1	1805.1	1804.4	1806.3	0.009768	11.1	3226.3	725.0	0.7
Reach-1	19.83	27300.0	1799.3	1810.6	1810.3	1812.2	0.010909	12.7	3091.1	704.0	0.8
Reach-1	19.83	27300.0	1799.3	1810.7	1810.4	1812.3	0.010874	12.7	3025.8	650.0	0.8
Reach-1	19.92	27300.0	1802.0	1815.3	1814.9	1816.2	0.006344	11.3	4243.3	1250.2	0.6
Reach-1	19.92	27300.0	1802.0	1815.6	1814.8	1816.8	0.007266	12.3	3582.5	683.3	0.7
Reach-1	20.05	27300.0	1810.7	1820.0	1818.7	1820.7	0.005351	10.3	4270.9	1030.8	0.7
Reach-1	20.05	27300.0	1810.7	1820.3	1818.7	1821.0	0.004145	9.4	4654.0	1038.3	0.6
Reach-1	20.16	27300.0	1817.7	1824.7	1824.7	1826.1	0.009915	12.1	3210.2	1112.1	0.9
Reach-1	20.16	27300.0	1817.7	1824.7	1824.7	1826.2	0.009985	12.1	3146.3	1068.4	0.9
Reach-1	20.26	27300.0	1825.1	1830.6	1830.4	1831.8	0.011221	10.0	3462.3	1176.7	0.9
Reach-1	20.26	27300.0	1825.1	1830.7	1830.5	1831.9	0.011358	10.1	3381.3	1145.4	0.9

Reach-1	20.38	27300.0	1829.6	1835.9	1834.5	1836.5	0.006485	8.6	4390.4	1251.3	0.7
Reach-1	20.38	27300.0	1829.6	1836.0	1834.5	1836.6	0.006326	8.5	4389.0	1189.8	0.7
Reach-1	20.48	27300.0	1832.8	1841.1	1841.1	1842.3	0.009294	13.1	3721.4	1280.3	0.9
Reach-1	20.48	27300.0	1832.8	1841.6	1841.6	1843.2	0.009161	13.7	3314.1	906.0	0.9
Reach-1	20.62	27300.0	1839.3	1848.5	1848.5	1849.7	0.007795	13.2	3822.2	1226.4	0.8
Reach-1	20.62	27300.0	1839.3	1849.1	1849.1	1850.6	0.007650	13.7	3321.4	885.0	0.8
Reach-1	20.64	27300.0	1842.0	1849.9	1849.1	1850.6	0.005340	9.0	4479.9	1296.3	0.7
Reach-1	20.64	27300.0	1842.0	1850.5	1849.7	1851.5	0.005735	10.0	3702.7	850.0	0.7
Reach-1	20.71	27300.0	1843.0	1853.2	1853.2	1854.4	0.006964	12.2	4191.8	1434.3	0.8
Reach-1	20.71	27300.0	1843.0	1853.8	1853.8	1855.5	0.007745	13.5	3187.8	810.0	0.8
Reach-1	20.79	27300.0	1847.5	1856.7	1856.2	1857.5	0.006480	9.4	4255.0	1505.1	0.7
Reach-1	20.79	27300.0	1847.5	1857.5	1857.0	1858.9	0.007595	11.1	3035.1	660.0	0.8
Reach-1	20.9	27300.0	1852.6	1862.7	1862.7	1864.0	0.006746	11.9	4010.9	1522.8	0.8
Reach-1	20.9	27300.0	1852.6	1863.0	1863.0	1865.0	0.008305	13.6	3025.1	670.0	0.9
Reach-1	20.98	27300.0	1853.2	1866.4	1866.4	1867.8	0.006276	11.8	3864.9	1374.1	0.8
Reach-1	20.98	27300.0	1853.2	1866.4	1866.3	1868.3	0.007334	12.8	3122.4	670.0	0.8
Reach-1	21.05	27300.0	1857.6	1869.7	1869.7	1871.2	0.005743	12.3	3930.8	1303.6	0.7
Reach-1	21.05	27300.0	1857.6	1869.8	1869.8	1871.8	0.006890	13.5	3172.2	695.0	0.8
Reach-1	21.11	27300.0	1860.5	1872.0	1872.0	1873.6	0.006251	12.5	3665.1	1023.3	0.8
Reach-1	21.11	27300.0	1860.5	1872.1	1872.1	1873.9	0.006719	13.0	3303.7	775.0	0.8
Reach-1	21.18	27300.0	1865.0	1876.0	1876.0	1877.5	0.006016	12.3	3962.1	1511.6	0.8
Reach-1	21.18	27300.0	1865.0	1876.0	1876.0	1877.7	0.006886	12.9	3574.3	900.0	0.8
Reach-1	21.25	27300.0	1868.7	1881.1	1881.1	1882.5	0.004140	12.0	4562.2	1474.1	0.6
Reach-1	21.25	27300.0	1868.7	1881.3	1881.3	1883.3	0.005356	13.6	3442.2	745.0	0.7
Reach-1	21.31	27300.0	1870.7	1882.5	1882.0	1883.8	0.005226	12.5	3878.4	947.8	0.7
Reach-1	21.31	27300.0	1870.7	1883.3	1882.4	1884.7	0.004804	12.7	3662.8	650.0	0.7
Reach-1	21.35	27300.0	1871.5	1883.6	1883.6	1885.4	0.007351	16.2	3571.8	848.0	0.9
Reach-1	21.35	27300.0	1871.5	1884.3	1883.8	1885.9	0.005968	15.2	3672.0	705.0	0.8
Reach-1	21.41	27300.0	1874.2	1887.4	1886.6	1888.7	0.007772	16.3	3853.5	856.7	0.9
Reach-1	21.41	27300.0	1874.2	1887.4	1886.4	1888.9	0.008296	16.8	3497.2	600.0	0.9
Reach-1	21.49	27300.0	1882.0	1891.5	1890.1	1892.6	0.008681	10.5	3538.2	731.3	0.7
Reach-1	21.49	27300.0	1882.0	1891.6	1890.1	1892.7	0.007601	10.0	3652.9	700.0	0.7
Reach-1	21.58	27300.0	1888.0	1895.6	1894.9	1896.4	0.008699	8.9	4052.9	1308.9	0.7
Reach-1	21.58	27300.0	1888.0	1895.7	1895.5	1897.2	0.014487	11.6	3038.4	840.0	0.9
Reach-1	21.63	27300.0	1888.5	1898.4	1897.6	1899.4	0.011227	11.8	3929.3	1405.6	0.8
Reach-1	21.63	27300.0	1888.5	1899.3	1898.4	1900.1	0.006563	9.9	4243.5	1055.0	0.6
Reach-1	21.69	27300.0	1895.1	1902.1	1900.8	1902.7	0.006158	8.3	4934.4	1419.9	0.6
Reach-1	21.69	27300.0	1895.1	1902.3	1901.6	1903.0	0.008966	10.2	4306.8	1330.0	0.7
Reach-1	21.77	27300.0	1897.3	1905.5	1905.5	1907.1	0.015058	12.9	2890.2	929.1	0.9
Reach-1	21.77	27300.0	1897.3	1906.2	1905.5	1907.2	0.009710	11.2	3584.1	1357.7	0.8

Reach-1	21.82	27300.0	1900.5	1909.2	1908.7	1910.3	0.010810	11.4	3654.2	1179.4	0.8
Reach-1	21.82	27300.0	1900.5	1909.1	1909.1	1910.4	0.013571	12.6	3303.0	1088.0	0.9
Reach-1	21.91	27300.0	1906.0	1913.8	1913.0	1914.6	0.008475	9.1	3881.6	1122.6	0.7
Reach-1	21.91	27300.0	1906.0	1914.4	1913.5	1915.4	0.008762	9.8	3484.2	1031.0	0.7
Reach-1	21.99	27300.0	1909.9	1917.8	1917.5	1918.8	0.011966	10.4	3632.2	1401.7	0.8
Reach-1	21.99	27300.0	1909.9	1918.3	1917.7	1919.3	0.010909	10.5	3616.2	1219.1	0.8
Reach-1	22.08	27300.0	1915.0	1922.3	1921.5	1923.0	0.007547	8.1	4411.4	1542.9	0.7
Reach-1	22.08	27300.0	1915.0	1922.7	1921.9	1923.6	0.008319	8.9	3660.2	1125.0	0.7
Reach-1	22.15	27300.0	1919.0	1925.2	1924.7	1926.2	0.011201	8.6	3433.7	1189.6	0.8
Reach-1	22.15	27300.0	1919.0	1925.8	1925.3	1927.0	0.011226	9.5	3199.8	968.7	0.8
Reach-1	22.22	27300.0	1921.5	1928.7	1928.3	1930.2	0.012923	10.3	2802.9	773.0	0.8
Reach-1	22.22	27300.0	1921.5	1929.1	1928.5	1930.7	0.011036	9.7	2730.6	668.5	0.8
Reach-1	22.29	27300.0	1925.5	1932.8	1931.6	1933.8	0.007985	8.6	3478.4	1218.8	0.7
Reach-1	22.29	27300.0	1925.5	1933.1	1932.4	1934.3	0.009150	9.7	3119.7	859.3	0.7
Reach-1	22.36	27300.0	1929.0	1936.7	1936.6	1938.1	0.012357	9.7	3001.1	1039.3	0.8
Reach-1	22.36	27300.0	1929.0	1937.2	1936.6	1938.5	0.010541	9.1	2938.7	781.9	0.8
Reach-1	22.43	27300.0	1934.0	1941.3	1940.3	1942.0	0.007654	7.7	4315.7	1311.4	0.6
Reach-1	22.43	27300.0	1934.0	1942.2	1941.8	1943.4	0.013806	11.7	3410.2	918.0	0.9
Reach-1	22.48	27300.0	1936.0	1943.8	1943.8	1945.2	0.019666	11.9	2921.0	1351.1	1.0
Reach-1	22.48	27300.0	1936.0	1945.1	1944.6	1946.5	0.013063	11.5	3006.9	723.0	0.9
Reach-1	22.56	27300.0	1938.6	1948.4	1947.4	1949.3	0.007050	9.7	3648.5	1101.1	0.7
Reach-1	22.56	27300.0	1938.6	1948.9	1947.8	1950.1	0.007677	10.6	3135.2	635.0	0.7
Reach-1	22.67	27300.0	1944.5	1953.9	1953.9	1955.8	0.013689	14.0	2885.0	718.1	0.9
Reach-1	22.67	27300.0	1944.5	1954.4	1954.4	1956.5	0.013857	14.4	2711.7	575.0	0.9
Reach-1	22.73	27300.0	1947.0	1958.2	1958.1	1959.7	0.010913	14.9	3555.5	915.3	0.9
Reach-1	22.73	27300.0	1947.0	1959.0	1959.0	1961.1	0.012507	16.3	2917.2	531.0	0.9
Reach-1	22.79	27300.0	1950.0	1961.2	1960.9	1962.6	0.007922	12.2	3862.0	1007.1	0.7
Reach-1	22.79	27300.0	1950.0	1962.4	1961.5	1963.7	0.005901	11.5	3709.5	660.0	0.7
Reach-1	22.86	24400.0	1953.5	1964.4	1964.4	1965.8	0.009958	14.1	3379.9	970.7	0.8
Reach-1	22.86	24400.0	1953.5	1965.0	1964.6	1966.3	0.008171	13.2	3294.5	742.0	0.8
Reach-1	22.96	24400.0	1959.6	1974.3	1974.3	1975.7	0.007932	13.9	3550.2	914.1	0.7
Reach-1	22.96	24400.0	1959.6	1974.5	1974.5	1976.7	0.010278	16.0	2940.3	514.8	0.8
Reach-1	23.13	24400.0	1969.8	1981.2	1981.2	1983.0	0.009337	13.9	2995.5	790.2	0.8
Reach-1	23.13	24400.0	1969.8	1982.1	1981.7	1983.9	0.007534	13.2	2848.9	561.0	0.7
Reach-1	23.25	24400.0	1977.3	1987.4	1987.3	1989.0	0.009976	13.6	3217.4	745.9	0.8
Reach-1	23.25	24400.0	1977.3	1988.1	1988.1	1991.0	0.013198	16.6	2156.3	334.0	1.0
Reach-1	23.33	24400.0	1981.1	1991.4	1990.7	1993.0	0.009752	13.1	2624.7	600.4	0.8
Reach-1	23.33	24400.0	1981.1	1993.3	1990.9	1994.6	0.005903	11.1	2665.1	331.0	0.6
Reach-1	23.45	24400.0	1991.5	1998.8	1997.5	2000.0	0.013459	13.0	2812.2	616.7	0.9
Reach-1	23.45	24400.0	1991.5	1998.6	1997.6	2000.1	0.014699	13.4	2544.0	465.0	0.9

Reach-1	23.55	24400.0	1997.0	2004.5	2003.7	2005.7	0.009727	10.7	3023.0	782.6	0.8
Reach-1	23.55	24400.0	1997.0	2005.0	2004.3	2006.7	0.011602	12.4	2553.3	467.0	0.9
Reach-1	23.64	11800.0	2000.0	2009.2	2008.7	2010.1	0.006937	10.9	2203.3	756.6	0.7
Reach-1	23.64	11800.0	2000.0	2010.1	2008.7	2010.6	0.003646	8.4	2744.8	662.0	0.5
Reach-1	23.87	11800.0	2008.8	2018.6	2018.6	2020.1	0.008198	11.5	1579.6	542.4	0.7
Reach-1	23.87	11800.0	2008.8	2018.9	2018.9	2020.8	0.009431	12.5	1334.9	353.0	0.8
Reach-1	23.94	11800.0	2010.4	2021.8	2020.6	2022.8	0.005432	8.7	1796.0	623.7	0.6
Reach-1	23.94	11800.0	2010.4	2022.5	2020.7	2023.2	0.004211	8.1	1897.5	500.0	0.5
Reach-1	24.03	11800.0	2017.5	2024.9	2024.3	2025.6	0.007898	8.4	1861.0	646.6	0.7
Reach-1	24.03	11800.0	2017.5	2025.5	2025.5	2027.8	0.018333	13.6	1030.1	223.0	1.0
Reach-1	24.12	11800.0	2020.6	2029.2	2029.2	2030.8	0.008607	10.5	1336.8	448.2	0.7
Reach-1	24.12	11800.0	2020.6	2030.6	2028.6	2031.7	0.005024	9.0	1386.7	207.0	0.6
Reach-1	24.25	9700.0	2024.0	2034.7	2033.1	2035.6	0.005179	8.8	1435.7	510.3	0.6
Reach-1	24.25	9700.0	2024.0	2034.6	2033.4	2035.8	0.006887	10.0	1188.1	248.0	0.6
Reach-1	24.38	9700.0	2031.5	2038.5	2038.0	2039.6	0.008274	9.5	1364.3	413.1	0.7
Reach-1	24.38	9700.0	2031.5	2039.0	2038.0	2040.1	0.006842	9.2	1298.2	266.0	0.6
Reach-1	24.48	9700.0	2036.8	2043.3	2043.3	2044.6	0.012585	10.9	1164.1	455.2	0.8
Reach-1	24.48	9700.0	2036.8	2044.3	2044.3	2046.4	0.013220	12.5	945.6	214.0	0.9
Reach-1	24.61	9700.0	2040.2	2050.0	2049.8	2051.0	0.007093	10.2	1548.2	652.7	0.7
Reach-1	24.61	9700.0	2040.2	2051.8	2050.6	2054.7	0.010851	13.5	715.9	79.0	0.8
Reach-1	24.74	9700.0	2045.8	2056.2	2056.2	2057.2	0.006318	9.2	1533.5	701.7	0.6
Reach-1	24.74	9700.0	2045.8	2058.1	2055.2	2059.4	0.004649	9.0	1077.9	125.0	0.5
Reach-1	24.87	7800.0	2054.6	2062.0	2062.0	2063.2	0.008798	9.6	1089.8	530.9	0.7
Reach-1	24.87	7800.0	2054.6	2062.5	2062.1	2064.4	0.011420	11.5	728.1	151.0	0.8
Reach-1	24.95	7800.0	2057.4	2065.1	2063.7	2065.7	0.005166	7.1	1361.8	361.5	0.5
Reach-1	24.95	7800.0	2057.4	2066.5	2065.1	2067.7	0.005671	8.8	962.8	180.0	0.6
Reach-1	25.12	7800.0	2064.7	2072.9	2072.9	2075.3	0.013809	12.6	668.9	440.8	0.9
Reach-1	25.12	7800.0	2064.7	2072.9	2072.9	2075.3	0.013456	12.5	676.0	153.7	0.9
Reach-1	25.28	7800.0	2071.5	2081.8	2081.1	2082.5	0.004785	8.1	1490.2	579.1	0.5
Reach-1	25.28	7800.0	2071.5	2082.2	2081.1	2083.4	0.006240	9.5	1005.1	190.0	0.6
Reach-1	25.38	7800.0	2079.8	2084.9	2084.1	2085.2	0.006887	5.6	1932.8	1245.2	0.6
Reach-1	25.38	7800.0	2079.8	2085.9	2084.6	2086.2	0.004290	5.3	1943.4	646.0	0.5
Reach-1	25.45	7800.0	2084.8	2088.5	2088.5	2089.3	0.016002	7.2	1060.7	995.1	0.8
Reach-1	25.45	7800.0	2084.8	2089.1	2089.1	2090.0	0.022283	9.9	1130.2	632.0	1.0
Reach-1	25.56	7800.0	2091.6	2095.4	2095.4	2096.2	0.008607	6.1	1193.5	1220.0	0.6
Reach-1	25.56	7800.0	2091.6	2095.7	2095.4	2096.3	0.006137	5.5	1417.8	799.4	0.5
Reach-1	25.63	7800.0	2095.2	2098.9	2098.5	2099.7	0.011564	7.2	1064.6	648.4	0.7
Reach-1	25.63	7800.0	2095.2	2099.5	2099.5	2100.6	0.016692	9.5	929.7	437.3	0.9
Reach-1	25.69	7800.0	2098.0	2101.1	2099.7	2101.4	0.003564	3.4	1914.8	1264.0	0.4
Reach-1	25.69	7800.0	2098.0	2104.3	2104.3	2106.2	0.017672	13.1	773.9	190.0	1.0

Reach-1	25.73	7800.0	2100.0	2103.8	2103.8	2105.6	0.019762	10.6	736.8	1534.3	1.0
Reach-1	25.73	7800.0	2100.0	2107.1	2103.9	2107.6	0.002200	5.4	1445.2	215.0	0.4
Reach-1	25.735	Bridge									
Reach-1	25.74	7800.0	2100.0	2108.8	2103.8	2109.1	0.001022	4.3	1798.5	1880.0	0.3
Reach-1	25.74	7800.0	2100.0	2109.2	2103.9	2109.5	0.000927	4.1	1886.8	215.0	0.2
Reach-1	25.78	7800.0	2100.0	2108.8	2106.6	2109.8	0.005566	8.0	977.6	1859.6	0.6
Reach-1	25.78	7800.0	2100.0	2109.2	2106.6	2110.1	0.004553	7.5	1046.6	168.2	0.5
Reach-1	25.83	7800.0	2105.1	2112.5	2112.5	2113.7	0.013111	9.9	1046.3	2108.7	0.8
Reach-1	25.83	7800.0	2105.1	2113.1	2113.1	2115.5	0.017793	12.5	622.4	126.0	1.0
Reach-1	25.95	7800.0	2110.4	2119.1	2119.1	2120.0	0.008205	9.7	1203.3	1968.9	0.7
Reach-1	25.95	7800.0	2110.4	2120.9	2120.3	2122.7	0.007957	11.3	761.7	141.0	0.7
Reach-1	26.17	7800.0	2121.7	2132.4	2132.4	2133.5	0.009610	9.8	1207.7	564.6	0.7
Reach-1	26.17	7800.0	2121.7	2132.9	2132.7	2135.8	0.016873	13.6	575.5	96.0	1.0

ERRORS WARNINGS AND NOTES
Errors Warnings and Notes for Plan : Stk 100yr E

River: RIVER-1 Reach: Reach-1 RS: 26.17 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 26.17 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.95 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.95 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.83 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 25.83 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.78 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.78 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.74 Profile: Ex 100-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.74 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Ex 100-yr
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
answer has been disregarded.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Ex 100-yr Upstream
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Ex 100-yr Downstream
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Ex 100-yr Enc Upstream
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.735 Profile: Ex 100-yr Enc Downstream
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.73 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.73 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.69 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.69 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.63 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.63 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.56 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.56 Profile: Ex 100-yr Enc
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.45 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The 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.
River: RIVER-1 Reach: Reach-1 RS: 25.45 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.38 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 25.38 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.28 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.28 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 25.12 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 25.12 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.95 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.95 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.87 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 24.87 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.74 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.74 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.61 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.61 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

River: RIVER-1 Reach: Reach-1 RS: 24.48 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.48 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.38 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 24.38 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.25 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.25 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.12 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 24.12 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 24.03 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 24.03 Profile: Ex 100-yr Enc

Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.94 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.94 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.87 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.87 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.64 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 23.64 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.55 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 23.55 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.45 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.45 Profile: Ex 100-yr Enc
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.33 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.33 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.25 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 23.25 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.13 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 23.13 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.96 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.

River: RIVER-1 Reach: Reach-1 RS: 22.96 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.86 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.86 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.79 Profile: Ex 100-yr
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.79 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.73 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.73 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.67 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.67 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.56 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.56 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.48 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 22.48 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.43 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.43 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.36 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.36 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.29 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.29 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.22 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.22 Profile: Ex 100-yr Enc

Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 22.15 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.15 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 22.08 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 22.08 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.99 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.99 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 21.91 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.91 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.82 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.82 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.77 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The 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.
River: RIVER-1 Reach: Reach-1 RS: 21.77 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.69 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.69 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.63 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 21.63 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.58 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.58 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.49 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.49 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.41 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.41 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.35 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.35 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.31 Profile: Ex 100-yr

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.31 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 21.25 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.25 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.18 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.18 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.11 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.11 Profile: Ex 100-yr Enc
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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated

water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 21.05 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 21.05 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.98 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 20.98 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.9 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 20.9 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.79 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.79 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.71 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.71 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.64 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.64 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.62 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.62 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.48 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.48 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.38 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.38 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 20.26 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 20.26 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 20.16 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.16 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 20.05 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 20.05 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.92 Profile: Ex 100-yr

Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.92 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.83 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.83 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.72 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.72 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.62 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 19.62 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.52 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.52 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.41 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.41 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.26 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.26 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.18 Profile: Ex 100-yr

Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 19.18 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 19.07 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 19.07 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.96 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.96 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.84 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.84 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.74 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.74 Profile: Ex 100-yr Enc

Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.57 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.57 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.49 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The 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.
River: RIVER-1 Reach: Reach-1 RS: 18.49 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.29 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.29 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.23 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.23 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth

for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 18.16 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.16 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.09 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 18.09 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.95 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 17.95 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.84 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.84 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.78 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.78 Profile: Ex 100-yr Enc

Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 17.65 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.65 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.57 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.57 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.48 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.48 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.39 Profile: Ex 100-yr

Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.39 Profile: Ex 100-yr Enc
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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.3 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.3 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.18 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 17.18 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.06 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth

for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 17.06 Profile: Ex 100-yr Enc
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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 16.96 Profile: Ex 100-yr
Warning:The cross-section end points had to be extended vertically for the computed water surface.
River: RIVER-1 Reach: Reach-1 RS: 16.96 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.87 Profile: Ex 100-yr
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.87 Profile: Ex 100-yr Enc
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer
has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used
for pressure flow.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr Enc
Note: Yarnell answer is not valid if the water surface is above the low chord or if there is weir flow. The Yarnell answer
has been disregarded.
Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum
answer has been disregarded.
Note: The downstream water surface is below the minimum elevation for pressure flow. The sluice gate equations were used
for pressure flow.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr Enc Upstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.865 Profile: Ex 100-yr Enc Downstream
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.86 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth

for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.
Warning:The 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, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.86 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: RIVER-1 Reach: Reach-1 RS: 16.68 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.68 Profile: Ex 100-yr Enc
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.49 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.49 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.27 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 16.27 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The

program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 16.19 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.19 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.07 Profile: Ex 100-yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 16.07 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.89 Profile: Ex 100-yr
Warning:The energy equation could not 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.
River: RIVER-1 Reach: Reach-1 RS: 15.89 Profile: Ex 100-yr Enc
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 15.75 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.75 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.55 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.55 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.41 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The cross-section end points had to be extended vertically for the computed water surface.

Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: RIVER-1 Reach: Reach-1 RS: 15.41 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: RIVER-1 Reach: Reach-1 RS: 15.22 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 15.22 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.12 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 15.12 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.06 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 15.06 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.89 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 14.89 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.74 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.74 Profile: Ex 100-yr Enc
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.59 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 14.59 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 14.58 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.58 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.54 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 14.54 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

River: RIVER-1 Reach: Reach-1 RS: 14.3 Profile: Ex 100-yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 14.3 Profile: Ex 100-yr Enc
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: RIVER-1 Reach: Reach-1 RS: 14.07 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 14.07 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 13.86 Profile: Ex 100-yr
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.
River: RIVER-1 Reach: Reach-1 RS: 13.86 Profile: Ex 100-yr Enc
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.
River: RIVER-1 Reach: Reach-1 RS: 13.66 Profile: Ex 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.66 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.55 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.55 Profile: Ex 100-yr Enc
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.4 Profile: Ex 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.4 Profile: Ex 100-yr Enc
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: RIVER-1 Reach: Reach-1 RS: 13.28 Profile: Ex 100-yr
Warning:User specified water surface is not possible for the specified flow regime. The program used critical depth as the
starting water surface.
Warning:Divided flow computed for this cross-section.
River: RIVER-1 Reach: Reach-1 RS: 13.28 Profile: Ex 100-yr Enc
Warning:User specified water surface is not possible for the specified flow regime. The program used critical depth as the
starting water surface.
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.

APPENDIX C

HEC-RAS MODEL OUTPUT FILES SONORAN WASH

HEC-RAS Base and Full Structural Alternative Models

HEC-RAS September 1998 Version 2.2
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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

PROJECT DATA
Project Title: Watercourse Master Plan - Sonoran Wash
Project File : Wmp_UT.prj
Run Date and Time: 7/1/01 3:59:42 PM

Project in English units

Project Description:
Skunk Creek Watercourse Master Plan, Sonoran Wash Model

by Stantec
Consulting Inc. for the ASL Consulting and the Flood Control District of
Maricopa County
FCD: 99-23

Project Start Date: September 1999

PLAN DATA

Plan Title: WMP Model for Ex. Cond. Q for 100yr
Plan File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SW WMP\Wmp_UT.p02

Geometry Title: New Existing Cond Geo for 100yr
Geometry File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SW WMP\Wmp_UT.g04

Flow Title : New Existing Cond Study Q for 100yr
Flow File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SW WMP\Wmp_UT.f10

Plan Description:
Base Model for Sonoran Wash
Use Profile 1 for Base Conditions.
Use Profile 2
for Full Structural Alternative.

Plan Summary Information:
Number of: Cross Sections = 49 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 0

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

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

Encroachment Data
Equal Conveyance = True
Left Offset = 0
Right Offset = 0

River = Unnamed Trib Reach = Reach 1

RS	Profile	Method	Value1	Value2
3.84	Encr Ex 100	1	9946.42	10031.17
3.79	Encr Ex 100	1	9902.31	10030.95
3.76	Encr Ex 100	1	9959.21	10131.27
3.73	Encr Ex 100	1	9986.19	10169.83
3.70	Encr Ex 100	1	989	10055.04
3.65	Encr Ex 100	1	9870	10070
3.61	Encr Ex 100	1	9954.03	10075.81
3.54	Encr Ex 100	1	9951.95	10120
3.46	Encr Ex 100	1	9979.06	10093.5
3.40	Encr Ex 100	1	995	10096.77
3.31	Encr Ex 100	1	982	10021.06
3.24	Encr Ex 100	1	9870.21	10037.96
3.15	Encr Ex 100	1	9905.47	10065.23
3.10	Encr Ex 100	1	9959.56	10104.1
3.05	Encr Ex 100	1	9964.11	10122.07
2.97	Encr Ex 100	1	991	10096.67
2.93	Encr Ex 100	1	9846.73	10055.56
2.88	Encr Ex 100	1	978	10027.56
2.84	Encr Ex 100	1	9796.51	10023.52
2.77	Encr Ex 100	1	983	10040.56
2.73	Encr Ex 100	1	981	10039.96
2.69	Encr Ex 100	1	984	10368.91
2.64	Encr Ex 100	1	9973.39	10295.76
2.58	Encr Ex 100	1	9971.65	10180
2.52	Encr Ex 100	1	9870.05	10182.67
2.46	Encr Ex 100	1	9802.63	10028.43
2.41	Encr Ex 100	1	9845	10135
2.35	Encr Ex 100	1	9906.21	10112.44
2.28	Encr Ex 100	1	9966.07	10129.75
2.19	Encr Ex 100	1	9984.19	10238.5
2.13	Encr Ex 100	1	9840	10232
2.08	Encr Ex 100	1	9852.88	10334.75
1.99	Encr Ex 100	1	9913.35	10276.96
1.90	Encr Ex 100	1	9946.11	10566.05
1.84	Encr Ex 100	1	9970	10330
1.77	Encr Ex 100	1	971	10062.21
1.72	Encr Ex 100	1	9738.01	10033.26
1.65	Encr Ex 100	1	9834.79	10136.72
1.56	Encr Ex 100	1	9862.68	10239.98
1.48	Encr Ex 100	1	9970.88	10370
1.38	Encr Ex 100	1	9980.15	10550
1.33	Encr Ex 100	1	9977.43	10532.86
1.29	Encr Ex 100	1	9944.91	10465
1.25	Encr Ex 100	1	979	10333.67
1.21	Encr Ex 100	1	9741.71	10299.59
1.15	Encr Ex 100	1	9788.61	10217.16
1.09	Encr Ex 100	1	9832.74	10227.55
1.00	Encr Ex 100	1	9883.51	10262.27
0.92	Encr Ex 100	1	9891.47	10583.58

FLOW DATA

Flow Title: New Existing Cond Study Q for 100yr
Flow File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SW WMP\Wmp_UT.f10

Flow Data (cfs)

River	Reach	RS	Existing-100yr	Encr Ex 100
Unnamed Trib	Reach 1	3.84	3300	3300
Unnamed Trib	Reach 1	3.65	6500	6500
Unnamed Trib	Reach 1	2.69	8400	8400
Unnamed Trib	Reach 1	1.99	9700	9700

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Unnamed Trib	Reach 1	Existing-100yr		Known WS = 1532.1
Unnamed Trib	Reach 1	Encr Ex 100		Known WS = 1533.1

GEOMETRY DATA

Geometry Title: New Existing Cond Geo for 100yr
Geometry File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SW WMP\Wmp_UT.g04

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 3.84

INPUT
Description:
Station Elevation Data num= 134

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9547.62	1632	9553.35	1631.83	9575.75	1631.15	9580.03	1631.02	9581.49	1630.99
9596.35	1630.8	9601.38	1630.78	9605.66	1630.72	9640.94	1630.1	9641.66	1630.09
9645.57	1630	9648.99	1629.98	9649.33	1629.97	9649.83	1629.96	9650.36	1629.94
9650.92	1629.9	9651.68	1629.91	9654.59	1629.85	9656.59	1629.84	9705.05	1629.11
9710.53	1629.1	9713.24	1629.1	9714.01	1629.09	9715.07	1629.07	9718	1629.06
9721.33	1629	9724.03	1629.04	9724.6	1629.03	9726.16	1629.01	9726.22	1629.01
9726.29	1629	9728.04	1628.95	9729.54	1628.92	9730.04	1628.9	9731.77	1628.82
9732.79	1628.8	9733.11	1628.84	9735.34	1628.74	9737.83	1628.7	9739.64	1628.72
9740.21	1628.7	9742.5	1628.76	9746.82	1628.85	9747.76	1628.85	9752.39	1628.9
9754.89	1628.8	9756.14	1628.82	9757.47	1628.81	9776.96	1628.72	9778.11	1628.71
9779.25	1628.7	9779.46	1628.74	9781.55	1628.85	9783.39	1628.88	9786.22	1628.88
9793.09	1628.8	9795.13	1628.83	9802.11	1628.67	9810.66	1628.48	9821.08	1628.2
9827.94	1628	9838.5	1627.71	9884.12	1626.7	9885.02	1626.68	9886.31	1626.7
9887.55	1626.7	9888.66	1626.73	9890.64	1626.68	9892.03	1626.67	9892.85	1626.6
9894.31	1626.6	9895.79	1626.54	9908.25	1626.34	9920.43	1626.14	9921.69	1626.1
9926.77	1626	9928.9	1626	9930.36	1625.95	9932.06	1625.87	9970.95	1625.45
9978.04	1625.4	9980.97	1624.77	9984.1	1624	9988.54	1622.84	9990.86	1622.31
9991.24	1622.2	9992.08	1622	9992.12	1621.98	9992.19	1621.96	9992.32	1621.93
9992.66	1621.8	9993.14	1621.71	9996.1	1621.71	10000	1621.7	10000.03	1621.69
10008.18	1621.6	10008.47	1621.68	10009.24	1622	10011.12	1622.79	10013.77	1624
10018.17	1625.8	10019.37	1626.11	10037.26	1625.29	10047.9	1624.96	10049.44	1624.92
10051.35	1625.2	10059.96	1626	10067.24	1626.72	10073.87	1627.44	10080.74	1627.6
10094.49	1627.7	10100.26	1627.79	10101.32	1627.8	10105.66	1627.84	10109.98	1627.91
10110.32	1627.9	10110.93	1627.92	10115.06	1628	10120.43	1628.15	10123.11	1628.16
10132.44	1628.4	10168.68	1629.08	10170.63	1629.09	10172.51	1629.1	10174.4	1629.11
10176.49	1629.1	10183.65	1629.25	10201.66	1629.61	10221.63	1630	10263.62	1630.84
10276.28	1631	10282.65	1631.07	10291.14	1631.18	10347.2	1632		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9547.62	.06	9978.04	.045	10019.37	.055	10073.87	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.04	10019.37	285.32	272.62	229.06	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 3.79

INPUT
Description:
Station Elevation Data num= 104

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9590.27	1628.3	9602.9	1628	9604.16	1627.98	9620.36	1627.76	9624.4	1627.7
9665.5	1627.2	9684.24	1626.88	9698.29	1626.67	9709.3	1626.5	9721.48	1626.33
9738.26	1626	9769.44	1625.62	9776.29	1625.54	9778.56	1625.52	9784.03	1625.48
9789.61	1625.4	9795.37	1625.37	9836.76	1624.88	9868.14	1624.54	9880.82	1624.39
9886.25	1624.3	9895.46	1624.23	9908.67	1624.12	9918.2	1624	9933.29	1623.72
9945.92	1623.5	9946.84	1623.52	9949.22	1623.61	9953.71	1623.69	9956.7	1623.75
9974.88	1624	9978.6	1624	9978.8	1624	9980.05	1624	9981.73	1624
9982.48	1624	9983.25	1623.99	9983.71	1623.99	9991.13	1622.6	9994.01	1622.06
9994.35	1622	9995.06	1621.86	9996.25	1621.64	9996.4	1621.65	9997.57	1621.82
10000	1621.5	10012.17	1621.19	10014.72	1621.05	10018.99	1622	10027.25	1623.8
10027.65	1623.88	10028.31	1624	10029.5	1624.23	10029.62	1624.31	10030.41	1624.23
10033.95	1624.17	10038.65	1624.02	10043.77	1624	10044.76	1624	10048	1624
10049.51	1624	10049.59	1624	10050	1624	10057.25	1624	10061.47	1624
10061.84	1624	10063.95	1623.99	10065.32	1623.97	10065.69	1624	10065.82	1623.96
10069.25	1623.55	10074.63	1622.97	10079.66	1623.69	10081.88	1624	10082.28	1624.07
10083.24	1624.2	10084.33	1624.01	10084.4	1624	10085.07	1624	10102.87	1623.77
10104.08	1623.78	10104.98	1623.8	10105.83	1623.8	10107.51	1623.91	10108.72	1624
10116.25	1624.48	10121.37	1624.89	10127.22	1625.32	10134.88	1625.91	10136.79	1625.99
10139	1626.15	10139.5	1626.17	10140.3	1626.2	10141.38	1626.21	10146.87	1626.22
10169.18	1626.52	10175.02	1626.66	10181.3	1626.82	10188.18	1627	10201.25	1627.32
10225.71	1628	10261.38	1629.3	10280.67	1630	10281.16	1630		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9590.27	.06	9983.71	.045	10029.62	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.71	10029.62	184.88	180.77	123.11	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 3.76

INPUT
Description:
Station Elevation Data num= 121

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9481.34	1626.9	9484.55	1626.93	9487.74	1626.92	9489.59	1626.91	9490.07	1626.91
9490.31	1626.9	9491.64	1626.9	9492.64	1626.9	9493.46	1626.89	9494.1	1626.89
9519.07	1626.7	9523.06	1626.65	9528.4	1626.63	9535.47	1626.6	9540.35	1626.59
9541.28	1626.6	9687.7	1626	9705.14	1626	9711.12	1626	9734.19	1626
9741.38	1626	9744.75	1626	9767.63	1626	9770.85	1626	9771.24	1626
9772.51	1626	9772.92	1626	9779.47	1625.89	9792.03	1625.7	9800.72	1625.58
9814.95	1625.3	9820.17	1625.25	9824.5	1625.17	9830.17	1624.97	9835.05	1624.79
9837.91	1624.7	9840.16	1624.6	9857.01	1624	9885.39	1622.83	9885.89	1622.81
9885.9	1622.8	9886.69	1622.8	9896.59	1622.73	9900.58	1622.68	9922.74	1622.61
9943.75	1622.5	9962.49	1622.4	9962.54	1622.38	9965.43	1622.46	9967.81	1622.57
9970.42	1622.6	9973.45	1622.72	9977.47	1622.79	9978.33	1622.81	9981.25	1622.86
9981.36	1622.8	9982.03	1622.79	9982.58	1622.73	9987.12	1622	9997.13	1620.49
9997.9	1620.4	9999.17	1620.2	9999.5	1620.15	10000	1620.4	10003.52	1620.64
10004.82	1620.8	10007.48	1621.13	10014.38		162210015.32	1622.12	10015.7	1622.16
10016.45	1622.3	10018.57	1622.51	10024.03	1623.17	10024.64	1623.17	10027.96	1623.19
10030.03	1623.2	10031.92	1623.16	10033.79	1623.15	10035.09	1623.16	10036.49	1623.15
10037.98	1623.1	10039.52	1623.07	10084.38	1623.69	10086.07	1623.69	10094.76	1623.57
10094.95	1623.6	10094.97	1623.54	10096.42	1623.31	10104.61		162210107.02	1621.63
10107.67	1621.5	10108.93	1621.33	10111.22	1621.69	10112.24	1621.86	10113.25	1622
10119.93	1623.1	10121.86	1623.35	10129.04	1623.32	10152.87	1623.16	10162.89	1622.01
10163.04		162210163.08	1621.99	10166.37	1621.61	10173.52	1621.96	10174.54	1622
10183.96	1622.4	10184.87	1622.48	10186.03	1622.54	10188	1622.65	10191.13	1622.65
10194.32	1622.6	10202.68	1622.62	10208.96	1623.2	10217.57		162410221.14	1624.33
10227.03	1624.8	10240.39	1625.25	10263.15		162610276.76	1626.51	10316.03	1628
10317.87	1628.1								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9481.34	.06	9981.25	.04	10024.03	.06	10094.97	.04	10121.86	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.25	10024.03	161.68	172.64	149.88	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 3.73

INPUT
Description:
Station Elevation Data num= 131

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9675.66	1625.9	9681.38	1625.93	9686.88	1625.9	9690.76	1625.83	9705.38	1626
9708.82	1626	9715.78	1626	9718.92	1626	9721.46	1626	9740.16	1626
9742.37	1626	9747.58	1626	9750.02	1626	9752.7	1626	9756.1	1626
9775.89	1626	9778.51	1626	9780.26	1626	9817.55	1625.48	9828	1625.42
9833.79	1625.4	9840.61	1625.29	9906.56	1624.49	9906.62	1624.49	9906.74	1624.48
9908.68	1624.3	9915.06	1624	9919.71	1623.68	9919.77	1623.67	9923.4	1623.34
9927.8	1622.9	9929.09	1622.82	9930.83	1622.74	9938.25	1622	9947.01	1621.03
9957.4	1620	9960.71	1619.66	9960.9	1619.64	9961.62	1619.75	9963.53	1620
9967.01	1620.5	9970.21	1620.98	9972.1	1621.24	9973.52	1621.46	9980.55	1621.67
9986.19	1621.8	9990.94	1620.75	9992.11	1620.47	9994.03	1620	9995.4	1619.68
9998.78	1618.9	10000	1619.11	10000.85	1619.34	10002.13	1619.51	10002.99	1619.63
10005.65		162010010.78	1620.7	10011.71	1620.84	10014.25	1621.28	10017.34	1621.81
10020.12	1621.8	10020.47	1621.83	10021.25	1621.83	10025.98	1621.87	10028.12	1621.85
10032.44	1621.8	10037.65	1621.79	10043.68	1621.66	10046.05	1621.63	10051.89	1621.57
10052.45	1621.6	10056.95	1621.48	10058.94	1621.37	10059.12	1621.35	10059.27	1621.34
10059.44	1621.3	10062.48	1621.21	10063.22	1621.18	10064.18	1621.14	10064.98	1621.1
10069.41	1620.9	10071.32	1620.83	10075.12	1620.67	10079.93	1620.42	10081.33	1620.36
10082.65	1620.3	10088.69	1619.94	10089.18	1619.94	10090.07	1620.05	10092.89	1620.27
10106.65	1621.2	10106.94	1621.29	10107.41	1621.28	10108.77	1621.41	10110.32	1621.55
10111.43	1621.6	10112.53	1621.6	10113.35	1621.62	10113.97	1621.63	10114.62	1621.64
10135.94	1621.6	10142.25	1621.46	10146.16	1621.37	10154.5	1620.5	10160.76	1620
10162.65	1619.8	10163.42	1619.78	10164.78	1619.86	10165.38	1619.96	10165.7	1619.95
10172.18	1619.5	10175.11	1619.31	10181	1619.02	10181.12	1619.01	10181.27	1619
10181.38		161910188.17		162010190.13	1620.34	10192.94	1620.9	10195.23	1620.9
10205.45		162210205.88		162210206.86	1622.11	10210.98	1622.5	10222.39	1623.46
10238.49	1623.9	10243.06		162410249.27	1624.32	10256.25	1624.59	10287.51	1626
10300.75	1626.4								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9675.66	.06	9986.19	.04	10017.34	.06	10111.43	.06	10146.16	.045
10192.94	.055								

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

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       9986.1910017.34            177.18  267.76  153.48              .1        .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 3.70

INPUT
Description:
Station Elevation Data     num=       78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9655.33  1624.4 9669.94 1624.32 9672.79 1624.31 9674.01 1624.31  9681.2 1624.29
 9696.22  1624.3 9701.69 1624.25 9705.42 1624.24 9714.58 1624.21    9739 1624.15
 9785.01    1624 9785.03    1624 9785.05    1624 9785.09    1624 9785.28    1624
 9786.59    1624 9787.43 1623.94 9792.42 1623.59 9801.24 1623.11 9807.49 1622.75
 9820.35    1622 9823.02 1621.83 9845.62    1620 9850.17 1619.54 9851.38  1619.4
 9864.06  1619.6 9876.28 1619.82 9879.85 1619.88 9881.47 1619.91 9882.01 1619.93
 9886.21    1620 9900.86 1620.02 9900.87 1620.02 9902.51 1620.03 9903.23 1620.03
  9904.8    1620 9923.72    1620 9929.04 1619.89 9929.34 1619.88 9929.69 1619.87
 9930.05  1619.9 9930.74 1619.84 9931.36 1619.83 9932.25 1619.81 9933.29 1619.78
 9934.54  1619.8 9940.84 1619.59 9964.99    1619 9969.09 1618.87 9977.45 1618.61
 9979.89  1618.5 9980.22 1618.47 9980.88 1618.37 9982.69    1618 9988.63 1616.72
  9992.2    1616 9994.05 1615.65 9994.63 1615.54   10000  1615.6 10001.9 1615.71
10005.12  1615.810005.34 1615.8710005.55    161610012.52 1617.5310014.51    1618
10015.25  1618.210027.24 1619.7610029.42    162010032.77 1620.38 10040.9 1621.22
10047.39    162210051.06 1622.4110053.68  1622.710062.22 1623.0810081.72    1624
10127.18  1625.510136.11 1625.81 10141.1 1625.97

Manning's n Values         num=        4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9655.33     .06 9923.72     .06 9979.89    .04510053.68    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9979.8910053.68            195.28  254.18  297.16              .1        .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 3.65

INPUT
Description:
Station Elevation Data     num=       87
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9713.47  1623.9 9731.48 1623.46 9738.83 1623.26 9744.52 1623.11 9776.96    1622
  9787.4  1621.6 9792.39 1621.47 9793.97 1621.41 9794.59 1621.36 9797.03 1621.12
 9810.45    1620 9815.51 1619.37 9821.56 1618.62 9826.34    1618 9832.98 1617.19
 9833.66  1617.1 9835.59 1617.27 9850.19 1617.89 9851.47 1617.95 9851.91 1617.97
 9852.08    1618  9852.2 1617.98 9852.31 1617.98 9852.95    1618 9866.35 1618.11
  9872.5  1618.1 9890.58    1618 9904.88 1617.73 9905.67 1617.72 9906.66 1617.71
 9907.83  1617.7 9909.12 1617.67 9911.04 1617.64 9912.27 1617.63 9913.33 1617.61
 9925.81  1617.4 9927.77 1617.38 9929.08 1617.35 9932.79 1617.27 9940.27 1617.09
 9945.35    1617 9945.57 1616.97 9947.32 1617.11 9960.13    1618  9962.1 1618.14
 9965.17  1618.3 9965.28 1618.31 9965.62 1618.23 9966.77    1618 9974.72  1616.3
 9976.01    1616 9976.38 1615.92  9980.5 1615.07 9981.24  1615.1 9986.72 1615.32
  9991.3  1614.9 9992.81 1614.65 9993.77 1614.48   10000 1614.2610000.48 1614.26
10007.75    161410008.25 1613.9810009.22 1613.9710009.36 1613.95 10009.4 1613.95
10009.88  1614.110017.21    161610022.28 1617.2410025.26    161810026.93 1618.42
10028.42  1618.610028.68 1618.6110029.36 1618.6510032.71 1618.5710034.18 1618.54
10093.87  1619.810101.48    162010104.01 1620.09 10157.3 1621.89 10157.4 1621.89
10157.65  1621.910163.65    162210164.22    162210167.89 1622.0210213.54 1623.22
10226.53  1623.5   10242    1624

Manning's n Values         num=        4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9713.47     .06 9866.35     .06 9965.28    .04510029.36    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9965.2810029.36            198.65  205.64  187.36              .1        .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 3.61

INPUT
Description:
Station Elevation Data     num=       54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9825.74    1622 9880.74  1620.1 9882.83 1620.01 9883.22    1620 9904.72 1618.89
  9909.6 1618.74 9912.48  1618.3 9913.69 1618.22 9914.26 1618.17 9917.09    1618
  9948.8 1616.23 9953.45    1616    9959 1615.67 9962.52 1615.48 9967.86 1615.64
 9979.07 1615.95 9981.37  1615.2  9985.3    1614 9988.92 1612.84 9991.59    1612
 9993.25 1611.42 9993.66  1611.310001.69 1611.9210002.35 1611.9710002.49 1611.98
10002.56 1611.9910002.72    161210002.79 1612.0110002.84 1612.01 10002.9 1612.01
10006.32 1612.28   10007  1612.310007.06 1612.3410010.84 1613.0410015.61    1614
10021.56 1615.1410023.82  1615.510024.19 1615.6210025.84    161610026.77 1616.17
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10028.21 1616.4510034.05  1616.310093.37 1617.51 10094.6 1617.5110101.45 1617.79
10107.32    1618 10119.8  1618.3 10126.4 1618.5110129.49 1618.5910164.86    1620
10189.14 1620.7410198.98    162110219.07 1621.6910222.91 1621.81

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9825.74     .06 9979.07    .04510028.21    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9979.0710028.21           390.89   389.3  386.91             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.54

INPUT
Description:
Station Elevation Data    num=      87
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9832.04    1622 9832.05    1622 9866.89 1620.82 9892.47    1620 9912.33 1618.81
 9926.26    1618 9939.21  1617.1  9941.3 1616.94 9943.94 1616.75 9946.26 1616.57
 9954.21    1616 9955.05 1615.99 9955.06 1615.99 9955.11 1615.99 9959.09 1615.46
 9971.85    1614 9977.15 1613.02 9979.33 1612.45 9979.81 1612.37 9981.48    1612
 9991.46  1610.2 9992.52    1610 9992.92 1609.94 9993.18 1609.89 9999.18    1610
 9999.42    1610 9999.45    1610   10000    161010003.75    161010004.36    1610
10005.93    1610 10007.7    161010008.63 1610.0610012.15 1610.2210012.65 1610.25
10020.81  1611.310027.35    161210033.89    161310035.57 1613.2910038.15 1613.68
 10038.3  1613.710040.99 1613.9210041.29 1613.9410042.62    161410043.84    1614
10046.26  1613.910048.79 1613.7710052.42 1613.8310053.62 1613.8210054.17  1613.8
10054.86  1613.810075.39 1613.7710084.07 1613.7810099.34    161410102.85    1614
 10105.8    1614 10114.6 1613.8610115.52 1613.8510122.68 1613.8210133.95 1613.68
10134.27  1613.710134.44 1613.6810134.51 1613.6810134.56 1613.6810140.57    1614
10144.52  1614.210149.28 1614.5210158.52 1614.6410160.18 1614.6510162.26 1614.67
10165.31  1614.710169.11 1614.8110175.79 1614.9710189.17 1615.2810189.19 1615.28
10193.93  1615.810195.26 1615.9610195.63    161610201.93 1616.5710221.65    1618
10221.69    161810221.74    161810239.22 1618.9410244.72 1619.1910257.25 1619.59
10260.81  1619.710268.12 1619.99

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9832.04     .06 9955.05    .04510042.62    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9955.0510042.62           435.96  440.05  442.16             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.46

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9842.22  1617.9 9861.63 1617.15 9889.72    1616 9925.71 1614.04 9926.49    1614
 9931.41  1613.7 9946.39 1612.61  9948.8 1612.35 9950.56 1612.16 9952.02    1612
 9959.18  1611.2 9964.66 1610.64 9969.13 1610.23 9971.96    1610 9976.94 1609.61
 9979.06  1609.4 9980.67 1608.81 9982.76    1608 9986.86  1606.4 9987.92    1606
 9988.43  1605.8 9989.12 1605.57 9989.96 1605.47 9990.94 1605.26   10000 1605.37
10005.42  1605.510009.65  1605.610010.06  1605.710010.85 1605.8810011.07 1605.94
10011.17    160610011.21 1605.9710011.23 1605.98 10011.3    160610012.09 1606.19
10019.54    1608 10021.1  1608.410027.91    161010029.48 1610.4210030.23 1610.66
 10030.3  1610.710030.36 1610.6610030.46 1610.6710030.55 1610.6510034.43 1610.81
10035.73  1610.8 10106.9 1610.54 10110.9 1610.5810110.91 1610.5810110.96 1610.58
10110.98  1610.610112.79 1610.9710113.98 1611.1910119.67    161210134.56  1613.4
10141.54    161410153.74    161510165.85    161610171.58 1616.4210181.15  1617.1
 10192.5    161810196.91 1618.2710198.61 1618.35 10200.7 1618.4610211.23 1619.16
10228.12    162010229.27 1620.03

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9842.22     .06 9979.06    .045 10030.3    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9979.06 10030.3           267.6  296.32  322.93             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.40

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9781.06    1616 9822.91 1614.86 9854.08    1614 9869.67 1613.19 9872.55 1613.09
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 9877.05  1612.9  9883.4 1612.62 9896.85    1612 9912.11 1611.34 9913.25 1611.29
 9914.75  1611.1 9916.06 1610.91 9917.43 1610.67 9918.22 1610.54 9918.76 1610.47
 9922.45    1610 9926.53 1609.41 9930.32 1608.89 9939.23 1609.09 9968.21 1608.92
 9970.35  1608.8 9970.57 1608.76 9971.46 1608.56 9973.61    1608 9981.86 1606.16
 9982.41    1606 9983.01 1605.84 9983.21  1605.8 9984.73 1605.47  9987.2 1604.93
 9994.96  1604.6   10000 1604.3510003.63  1604.110006.33 1604.7110012.22    1606
10019.07  1607.510020.95 1607.9610021.82 1607.9810022.45    160810032.47 1608.15
10043.27  1608.310060.77 1608.5310064.37 1608.5810069.85 1608.6610076.75 1608.75
10085.89  1608.910096.09 1609.0310107.37 1609.1610118.92 1609.3110133.36 1609.51
10142.19  1609.610143.27 1609.8110144.07 1609.9110144.74    161010154.75 1611.41
10159.23    161210162.87 1612.4810174.31    161410182.95 1615.0910191.93    1616
10213.93  1617.910215.48    161810216.09 1618.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9781.06     .06 9970.35    .04510020.95    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9970.3510020.95           401.74  459.84  480.49              .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.31

INPUT
Description:
Station Elevation Data    num=      99
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9676.2    1614 9680.19 1613.76 9709.76    1612 9736.92 1610.19  9739.8    1610
 9742.92  1609.7 9764.99    1608 9768.82 1607.67 9770.17 1607.55 9772.58 1607.34
 9773.04  1607.3 9775.74 1606.88 9779.73 1606.25 9780.45 1606.13 9781.38    1606
 9782.88  1605.8  9783.5 1605.71 9787.85 1605.11 9791.87 1604.52 9793.53 1604.67
 9796.81  1604.9 9810.28    1606 9811.65 1606.11 9819.15 1606.68 9821.55 1606.85
 9824.44  1607.1 9835.38 1606.93 9840.19 1606.88 9850.46 1606.78 9856.89  1606.7
 9869.42  1606.6 9869.77 1606.61 9871.18 1606.67  9872.8 1606.73 9880.81 1607.04
 9895.41  1607.6 9899.08 1607.74 9901.23 1607.83 9902.48 1607.88 9905.63 1607.99
 9906.41    1608  9908.4 1608.08 9909.55 1608.12 9910.37 1608.06 9911.46    1608
 9924.21    1607 9928.31 1606.68 9931.42 1606.87 9948.97 1607.99 9959.39  1607.3
 9973.52  1606.3 9973.89 1606.25  9974.8    1606 9977.21 1605.38 9983.02    1604
 9984.35  1603.7 9991.03 1602.03 9991.36 1602.02 9994.22    1602 9994.47    1602
 9994.64    1602 9995.28    1602 9998.94 1601.99 9999.14 1601.98 9999.48 1601.98
   10000    160210001.81 1601.9710002.81 1601.95 10005.6 1601.9310007.24 1601.91
 10007.3  1601.910007.44 1601.9510007.49 1601.9710007.51 1601.97 10007.6    1602
10011.16  1602.810013.02 1603.2810013.89 1603.4810015.73    160410017.05 1604.35
10018.49  1604.710021.06 1605.27 10023.7 1605.4310026.04 1605.5410030.24 1605.79
10034.49    160610039.47 1606.3110041.37 1606.3910044.87 1606.5510054.05 1607.04
10054.74  1607.210060.93    160810075.76 1609.8710076.85    161010077.71 1610.11
 10086.5  1611.110093.46    161210111.83 1613.3910117.39 1613.82

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
  9676.2     .06 9824.44     .06 9948.97    .04510021.06    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9948.9710021.06           366.29  396.52  408.42              .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.24

INPUT
Description:
Station Elevation Data    num=     103
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9673.96  1611.8 9678.05 1611.57 9692.16 1610.84 9699.23 1610.46 9703.12 1610.25
 9708.57    1610 9712.93 1609.78 9714.11 1609.72 9717.62 1609.42 9723.36 1608.95
 9726.71  1608.7 9729.48 1608.48 9734.86    1608 9750.09 1606.62 9758.23    1606
 9766.89  1605.3 9776.95 1604.62 9783.83 1604.51 9797.28 1604.37 9803.88 1604.29
 9808.36  1604.2 9811.41  1604.2 9813.04 1604.18 9829.43 1604.11 9830.32  1604.1
  9831.2  1604.1 9843.48    1604 9843.89    1604 9844.27    1604 9844.51    1604
 9844.71    1604 9845.24 1604.01 9853.85    1604 9854.05 1604.01 9854.31 1604.01
 9854.61    1604    9855 1604.01 9863.17 1604.01 9863.54 1604.01 9864.07 1604.01
 9864.97    1604 9866.17 1604.03  9872.5 1604.04  9873.7 1604.05 9876.09 1604.07
 9878.41  1604.1 9879.64 1604.08 9881.25 1604.06 9881.32 1604.06 9881.97 1604.06
 9883.98  1604.1 9887.35 1604.05    9890 1604.04  9891.9 1604.03 9893.38 1604.03
 9893.98    1604  9899.8 1604.04 9904.24 1604.03 9910.18 1604.03 9928.59    1604
 9928.85    1604 9933.04 1603.91 9938.01 1603.83 9939.58  1603.8 9941.29 1603.78
  9943.9  1603.7 9948.55 1603.66 9959.88 1603.48 9973.11 1603.28 9973.99 1603.11
 9975.75  1602.8 9979.71    1602 9987.59 1600.51 9988.71 1600.29  9990.2    1600
 9990.23    1600 9990.28    1600 9990.31    1600 9990.36    1600 9990.39 1599.99
   10000  1599.510001.57 1599.1910007.25 1598.77 10010.5 1599.7510011.11 1599.93
 10011.2    160010011.36    160010011.59 1600.0710018.18    160210022.16 1603.22
10024.71    160410031.27 1605.9710031.38    160610031.67 1606.0910037.96    1608
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10039.98  1608.610040.75 1608.78 10042.5 1608.9210045.83 1609.2910051.54    1610
10064.92    161110066.63 1611.0610082.61 1611.91

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9673.96     .06 9973.11    .04510037.96    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9973.1110037.96           445.59  479.85  469.13             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.15

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9820.3    1608 9820.79 1607.94 9821.15 1607.92 9822.35 1607.87 9839.11 1607.07
 9844.55  1606.1 9844.88    1606 9845.28 1605.93  9855.6    1604  9862.8 1602.65
 9866.24    1602 9868.49 1601.62 9870.18 1601.27 9872.04 1600.93 9887.02 1600.67
 9910.46  1600.3 9918.28 1600.12 9920.44 1600.09 9921.42 1600.08 9922.06 1600.07
 9922.61  1600.1 9923.08 1600.04 9925.55    1600 9927.02 1599.92 9928.01 1599.86
 9929.86  1599.8 9938.74 1599.28 9955.09 1598.41 9964.39 1599.14  9968.9 1599.49
 9973.61  1598.9 9980.11    1598 9982.26 1597.73 9982.89 1597.65 9984.32 1597.45
 9989.37  1596.8 9994.68 1596.49 9997.69 1596.35 9997.77 1596.35 9998.95 1596.29
   10000  1596.210004.74 1596.0810006.72 1596.0210006.76 1596.0110006.79 1596.02
 10009.7  1596.810012.15 1597.41   10013 1597.6210013.35  1597.710014.43    1598
10015.54  1598.310021.82    160010022.74 1600.1710022.97 1600.25 10028.6 1600.29
10031.38  1600.310038.87 1600.3510046.79 1600.4110048.54 1600.4310054.87 1600.48
10069.19  1601.2 10076.5 1601.5410084.17 1601.92 10097.2 1601.5210105.26 1601.28
10113.95    160110121.18 1601.7610123.51    160210124.89 1602.1410144.88    1604
10167.81  1605.810171.27    160610171.58 1606.02

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
  9820.3     .06 9925.55     .06  9968.9    .04510022.97    .05510084.17    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9968.910022.97           273.66  262.05  262.19             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.10

INPUT
Description:
Station Elevation Data    num=      60
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9880.28  1606.7 9895.92    1606 9917.66 1604.89 9936.16    1604 9948.43 1603.09
 9953.69  1602.8 9955.79 1602.75 9957.62 1602.49 9960.25    1602 9967.79 1600.37
 9969.79    1600 9977.62 1598.33 9978.58 1598.13 9979.22    1598 9981.06 1597.66
 9988.42    1596 9993.95 1594.82 9995.65 1594.45   10000 1594.4710002.27  1594.5
10019.23  1594.610019.43 1594.6510025.76    159610034.26 1597.8710035.08    1598
10035.44  1598.110035.56 1598.0910051.35 1598.5610052.61  1598.610053.19 1598.63
10092.88    159910110.75 1599.1710110.87 1599.1710111.06 1599.1510116.13 1599.29
10119.98  1599.310160.06 1599.5810161.97 1599.5510164.26 1599.5310166.12  1599.5
 10167.8  1599.510169.82 1599.44 10171.8 1599.3810174.38 1599.3310177.04  1599.3
10182.78  1599.210194.36 1599.0310204.43 1598.8610211.11 1599.62 10213.2 1599.85
10214.54    160010220.38 1600.6310232.75    160210255.08 1603.4910262.58    1604
10295.06    160610295.23    160610295.49 1606.01 10296.1 1606.0410308.93 1606.65

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9880.28     .06 9955.79    .04510035.44    .05510160.06    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9955.7910035.44           253.81  246.77  218.34             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.05

INPUT
Description:
Station Elevation Data    num=      87
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9849.61    1606 9850.27    1606 9861.43 1605.45 9891.18    1604 9904.39 1603.23
 9924.58    1602 9938.23 1601.02 9953.54    1600 9954.65 1599.92 9955.97 1599.83
 9957.53  1599.7 9964.22 1599.08 9974.23 1598.18 9974.43 1598.12 9974.98    1598
 9982.07  1596.1 9982.37    1596 9982.62 1595.93 9990.08    1594 9992.28 1593.42
 9997.43    1592 9997.52 1591.95 9998.05 1591.79 9998.27  1591.8 9998.35  1591.8
  9998.5  1591.8   10000 1591.910009.58    159210011.48 1592.0310013.48 1592.07
10021.26  1593.810021.92    159410022.27 1594.0810030.95    159610032.31 1596.34
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10032.48  1596.410033.45 1596.3510042.55    1596 10048.3 1595.7510052.63 1595.59
10058.63  1595.710073.06    159610081.34 1596.1710085.38 1596.2610091.67 1596.37
10092.53  1596.410097.91 1596.6610102.31  1596.910103.49 1596.9410119.44 1597.36
10121.09  1597.310123.29  1597.310126.39 1597.2510129.35 1597.2210133.19 1597.14
10137.53  1597.110140.94 1597.1110144.71 1597.1510149.62 1597.2410151.84 1597.26
10153.28  1597.310159.47 1597.4610163.13  1597.410166.31 1597.3410173.12 1597.24
10175.49  1597.210182.56 1597.0610182.82 1597.0910183.16 1597.1410187.19 1597.63
10188.31  1597.810188.92 1597.8610189.22 1597.8810189.34  1597.910189.53 1597.92
10190.17    159810197.29 1598.9510200.64  1599.410202.83  1599.710205.25    1600
 10206.1  1600.110215.66 1601.2510222.02    160210224.05 1602.2410238.91    1604
10259.04  1605.410263.88 1605.79

Manning's n Values         num=        4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9849.61     .06 9974.23    .04510032.48    .05510119.44    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9974.2310032.48            462.57  427.28  371.63              .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.97

INPUT
Description:
Station Elevation Data     num=       77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9714.04    1600 9716.35 1599.79 9719.13 1599.65 9727.11 1599.15 9735.06 1598.88
 9736.58  1598.8 9736.73 1598.82 9739.55  1598.6 9740.84  1598.5 9742.52 1598.34
 9743.71  1598.2 9746.07    1598 9760.52 1596.66 9767.82    1596 9771.97 1595.63
 9772.68  1595.6 9776.59 1595.61 9783.09 1595.68 9789.38 1595.72 9789.86 1595.72
 9794.24  1595.8 9797.25 1595.77 9799.42 1595.79 9799.93 1595.78 9859.86 1595.38
 9860.94  1595.4 9863.09 1595.36  9865.5 1595.34 9865.88 1595.34 9866.37 1595.34
 9878.95  1595.2 9880.14 1595.17 9881.22 1595.15  9885.3 1595.08 9890.82 1595.02
 9942.98  1594.4 9943.75 1594.35 9944.25 1594.35 9944.94 1594.34 9945.23 1594.34
 9945.69  1594.3 9945.91  1594.3 9946.11  1594.3 9955.14 1594.34 9969.97 1594.35
 9972.53  1594.4 9975.61 1594.35 9976.14 1594.22 9977.07    1594 9983.59 1592.18
 9984.19    1592 9984.71 1591.87 9985.11 1591.76 9988.58 1590.82   10000 1590.87
10001.75  1590.910008.75 1591.0210016.26 1591.0810016.67 1591.1510021.18    1592
10025.73  1592.910026.12 1592.9910039.09 1593.3710057.28 1593.8810057.36 1593.88
10058.06    1594 10058.1 1593.9610058.62    159410068.47  1594.810075.85 1595.38
10084.12    1596 10092.7 1596.7910107.53    159810123.03 1599.4410128.94    1600
10132.03  1600.210151.91    1602

Manning's n Values         num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
 9714.04     .06 9975.61    .04510026.12    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9975.6110026.12            258.19  218.23  157.54              .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.93

INPUT
Description:
Station Elevation Data     num=      121
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9624.57    1600 9636.55 1599.38 9664.53 1598.02 9665.18 1598.01 9665.67 1598.01
  9675.5    1598 9675.63    1598 9675.81    1598 9676.82 1598.01 9678.81    1598
 9679.31    1598 9680.21 1597.96 9683.21 1597.84 9703.33 1596.98 9719.13 1596.22
 9719.52  1596.2 9720.93 1596.21 9721.86 1596.21  9722.2 1596.21 9724.54 1596.14
 9728.67    1596 9733.41 1595.85 9733.96 1595.84 9734.06 1595.83 9734.66 1595.79
 9734.67  1595.8 9735.12 1595.76 9737.83 1595.82 9738.69 1595.74 9741.24 1595.62
 9744.38  1595.4    9748 1595.02 9749.76 1594.86 9750.66 1594.77 9752.52 1594.64
 9753.89  1594.6 9762.35 1594.21 9762.68  1594.2 9767.04    1594 9769.79 1593.84
 9770.34  1593.8 9770.92  1593.8 9772.39 1593.69 9790.42 1593.42 9790.61 1593.44
  9792.3  1593.4    9816 1593.36 9825.21 1593.31 9825.89 1593.31 9827.96 1593.29
 9829.09  1593.3 9830.92 1593.26 9831.87 1593.26 9843.02 1593.09 9850.52 1592.03
 9850.73    1592 9851.86 1591.84 9854.95 1591.42 9859.56 1590.79 9859.75 1590.79
 9878.33  1591.9 9879.42 1591.94 9879.66 1591.96 9880.64    1592 9880.85 1592.01
 9881.21    1592 9883.08 1592.23 9887.88 1592.68 9888.13  1592.7 9888.32 1592.71
 9888.77  1592.7 9913.68 1592.56 9913.93 1592.57  9914.1 1592.54 9916.69    1592
 9917.55  1591.8 9919.49 1591.32 9922.63 1590.76 9947.72 1591.15 9954.32 1591.25
 9963.42  1591.4 9968.22 1591.19 9992.93    1590 9999.27 1589.69   10000 1589.62
10001.36  1589.6 10006.3 1589.9210007.36    1590 10014.9 1590.5710016.79  1590.7
10018.89  1590.810021.72 1591.0310031.05 1591.76 10031.8 1591.8210033.19 1591.93
10033.22  1591.910034.94    1592 10035.7 1592.03   10036 1592.0310036.15 1592.03
10036.24    159210037.58    159210057.78 1592.0910084.83 1592.25 10088.4 1592.27
10089.12  1592.410094.67 1593.2410099.68    159410106.59 1595.0410112.82    1596
10117.63  1596.710125.96    159810136.76 1599.3510142.36    160010159.03 1601.57
10163.57    160210166.91 1602.2910174.84 1603.0710184.63    160410185.87 1604.11
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10186.86 1604.2

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9624.57	.06	9719.13	.06	9843.02	.045	9888.32	.06	9963.42	.045
10036	.055								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9963.42	10036	297.95	238.37	236.36	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 2.88

INPUT
Description:
Station Elevation Data num= 103

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9647.56	1595.8	9667.46	1594.43	9674.61	1594	9685.39	1593.48	9694.21	1593.07
9717.79	1592	9718.09	1592.01	9718.41	1592.02	9718.42	1592.01	9718.55	1591.99
9727.93	1590	9733.13	1588.9	9737.45	1588	9739.98	1587.44	9740.63	1587.28
9743.2	1587.5	9746.06	1587.77	9746.4	1587.81	9746.61	1587.83	9747	1587.91
9747.2	1588	9747.28	1588	9755.61	1589.96	9755.8	1590	9755.88	1590.02
9756.96	1590.3	9777.19	1590.61	9797.64	1590.92	9802.16	1590.48	9806.84	1590
9811.92	1589.5	9814.02	1589.28	9821.62	1589.43	9830.99	1589.6	9835.58	1589.96
9836.07	1590	9836.73	1590.05	9837.18	1590.08	9839.83	1590.3	9849.87	1591.13
9852.33	1591.1	9853.05	1591.11	9861.56	1591.09	9867.72	1591.08	9875.99	1591.01
9876.42	1591	9877.04	1591.01	9907.24	1591.09	9907.29	1591.1	9911.68	1590.78
9919.93	1590.2	9920.7	1590.1	9921.28	1590.06	9936.68	1591.47	9937.06	1591.5
9937.93	1591.5	9973.79	1590	9977.85	1589.81	9981.34	1589.62	9985.07	1589.13
9991.77	1588.3	9993.92	1588	9997.72	1587.5	10000	1587.15	10003.19	1586.76
10007.84	1586.8	10013.24	1586.88	10014.17	1587.05	10015.23	1587.29	10019.11	1588
10024.53	1589.1	10027.03	1589.55	10027.56	1589.67	10027.78	1589.67	10028.69	1589.67
10032.94	1589.7	10035.01	1589.79	10035.92	1589.8	10044.64	1589.89	10047.56	1589.86
10051.64	1589.9	10053.46	1589.82	10053.78	1589.82	10054.53	1589.96	10054.66	1589.99
10054.75	1590	10056.17	1590.23	10064.04	1591.68	10065.8	1592	10066.29	1592.08
10078.42	1594	10080.64	1594.33	10091.97	1596	10104.98	1597.88	10105.78	1598
10106.73	1598.1	10108.08	1598.18	10109.41	1598.26	10109.52	1598.27	10111.4	1598.63
10120.7	1599.2	10123.8	1599.53	10130.44	1600				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9647.56	.06	9717.79	.045	9756.96	.06	9849.87	.06	9981.34	.045
10027.56	.055								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.34	10027.56	237.82	234.26	230.56	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 2.84

INPUT
Description:
Station Elevation Data num= 127

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9636.75	1594	9648.26	1593.68	9649.08	1593.67	9650	1593.65	9665.67	1593.3
9677.27	1593	9684.09	1592.87	9717.64	1592.09	9720.99	1592	9754.36	1590.16
9756.7	1590	9757.43	1590	9758.91	1589.81	9763.93	1589.09	9767.23	1588.69
9770.22	1588.4	9774.99	1588	9777.07	1587.81	9777.84	1587.75	9783.73	1587.43
9784.71	1587.4	9787.56	1587.23	9790.24	1587	9795.92	1586.51	9798.98	1586.27
9800.3	1586.2	9801.37	1586.17	9802.15	1586.17	9802.99	1586.17	9803.27	1586.16
9803.61	1586.2	9804.24	1586.14	9806.64	1586.18	9807.8	1586.17	9810.38	1586.16
9811.44	1586.1	9812.71	1586.08	9814.62	1586	9816.72	1585.9	9818.33	1585.85
9820.05	1585.8	9823.22	1585.62	9828.18	1585.44	9832.24	1585.25	9835.88	1585.09
9837.34	1585	9840.21	1584.99	9841.86	1584.95	9845.15	1584.84	9846.49	1584.8
9848.8	1584.7	9850.37	1584.95	9852.49	1585.19	9858.06	1586	9859.01	1586.16
9864.07	1586.8	9874.47	1588	9877.45	1588.38	9877.59	1588.39	9884.14	1588.36
9887.92	1588.3	9888.94	1588.33	9889.85	1588.33	9909.35	1588.23	9911.21	1588.24
9914.4	1588.2	9919.85	1588.27	9923.44	1588.27	9925.08	1588.1	9925.97	1588
9929.34	1587.7	9932.78	1587.31	9935.71	1587.42	9940.12	1587.61	9951.11	1587.95
9952.2	1587.9	9954.05	1587.97	9954.81	1587.99	9954.94	1588	9955.42	1588.01
9955.59	1588	9956.66	1587.99	9957.24	1587.98	9960.27	1587.96	9969.89	1587.87
9971.16	1587.8	9972.8	1587.8	9974.37	1587.78	9976.84	1587.7	9979.24	1587.64
9980.38	1587.4	9986.6	1586	9992.31	1584.77	9993.38	1584.5	9996.14	1584.39
10000	1584.2	10006.63	1584.05	10006.99	1584.05	10008.03	1584.28	10010.3	1584.7
10011.7	158	10012.27	1585.13	10013.79	1585.46	10016.21	158	10020.64	1587.01
10022.77	1587.6	10023.52	1587.73	10030.45	1587.62	10058.12	1587.03	10059.61	1587.45
10061.73	158	10064.03	1588.81	10068.42	159	10074.25	1591.53	10075.77	1592
10080.63	1593.4	10082.82	1594	10087	1595.18	10089.73	1596	10091	1596.37
10096.63	159	10096.73	1598.03	10096.86	1598.02	10096.87	1598.02	10099.05	1598.17
10127	160	10127.28	1600.01						

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Manning's n Values          num=        5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9636.75     .06 9774.99    .045 9874.47     .06 9979.24    .04510023.52    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9979.2410023.52            330.86  324.24  320.86             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.77

INPUT
Description:
Station Elevation Data     num=       93
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9563.97    1590 9585.44 1589.67 9588.18 1589.61 9604.75 1589.36 9607.79 1589.32
 9611.94  1589.2 9616.25 1589.17 9621.38 1589.08 9627.73 1588.96 9636.04 1588.78
 9651.99  1588.4 9655.75 1588.36 9671.49    1588 9701.82 1587.15 9709.13 1586.96
 9715.01  1586.8 9722.74 1586.18    9725    1586 9737.34 1585.02  9748.8 1584.14
 9751.06  1584.2 9757.76 1584.45  9761.4 1584.53 9767.38 1584.69 9800.45 1585.91
 9801.14  1585.9 9801.42 1585.94  9801.6 1585.95 9801.74 1585.95  9801.9 1585.96
 9802.03  1585.9 9802.12  1585.9 9802.18  1585.9 9802.24  1585.9  9802.3 1585.98
 9803.11    1586 9803.12    1586 9803.42    1586 9807.85 1586.14 9810.04 1586.17
 9814.25  1586.1 9817.11  1586.1 9821.57 1586.07 9825.61    1586 9826.12 1585.99
 9828.87  1585.9 9831.01 1585.92 9841.38  1585.8 9850.35 1585.77 9855.73 1585.73
 9859.47  1585.7  9937.5 1585.82 9942.43 1585.83  9944.1 1585.85 9947.57 1584.84
 9948.81  1584.4 9950.34    1584 9951.43 1583.65 9957.32    1582 9957.61 1581.89
 9957.81  1581.8 9957.86 1581.84 9958.34 1581.84 9960.84  1581.8 9961.54 1581.88
 9961.98  1581.8 9962.61 1581.88 9969.65    1582 9994.64 1582.64 10005.8 1582.88
10006.98  1582.910011.27 1583.3310018.63    158410022.36 1584.3210025.81 1584.61
10028.97  1585.3 10030.9 1585.7710031.94    158610032.62 1586.110040.61    1588
10047.46  1589.510049.38    159010050.79 1590.32 10058.1    159210071.16 1593.81
10072.45    159410074.61 1594.2510088.12 1595.7410090.45    159610094.34 1596.47
10098.38  1596.910100.05    159710133.44    1598

Manning's n Values          num=        5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9563.97     .06 9701.82    .045  9801.9     .06  9944.1    .04510047.46    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9944.110047.46            178.45  226.63  231.52             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.73

INPUT
Description:
Station Elevation Data     num=      134
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9463.49  1589.9 9484.85 1589.49 9492.23 1589.36    9514 1588.94 9549.49 1588.36
  9555.6  1588.3  9571.4    1588 9574.83 1587.94 9593.73 1587.58 9605.41 1587.34
 9607.99  1587.3 9635.62 1586.73 9669.54    1586 9669.64    1586 9674.65 1585.84
 9679.95  1585.4 9680.78 1585.33 9687.21 1584.79 9690.14 1584.55  9692.1 1584.38
 9692.79  1584.3 9696.66    1584  9696.7 1583.99 9696.77 1583.99 9696.93 1583.99
 9697.49    1584 9698.79 1583.97 9706.84 1583.85 9709.46 1583.79 9713.28 1583.71
 9718.99  1583.6 9725.83 1583.42 9731.54 1583.27 9732.78 1583.31 9734.69  1583.3
 9735.25  1583.3 9738.23 1583.41 9739.36 1583.42 9740.54 1583.44 9741.54 1583.47
 9743.14  1583.5 9746.63  1583.6 9749.49 1583.68 9751.98 1583.73 9753.19 1583.77
 9753.86  1583.8 9754.45  1583.8 9755.07 1583.81 9755.53 1583.83 9755.91 1583.83
 9756.25  1583.8 9756.48 1583.85 9756.68 1583.85 9757.04 1583.88 9757.34 1583.89
 9757.44  1583.9 9760.88 1583.89 9761.22  1583.9 9778.16 1583.88 9778.55 1583.89
 9785.18  1583.9 9792.64 1583.93 9802.12 1583.99 9802.18 1583.99 9802.98 1583.99
 9805.39    1584 9806.67    1584 9807.03    1584 9814.31 1583.95 9816.21 1583.92
 9817.82  1583.9 9820.75 1583.92 9831.76 1583.86 9850.99 1583.73 9853.61 1583.58
 9854.79  1583.5 9859.21 1583.18 9860.98 1583.05 9862.56 1582.95 9866.62 1582.61
 9870.14  1582.3 9872.98 1582.53  9874.1 1582.61 9876.55  1582.8 9880.01 1583.03
 9885.59  1583.4 9885.92 1583.36 9921.18 1582.35 9925.04 1582.32 9928.88 1582.33
 9940.59  1582.3 9975.04 1582.09 9980.86    1582 9983.02  1581.9 9986.22 1581.61
 9986.57  1581.5 9988.14 1581.13 9992.48    1580 9994.15  1579.6 9994.56  1579.5
 9995.37  1579.3 9995.94 1579.19   10000 1578.910003.56 1578.7710012.49  1578.3
10014.95    157910016.17 1579.32 10018.3    158010021.51 1580.9510024.84    1582
10027.31  1582.910028.721583.31910031.01    158410034.96 1584.91 10039.3    1586
10039.961586.13110045.34  1587.210049.51    158810055.42 1589.1810059.49    1590
10067.87 1591.6410069.65    159210071.85 1592.410076.06 1592.8910076.15 1592.89
10076.66 1592.8110076.83  1592.810077.43 1592.810081.55 1592.6910082.91 1592.64
10084.51 1592.6510095.58 1592.9610098.52    159310103.72 1592.88

Manning's n Values          num=        4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9463.49     .06 9831.76     .06 9983.02    .04510045.34    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
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       9983.0210039.96            128.19  200.52  336.66              .1        .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.69

INPUT
Description:
Station Elevation Data     num=      179
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
 9470.36     1590 9475.13 1589.88   9480.6 1589.74 9549.68     1588 9566.59  1587.7
  9664.6     1586 9690.07  1585.5 9692.13 1585.45  9693.4 1585.33 9705.98     1584
 9712.18   1583.4 9713.51 1583.29  9716.1 1583.05 9740.12 1583.03 9741.63 1583.02
 9774.21  1582.56  9779.8 1582.54 9781.16 1582.53 9781.96  1582.5 9786.38 1582.47
 9792.34  1582.25 9792.68 1582.25 9792.98 1582.24 9793.93  1582.2 9793.98 1582.23
 9796.45  1582.24 9800.72 1582.33 9802.84 1582.38 9804.21  1582.4     9806 1582.47
 9809.24  1582.53 9809.92 1582.53 9810.71 1582.54 9811.56  1582.6 9813.87 1582.58
  9855.4  1583.18 9858.23 1583.19 9859.83  1583.2 9862.42  1582.9 9868.74     1582
 9871.43  1581.56 9872.07 1581.49     9874  1581.3 9874.93  1581.2 9880.22 1581.74
 9883.14  1581.97 9883.42     1582 9886.31 1582.27 9888.45  1582.5  9888.5 1582.51
 9888.65  1582.48 9891.57 1582.31 9902.07 1582.13 9903.05  1582.1 9903.59 1582.07
 9907.48     1582 9909.54 1581.97 9910.47 1581.95 9913.91  1581.9 9924.29 1581.72
 9925.61  1581.79  9927.5  1581.9 9928.77 1581.96 9929.65     1582 9930.34 1582.02
 9930.83  1582.04 9943.18 1582.34     9957 1582.56  9961.7  1582.6 9965.02 1582.67
 9970.32  1582.74 9973.49  1582.8 9974.39 1582.59 9977.22     1582 9983.48 1580.51
 9985.42     1580 9987.84 1579.43 9988.27 1579.34 9990.32  1578.8  9991.6 1578.54
 9992.12  1578.48 9996.47     1578   10000 1577.2510009.46 1576.610009.65 1576.54
10011.58 1577.1810012.05 1577.3110013.97     157810018.77 1579.710019.75     1580
10020.68 1580.3210020.86  1580.4   10021 1580.4410021.62 1580.710024.12 1581.58
10024.54 1581.7210025.39 1581.69 10034.3  1581.3   10040 1581.110043.53 1580.95
10045.67 1580.8710052.79 1580.610053.32 1580.6110055.56 1580.710055.76 1580.66
10058.03 1580.7310060.44 1580.8910062.85     158110064.71 1581.110066.12 1581.18
10077.33     158210080.62 1582.2810081.66 1582.3110082.66 1582.310090.42 1582.76
10092.89 1582.9210094.77 1582.9610099.61     158310109.32   158310113.56 1583.02
10157.54 1583.5410169.13 1583.5610183.08 1583.6110212.48 1583.510214.86 1583.52
10217.38 1583.52 10217.4 1583.5210217.41 1583.5210222.22 1582.710223.56 1582.43
10224.28 1582.3110225.86     1582 10230.2 1581.1210231.35 1580.910235.99 1580.01
10236.74 1580.0110236.89 1579.9810243.49 1579.8410244.64 1579.810246.53  1579.8
10247.66 1579.7710251.12 1579.7310252.16 1579.7210252.53 1579.710255.02 1579.68
10255.86 1579.7310257.79 1579.8310258.68 1579.8710266.64 1579.810267.48 1579.87
10267.77 1579.8410268.39 1579.8710269.01 1579.8910271.04   158010278.77 1581.42
10280.16 1581.6410282.59     158210286.27 1582.5410290.25 1583.110297.13     1584
10306.46     158510307.53 1585.1110309.53 1585.3610312.68 1585.810314.45 1586.02
10331.78 1585.6610346.27 1585.3310356.46 1585.1110359.79   158510365.08 1584.91
10372.46 1585.1510381.35 1585.4410385.03 1585.5610386.91 1585.610388.52 1585.68
10389.93 1585.71 10398.9     158610423.55  1587.310437.84    1588

Manning's n Values         num=        6
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
 9470.36     .06 9859.83     .06 9973.49    .04510024.54    .05510217.41    .036
10290.25    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9973.4910024.54            210.07  264.16  263.43              .1        .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.64

INPUT
Description:
Station Elevation Data     num=      200
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
 9611.34   1589.9 9621.75 1589.42 9636.96 1588.65 9648.98     1588 9678.44 1586.69
 9687.01   1586.3  9688.8 1586.27 9689.67 1586.26 9689.83 1586.26  9692.2 1586.27
 9695.94   1586.3 9696.02 1586.27 9702.94 1586.25 9710.88 1586.22 9732.26 1586.13
 9759.53     1586 9772.28 1585.88 9773.25 1585.87 9773.85 1585.87 9774.65 1585.85
 9776.76   1585.8 9779.12 1585.77 9798.98 1585.53 9811.48 1585.34 9819.12  1585.2
 9826.95   1585.1 9833.02 1584.14 9833.49 1584.07 9833.62 1584.05 9833.92     1584
 9834.99   1583.8 9847.36     1582 9850.08 1581.56 9850.47  1581.5 9859.84 1581.26
 9868.11     1581 9873.52  1580.9 9876.91 1580.81  9879.3 1580.74 9887.63 1580.58
 9888.12   1580.6 9888.46 1580.56 9888.72 1580.56 9890.84 1580.52 9894.66 1580.29
 9896.32   1580.2 9899.27 1580.03 9899.33 1580.02 9899.66     1580  9905.6 1579.62
 9906.99   1579.5 9909.42 1579.67 9912.11 1579.82 9915.67     1580 9916.03 1580.02
 9916.11     1580 9916.25 1580.03 9916.49 1580.05 9917.06 1580.08 9920.52 1580.08
  9923.5   1580.1 9926.15 1580.07  9928.5 1580.06 9930.74 1580.04 9941.78 1580.17
 9968.94   1580.3 9970.25 1580.39 9971.63 1580.42 9972.25 1580.41 9973.16  1580.4
 9973.41   1580.4     9974 1580.31 9974.49 1580.27 9974.73 1580.26 9975.18 1580.07
 9975.36     1580 9979.32  1578.4 9979.58  1578.3 9980.38     1578 9980.83  1577.8
 9980.94   1577.7 9981.78 1577.41 9984.43 1576.35 9986.44  1576.2  9987.8 1576.07
 9988.86     1576 9990.25     1576 9994.67     1576   10000    157610007.48     1576
10009.62  1576.110011.71 1576.2910016.35  1576.610024.23 1577.7510026.01     1578
10037.17  1579.510041.12     158010045.39 1580.5410051.59 1581.3310052.11  1581.4
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10058.41  1580.610060.47 1580.3210063.07    158010063.77 1579.9210063.99 1579.89
10064.19  1579.910064.77  1579.810065.82 1579.6710069.34 1579.2610072.57 1578.88
10075.61  1579.110080.25 1579.4910082.27 1579.6510086.42    158010089.24 1580.25
10093.01  1580.610093.05 1580.5810119.02 1580.5110160.22 1580.8510162.49 1580.87
10164.21  1580.910165.52 1580.9110166.72 1580.92 10168.5 1580.9910170.58 1581.02
10172.85  1581.110173.72  1581.110174.62 1581.1210175.89 1581.1510176.99 1581.17
10178.25  1581.210182.83 1581.3310184.42 1581.3610187.54 1581.34 10187.8 1581.35
10191.03  1581.410191.04 1581.4210191.38 1581.4210191.43 1581.4310195.21 1581.46
10198.58  1581.510200.12 1581.4610226.14 1581.8710228.27    1582 10230.9 1582.09
 10231.5  1582.110232.61 1582.1110233.27 1582.1310234.93 1582.1810236.88 1582.21
10239.01  1582.310242.84 1582.3410245.26 1582.4510245.59 1582.4710245.89  1582.5
10247.23  1582.6 10249.3 1582.7110251.22 1582.8710254.27 1582.9510256.11 1583.07
10257.97  1583.110258.62 1583.1710259.44 1583.2110260.75 1583.24 10261.6 1583.27
10263.08  1583.310263.73 1583.3310264.86 1583.3610266.37 1583.4310269.61  1583.5
10270.01  1583.510270.62 1583.5110270.89 1583.5110272.78 1583.58   10273 1583.58
10274.61  1583.610274.92 1583.6310276.44 1583.6410279.49 1583.6910281.22 1583.71
10282.61  1583.7 10287.5  1583.810291.67 1583.8410293.45  1583.910294.82 1583.93
10295.23  1583.910296.05 1583.9610296.71 1583.9810297.71    1584 10304.4 1584.18
   10308  1584.310309.07 1584.2910310.31 1584.3210312.31  1584.410315.66 1584.49
10318.37  1584.610323.78 1584.8710327.72 1585.1510341.11    158610342.55 1586.09

Manning's n Values         num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9611.34     .06 9973.16    .04510052.11    .05510093.01    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9973.1610052.11            327.74  314.05   284.2             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.58

INPUT
Description:
Station Elevation Data     num=     145
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9693.43  1588.1 9694.74    1588  9714.4  1586.2 9716.52    1586 9717.07 1585.95
 9739.53    1584 9751.16 1583.55 9791.71    1582 9823.44 1580.82 9825.47 1580.75
 9825.62  1580.8 9825.94 1580.76 9827.99 1580.73 9840.64 1580.55 9846.34 1580.48
 9851.95  1580.4 9856.83 1580.33 9862.81 1580.24 9864.51 1580.21 9865.35  1580.2
 9878.21    1580 9891.25 1579.78 9892.32 1579.76 9894.45 1579.71 9895.09 1579.69
 9896.99  1579.7 9901.69 1579.52 9902.24 1579.51 9903.44 1579.55 9903.45 1579.55
 9931.67  1579.9 9933.44 1579.94 9934.18 1579.95 9934.66 1579.95 9935.34 1579.96
 9935.66    1580 9935.83 1579.97 9936.15 1579.97 9936.27 1579.98 9936.36 1579.98
 9936.43    1580 9938.42    1580 9939.76    1580 9958.81    1580    9962 1579.91
 9962.35  1579.9 9962.89  1579.9 9963.62 1579.89 9964.86 1579.86 9967.25 1579.82
 9972.13  1579.7 9972.62 1579.73 9972.68  1579.7 9973.52 1579.36 9976.65    1578
 9980.89  1576.2 9981.41    1576 9982.84 1575.42 9986.42    1574 9986.53 1573.89
 9986.57  1573.9 9986.71 1573.79 9987.08 1573.65 9994.39 1573.74   10000  1573.8
10003.56  1573.910013.86    157410015.24 1574.0210016.03 1574.0310017.78 1574.05
10019.19  1574.5 10020.6 1574.8610021.44  1575.110022.05 1575.2710022.49 1575.38
10022.74  1575.410024.94    157610026.68 1576.4910031.76    157810034.11 1578.73
10034.79  1578.910043.08 1578.8810056.54 1578.7510058.44 1578.2910059.03 1578.14
10059.67    157810061.46 1577.5610062.28 1577.3710068.03    157610068.91 1575.77
10069.39  1575.710069.56 1575.6210070.24  1575.710071.47 1575.8510071.96 1575.91
10072.76    157610079.17 1576.7910087.59 1577.8710090.57 1577.8810092.11 1577.86
10093.18  1577.9 10096.9 1577.8810103.26 1577.9610103.87 1577.9710104.28 1577.98
10104.68    157810106.53    157810158.38 1578.4610160.52 1578.4710165.58 1578.52
10171.82  1578.610175.41 1578.6110202.85 1579.0110202.99 1579.0210203.44 1579.04
10203.52    157910203.99 1579.0510204.83 1579.0710205.22 1579.0910211.79 1579.33
10213.86  1579.410217.85 1579.5810219.97 1579.6610223.64 1579.8310224.79 1579.81
10276.01  1579.810279.47 1579.7610279.73 1579.7610280.47 1579.7410290.41  1579.9
10295.83    158010325.49 1581.0310341.32 1581.6610341.58 1581.6910343.55 1581.93
 10343.8    158210344.34    158210350.33  1582.710361.52    1584 10365.3 1584.43
10368.83  1584.810373.16 1585.2710379.14    158610386.14 1586.8910392.76 1587.67

Manning's n Values         num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9693.43     .06 9972.62    .04510034.79    .05510079.17    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9972.1310034.79            323.76  326.08  295.37             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.52

INPUT
Description:
Station Elevation Data     num=     168
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9765.82  1587.3 9767.18 1587.37 9769.24 1587.41 9769.84 1587.31 9772.84 1586.83
 9778.12    1586 9781.74 1585.44 9784.45 1584.97 9789.64    1584 9798.39 1582.47
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 9800.89    1582 9804.31 1581.37 9812.12    1580 9821.23 1578.54 9824.43    1578
 9830.77    1577 9836.32    1576 9837.07 1575.86  9837.1 1575.85 9838.32 1575.86
 9841.19  1575.9 9842.21 1575.92 9842.83 1575.93 9843.42 1575.92 9858.88    1576
 9860.98    1576 9868.52    1576 9869.16    1576 9878.72 1576.56 9879.18 1576.58
  9882.7  1576.6 9885.82 1576.59 9899.54  1576.6 9900.59 1576.61 9902.12 1576.62
 9905.05  1576.6 9906.22 1576.61 9909.45 1576.58 9910.93 1576.58 9915.56 1576.53
 9918.85  1576.5 9919.59 1576.48 9923.33 1576.46 9925.04 1576.46  9925.8 1576.29
  9926.5  1576.1 9926.67 1576.04 9926.88    1576 9929.03 1575.53 9935.68    1574
 9938.13  1573.5 9939.18 1573.39 9939.44 1573.34 9948.08 1573.15 9956.62 1572.98
 9957.17  1573.1 9962.97    1574 9964.01 1574.21 9964.61 1574.31 9965.59 1574.43
 9974.21  1574.6 9982.51 1574.86 9982.69 1574.82 9983.31 1574.69  9983.7 1574.58
  9986.1    1574 9992.12 1572.42 9993.56    1572  9994.1 1571.84 9994.32 1571.78
 9994.82  1571.6 9999.27 1571.87   10000  1571.910000.81 1571.9310003.41    1572
10004.62    157210005.59 1572.0610006.47 1572.0810008.64 1572.61 10011.6 1573.34
10012.67  1573.6 10014.4    157410014.92 1574.1410017.19 1574.6810019.78 1575.21
10023.53    157610028.26 1577.0810028.39 1577.1110030.56 1576.7910030.65 1576.77
10033.05  1576.310034.43    157610037.43 1575.37 10039.3 1574.9810042.94  1574.2
10043.16  1574.210044.64 1574.5610048.56 1575.3910049.98 1575.6810050.57  1575.8
10050.81  1575.910050.94 1575.8810051.59    157610051.76 1576.0510052.15 1576.11
10053.38  1576.310057.26 1576.4910058.97 1576.5710062.24 1576.7310066.71 1576.93
10070.64  1577.110071.26 1577.1110071.33 1577.1110072.16  1577.110072.99  1577.1
10074.22  1577.110074.47 1577.0810090.65 1577.0910092.09 1577.0910134.81 1577.03
10137.66  1577.110139.12 1577.0410141.31 1577.0610142.78 1577.0510147.33 1577.07
10153.37  1577.110155.81 1577.1410156.76 1577.1310159.34 1577.0910160.18 1577.11
10161.24  1577.1 10161.8 1577.1410162.36 1577.1410162.88 1577.1310163.53 1577.12
10164.15  1577.110164.68 1577.1110170.27 1577.1310174.52 1577.1410191.21 1577.11
10191.46  1577.110191.69 1577.14 10193.9 1577.1710196.57 1577.1810198.04 1577.21
10201.01  1577.210203.86 1577.2410206.83 1577.2910208.13 1577.3610211.93 1577.47
10213.68  1577.610215.27  1577.610217.71 1577.6410220.46 1577.6710249.07    1578
10252.74  1578.210253.67 1578.2210253.95 1578.2310256.31 1578.3610261.88 1578.69
   10285    158010287.65 1580.1710288.49 1580.2410289.65 1580.4210293.05 1580.92
10299.45    158210307.44 1583.24 10312.1 1583.98

Manning's n Values         num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9765.82     .06 9925.04    .04510028.39    .05510074.22    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9925.0410028.39           239.22  329.13  394.08             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.46

INPUT
Description:
Station Elevation Data     num=     194
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9710.13    1580 9724.88 1578.02 9725.03    1578 9725.17 1577.98 9743.45    1576
 9747.12  1575.6 9748.23  1575.5 9750.17  1575.3 9752.87    1575 9756.24 1574.63
 9759.55  1574.7 9763.52 1574.75  9770.1 1574.22 9772.24 1574.06 9772.58 1574.03
    9773    1574 9773.13 1573.99 9773.16 1573.99 9773.51 1573.96 9773.95 1573.92
 9774.21  1573.9 9776.35    1574 9779.56  1574.1 9791.96 1574.78 9795.12 1574.96
 9798.17  1575.1 9798.46 1575.14 9799.89 1575.19 9799.92 1575.19 9800.94 1575.21
  9801.1  1575.2 9808.66 1575.37 9810.44 1575.39 9815.49 1575.44 9818.42 1575.48
 9821.92  1575.5 9822.95 1575.51 9829.75  1575.7 9832.05 1575.68 9835.49 1575.67
 9836.61  1575.7 9840.61 1575.69 9842.72  1575.7 9845.71 1575.87 9846.88 1575.93
 9847.32    1576 9848.19    1576 9849.36 1576.07 9849.92  1576.1 9852.65 1576.24
 9857.77  1576.5 9866.12 1576.19 9869.18 1576.07 9871.02    1576 9885.51 1575.43
 9889.53  1575.3  9893.3 1575.12  9894.8 1575.16  9901.9 1575.39  9904.5 1575.44
 9911.82  1575.5 9915.49 1575.53 9918.05  1575.5 9920.07 1575.31 9922.14 1575.17
 9924.35    1575 9927.63 1574.71 9928.16  1574.7 9937.55 1575.47 9939.69 1575.62
 9939.93  1575.6 9940.07 1575.63 9940.16 1575.63  9941.8 1575.67 9941.81 1575.67
 9941.82  1575.7 9942.08 1575.67 9944.17 1575.67 9946.02 1575.65 9948.26 1575.62
 9948.91  1575.6 9953.83 1575.37 9957.83 1575.21  9958.4 1575.19 9959.85 1575.11
  9965.3  1574.7 9966.73 1574.63  9967.3  1574.5  9968.6  1574.2 9968.78 1574.14
 9968.98  1574.1 9969.19    1574 9970.16 1573.73 9973.73 1572.82 9977.04    1572
 9983.83    1570 9983.93    1570 9984.22 1569.91 9985.21 1569.86  9986.2  1569.9
 9986.83 1569.93 9987.06 1569.94 9998.59  1569.4   10000    156910008.19  1568.9
 10010.1 1568.7610010.25 1568.8310011.13 1569.2610012.45    157010014.89  1571.1
10015.35 1571.3310016.69    157210018.23 1572.8310020.65    157410022.11  1574.7
10022.42 1574.7710023.01 1574.95 10023.2 1575.0410023.27 1575.0410035.21  1575.1
10045.94 1575.1210051.23 1575.1410057.71 1575.1710060.21 1575.3910066.98    1576
10080.73 1577.2610089.12    1578 10090.2 1578.0910090.46 1578.1110091.36  1578.1
10092.68 1578.1410096.11 1578.3710097.24 1578.4110098.61 1578.3810099.81  1578.4
10100.44 1578.3510109.57  1578.410111.69  1578.410113.61  1578.410115.25  1578.4
10116.98 1578.4410118.77 1578.4510120.29 1578.4510121.15 1578.4210170.23    1578
 10208.8 1578.6410209.26 1578.6310210.14 1578.6210212.14 1578.6110218.56  1578.7
10222.48 1578.6810272.17 1578.6910273.64  1578.710275.04 1578.6910278.24  1578.7
 10281.1 1578.6610281.12 1578.6510282.11 1578.6410285.65 1578.6410286.36  1578.6
10287.18 1578.6210290.36 1578.5910293.07 1578.6610294.82 1578.6310296.23  1578.6
   10299 1578.5510299.78 1578.5310300.51  1578.510303.54 1578.4310303.83  1578.4
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10305.83 1578.3810306.88 1578.4310306.98 1578.4410307.21 1578.4510310.33  1578.6
10312.27 1578.7310314.87 1578.8610316.77 1578.9910318.83 1579.11 10323.3  1579.4
 10323.4 1579.3610323.64 1579.3710324.24 1579.4510327.22 1579.8310327.64  1579.9
10328.68    158010330.45 1580.2210331.41 1580.3610336.43 1581.0710342.58  1581.9
10344.78 1581.9610348.18    158210348.21    158210350.21    1582

Manning's n Values         num=        4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9710.13     .06 9857.77     .06 9941.82    .045 10023.2    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9941.82 10023.2             221.1  275.02  335.08              .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.41

INPUT
Description:
Station Elevation Data     num=      275
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9642.5    1582 9643.88    1582 9659.48 1581.27 9661.08 1581.21 9663.47 1581.13
  9666.9    1581 9675.85 1580.67 9675.99 1580.67 9676.04 1580.67 9677.53 1580.38
 9679.41    1580 9687.11 1578.52 9689.91    1578 9697.38 1576.57 9698.86 1576.32
  9700.6    1576 9702.36 1575.68 9704.51 1575.27 9714.22 1574.59 9717.41 1574.37
 9718.62  1574.3 9719.54 1574.22 9720.05 1574.17 9722.04    1574 9724.54  1573.8
 9726.02  1573.7 9729.54  1573.4 9735.36 1572.96 9738.74 1573.22 9742.72  1573.5
 9750.49    1574 9750.53    1574 9750.58    1574 9750.61    1574 9750.63    1574
 9753.69 1574.09 9754.34  1574.1  9759.2 1574.21 9761.28 1574.24 9763.84  1574.3
 9765.77 1574.36 9766.24 1574.31 9766.67 1574.26 9769.32    1574 9769.76    1574
  9770.6 1573.87 9787.45 1573.92 9787.66 1573.92 9787.81 1573.92 9788.12  1573.9
 9793.41 1573.52 9800.72 1572.99 9800.98    1573 9811.75 1573.53 9812.24  1573.5
 9822.06 1573.78 9823.78 1573.57 9824.91 1573.44 9829.28 1572.95 9831.01  1572.7
 9832.01 1572.63 9837.95 1572.51 9842.31  1572.4 9861.03 1572.22  9861.7  1572.3
 9862.41 1572.25 9862.72 1572.23 9862.96 1572.25 9866.22 1572.49 9867.36  1572.5
  9870.8 1572.68 9886.65 1573.32 9886.79 1573.32  9886.8 1573.32 9889.78  1573.3
 9890.05 1573.26 9893.74 1573.18 9894.41  1573.2 9895.26 1573.22 9899.57  1573.2
 9901.52 1573.21 9902.33 1573.21 9904.89 1573.24 9906.93 1573.27 9908.59  1573.3
 9910.98 1573.31 9913.24 1573.35 9917.39  1573.4 9919.38 1573.43 9921.36  1573.5
 9925.07 1573.52 9926.23 1573.54 9926.86 1573.54 9931.93  1573.6 9932.14  1573.6
 9937.01 1573.71 9937.36 1573.73 9938.03 1573.69 9938.14 1573.69 9940.43  1573.6
  9940.8 1573.62 9941.15 1573.61 9942.96 1573.53 9943.64  1573.5    9946  1573.4
 9948.05 1573.25 9949.77 1573.19  9951.2 1573.12 9951.56 1573.05 9952.12    1573
    9953 1572.97 9961.59 1572.85  9962.4 1572.86 9963.73 1572.88 9965.08  1572.9
 9968.49 1572.81 9970.64 1572.84 9971.75 1572.54  9972.4 1572.34 9973.31    1572
 9974.42 1571.68 9979.99    1570 9983.77 1568.98 9987.08    1568 9990.44  1567.2
 9990.58 1567.16 9993.73 1566.86   10000  1566.4 10002.1 1566.0510008.18  1565.5
10011.39 1566.6910015.16    156810018.21 1569.0610020.04 1569.6810020.96    1570
10021.69 1570.2510026.71    157210027.18 1572.1710027.38 1572.2710027.75  1572.4
10029.11 1572.9110032.23 1573.2310034.77 1573.4310036.99 1573.5810046.38    1574
 10050.6  1574.210060.64 1574.5310069.18 1574.3510077.42 1574.2310077.51  1574.3
10081.99 1574.2910089.97 1574.3810092.57 1574.3910094.06  1574.410097.67  1574.4
10101.34 1574.4610106.62 1574.5410111.18 1574.5810120.58 1574.6910133.53  1574.9
10136.83 1574.6910145.63 1574.3410148.91  1574.210149.96 1574.1710150.89  1574.1
10154.65    157410157.03 1573.9210157.54  1573.910158.76 1573.8510161.12  1573.8
10162.14  1573.810168.41    157410177.47 1574.2910198.69 1574.9510202.31  1575.1
10202.51 1575.0810203.16 1575.0910203.53 1575.0910205.41 1575.1410210.54  1575.2
10211.69 1575.1710214.49 1575.18 10217.1 1575.2110221.21 1575.2310224.37  1575.2
10226.74 1575.2510228.44 1575.2510245.56 1575.3410246.31 1575.3210247.22  1575.3
10248.34 1575.2910254.38 1575.26 10256.1 1575.3310257.25  1575.4 10259.6  1575.5
10260.87 1575.5810262.12 1575.5510263.53 1575.5210265.03 1575.4910271.68  1575.5
10273.21  1575.410277.61 1575.2310280.06 1575.1910283.22 1575.1610285.19  1575.2
10287.57 1575.1710290.88 1575.2410292.74 1575.1910293.36 1575.1510294.13    1575
10295.32 1574.94 10296.3 1574.8310305.65    157410308.25 1573.7610308.75  1573.7
10308.98 1573.6810309.32 1573.6510310.09 1573.5710311.24 1573.4310313.55    1573
10314.09 1572.8710316.74 1572.6210319.18 1573.1710320.76 1573.6110322.72    1574
10323.87 1574.2310323.99 1574.2710324.32 1574.3810324.77 1574.4410325.34  1574.5
10326.36 1574.7210330.37 1575.4610330.71 1575.4710333.66  1575.510336.54  1575.6
10338.78 1575.6310340.56 1575.6610343.72 1575.78 10344.8 1575.8110345.58  1575.8
10347.52  1575.910348.17 1575.9210348.55 1575.9310349.84    157610375.26  1576.6
10385.27 1576.8210399.55 1577.1110408.36 1577.2710431.32    157810449.65  1578.3
10459.37 1578.38 10465.3 1578.4310476.98 1578.5410482.94 1578.6110488.38  1578.7
10493.28 1578.75 10497.5 1578.7910501.26 1578.8210504.74 1578.8410507.92  1578.8
10510.86 1578.8410513.61 1578.8410518.41 1578.8410533.75 1578.8610534.17  1578.9
10546.67    157910555.21  1579.110557.43 1579.1310564.25 1579.1710566.62  1579.2
10567.76 1579.2110581.55 1579.3510597.16 1579.5110613.48 1579.7210631.05    1580

Manning's n Values         num=        5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
  9642.5     .06 9970.64    .04510029.11     .0610292.74    .05510330.37     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
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       9970.6410029.11            318.45  326.48  347.74              .1        .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.35

INPUT
Description:
Station Elevation Data     num=       82
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9659.48  1576.1 9673.12    1576 9683.76 1575.67 9692.72  1575.4 9705.89 1575.01
 9712.65 1574.83 9719.43 1574.66 9721.28 1574.62  9767.8  1574.7 9776.68 1574.45
 9787.89    1574 9794.57 1573.89 9805.17 1573.12 9814.68 1572.31 9823.31 1571.46
 9833.13 1570.98  9839.7 1570.53 9850.48 1570.82 9859.77 1570.87 9861.44 1570.82
 9884.01 1570.85 9897.66 1569.98  9898.7  1569.8 9898.78 1569.84    9915    1570
  9920.5 1570.05 9922.22  1570.2  9931.3    1571 9947.41 1570.94 9950.98  1570.9
 9957.41 1570.85 9965.84 1570.85 9966.72  1570.5 9967.26 1570.33 9967.51 1570.26
 9968.29    1570 9969.81 1569.47 9973.56    1568 9977.63 1566.48 9978.67 1566.15
 9978.97 1566.03 9979.74 1566.04 9980.37    1566 9981.42 1565.92 9983.02 1565.84
    9985 1565.79 9985.63 1565.83 9992.93  1565.7 9993.67 1565.65 9994.28 1565.62
 9996.59 1565.4910003.56 1565.3810004.51  1565.210006.21 1564.9210006.35 1564.89
10006.72 1565.0110009.92    1566 10013.1    1567 10016.3 1567.7310017.35    1568
10021.52 1569.1710022.49 1569.4310023.42  1569.610031.61 1569.91 10043.6  1570.1
10057.65    157210068.61 1573.6210071.38    157410076.84 1574.0310097.57  1574.4
10110.87 1574.8410125.59 1575.17 10150.3 1575.8110169.28 1575.7810170.87 1575.76
10196.07 1575.73 10204.6 1575.7310239.93 1575.5610247.66  1575.5 10266.6 1575.29
10270.75  1575.210275.98 1575.13

Manning's n Values         num=        4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9659.48     .06 9884.01     .06 9965.84    .04510071.38    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9965.8410071.38            341.44  328.76  318.53              .1        .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.28

INPUT
Description:
Station Elevation Data     num=       96
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9730.94    1574 9751.71 1573.08  9820.8 1572.03 9832.74 1571.82 9842.62 1571.71
 9853.12 1571.63 9862.51 1571.54 9871.22  1571.5  9882.5  1571.4 9891.45 1571.17
 9904.01 1570.91 9911.32 1570.81 9918.93 1570.64 9928.14  1570.3 9935.66    1570
 9941.42 1569.74 9941.94 1569.72 9942.65 1569.69 9962.96  1568.9 9964.66 1568.92
 9966.07 1568.83 9967.86 1568.64 9968.35  1568.6 9969.47  1568.3 9970.11  1568.2
 9971.15    1568 9974.37 1567.21 9979.36    1566 9980.76  1565.6 9983.29 1565.08
 9987.18 1564.9410009.17 1564.0810010.63 1564.4910011.99  1564.810015.77    1566
10019.23 1567.0310022.64    156810026.45 1569.17 10026.9  1569.310029.71 1569.28
10067.52 1569.0810082.71 1568.9910093.45    156810100.84  1566.810101.15 1566.77
 10101.2 1566.7710101.34 1566.7510104.89 1566.4510107.23  1566.210110.97  1566.2
10111.76  1566.2 10115.9  1566.310118.06 1566.2910119.14  1566.310122.05 1566.34
 10123.2 1566.3410126.98 1566.33 10127.1 1566.3310127.55  1566.3 10127.8 1566.34
10142.77 1567.3910150.53 1567.2910151.33 1567.3110152.41  1567.310153.83 1567.37
10153.95 1567.3810160.47    156810163.13 1568.26 10166.3  1568.510168.75 1568.83
 10179.6    157010180.62 1570.1110197.49 1571.9710197.86    157210207.98 1573.51
10211.08 1573.8110211.24 1573.82 10213.6    157410218.77  1574.410225.62 1574.89
 10227.2 1575.04 10228.9 1575.15 10231.3 1575.3510233.62  1575.510237.36 1575.64
10237.85 1575.67 10240.4 1575.7510241.53 1575.8110246.93  1575.9 10247.4 1575.96
10247.82 1575.96 10248.1 1575.9710249.99 1575.9810251.34    157610252.17 1576.01
10257.12 1576.13

Manning's n Values         num=        4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9730.94     .06 9966.07    .045 10026.9    .05510082.71    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9966.07 10026.9            507.59  485.85  455.74              .1        .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.19

INPUT
Description:
Station Elevation Data     num=      287
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9723.46  1571.8 9728.95 1571.43 9730.39 1571.31 9730.46  1571.3 9730.76 1571.24
 9731.33  1571.2  9731.9 1571.21 9734.14 1571.21 9736.07 1571.27 9736.49 1571.26
 9775.69  1570.6 9776.52 1570.61 9777.58 1570.56 9778.19 1570.55 9779.19 1570.54
 9804.69    1570 9820.24 1569.56  9847.7  1568.5 9865.32 1568.46 9867.58 1568.44
    9872  1568.4 9880.12 1568.35 9888.89 1568.28 9897.64  1568.2 9915.96    1568
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 9931.66  1567.2 9935.12 1567.03 9936.77 1566.96 9936.98 1566.99 9937.25    1567
 9937.68    1567 9952.54 1567.19 9957.19 1567.25 9958.92 1567.24 9963.83  1567.2
 9966.31  1567.2 9968.62 1567.27 9971.44 1567.31 9976.44 1567.47 9982.32 1567.63
 9984.19  1567.7 9985.43 1566.24 9985.51 1566.15 9985.59    1566 9985.76 1565.74
  9987.4    1564 9988.14 1563.54 9988.38 1562.96    9989    1562 9989.73 1560.91
 9990.03  1560.6   10000 1560.6510003.38 1560.7410004.93 1560.7510007.03 1561.19
10010.72    156210016.08 1563.3810018.52    156410020.13 1564.4110026.15  1565.9
10028.45  1565.810035.29 1565.47 10038.6 1565.3610039.66 1565.3110043.43 1565.03
10046.19  1564.910051.22 1564.7210055.79 1564.5710065.63 1564.0610066.56    1564
10067.81  1563.910071.45 1563.7510073.16 1563.8410074.42 1563.7810076.26    1564
10078.62  1564.310079.15 1564.3410080.07 1564.4510080.82 1564.5510083.78 1564.85
10084.85    156510086.23 1565.2410088.49 1565.6910090.16 1566.0610090.56 1566.09
10090.63  1566.110091.73 1565.9910091.86 1565.9810092.64 1565.9410094.22 1565.94
10095.59  1565.910097.33  1565.910097.92 1565.8710164.19 1565.9610167.61    1566
10169.18    156610172.48    1566 10185.3    156610186.83    156610194.43 1565.84
10195.38  1565.810196.81 1565.7410199.03 1565.6910205.54  1565.510215.64 1565.22
10224.13  1564.410226.48  1564.210228.68    156410229.41 1563.94 10232.8 1563.62
10233.71  1563.710235.93    156410244.19 1565.2210250.28    156610251.65 1566.22
10252.18  1566.3 10254.9 1566.1410257.78    156610260.23 1565.8610265.32 1565.62
10266.67  1565.710267.18 1565.66 10267.9 1565.68 10270.9  1565.710271.89 1565.72
10272.64  1565.710274.57 1565.8110280.31    156610281.25 1566.0310281.56 1566.04
 10282.2  1566.1 10299.4 1566.6410304.07 1566.7610308.91 1566.8910310.95 1566.93
10311.54    156710312.39 1567.0710313.83 1567.2310314.54 1567.3110321.28    1568
10328.05  1568.710328.63 1568.7210329.77 1568.7310330.93  1568.810331.76 1568.81
10350.81  1568.910352.55 1568.9110357.01 1569.0910364.88  1569.1 10374.2 1569.26
10384.24  1569.310388.17 1569.3510393.08 1569.3310394.88 1569.3710395.26 1569.38
10396.28  1569.4 10397.3 1569.3910413.07 1569.3510414.47 1569.3110416.56 1569.26
10420.69  1569.210423.14 1569.1110425.38 1569.0610427.02 1569.0410428.94    1569
10431.99  1568.810434.41  1568.810438.95 1568.5810441.34 1568.4710445.85 1568.51
10446.82  1568.510447.99 1568.4810449.14 1568.4610449.78 1568.4810452.12 1568.43
10453.46  1568.410454.32 1568.4110517.94 1569.0310519.17 1569.0410562.03 1569.73
10569.25  1569.810579.39    157010585.27 1570.0110597.85 1570.02 10603.2 1570.02
10609.02    157010615.06 1570.04 10621.1 1570.0510629.75 1570.0610639.96 1570.07
10643.42  1570.110649.88 1570.0810659.07 1570.0910668.08  1570.110685.43 1570.11
10689.48  1570.110691.49 1570.1110694.26 1570.1110697.93 1570.1110700.78  1570.1
10702.72  1570.110703.65  1570.110708.65 1570.0810710.39 1570.0710711.59 1570.06
10712.12  1570.110716.94    157010722.63 1569.8610723.28 1569.8810724.04 1569.91
10727.56  1569.910730.21 1569.7910732.81 1569.71   10740 1569.1610749.87 1568.42
 10756.2  1568.3 10767.4 1568.0110768.02    156810782.07  1567.710791.45 1567.52
10795.64  1567.610795.78 1567.5610802.75  1567.610804.31 1567.6110807.75 1567.64
10815.05  1567.710844.83    156810854.95 1568.1310871.77 1568.1910876.87 1568.44
10897.13  1569.510904.85    157010908.03 1570.16 10908.8 1570.2110913.81  1570.1
10915.08  1570.110922.28 1570.0210922.75 1570.0210922.88 1570.0110922.93 1570.01
10923.03    157010925.24 1570.0210931.13    157010934.47 1569.9910934.54 1569.99
10940.68    157010940.72    157010940.74    157010941.06 1569.9910943.33 1569.98
10943.45    157010943.48 1569.9810943.54 1569.9710951.69  1569.810952.14  1569.8
10952.38  1569.810973.68 1569.4510987.92 1569.2910989.61 1569.2410991.12 1569.22
10994.62  1569.111000.53 1569.0411002.92 1568.96 11004.7 1568.9511008.38 1568.85
11012.06  1568.811016.29 1568.6711017.87 1568.6711027.74 1568.8211036.59 1568.96
11040.65    1569 11041.9 1569.0111042.81 1569.0211043.37 1569.03 11046.7 1569.04
11079.35  1569.711081.26 1569.7311087.33  1569.911095.07    157011104.37 1570.36
11106.87  1570.411115.07 1570.5911118.22 1570.6511138.64 1571.1411153.38 1571.53
11175.16    157211176.22 1572.03

Manning's n Values         num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9723.46     .06 9984.19    .04510026.15    .05510164.19    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9984.1910026.15           306.52  310.72  225.43             .1        .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   1039311176.22    1572

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.13

INPUT
Description:
Station Elevation Data     num=     285
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
 9606.68     1570 9609.57  1569.7 9625.91     1568 9628.56  1567.8 9633.23 1567.39
 9649.59   1566.4 9671.55 1567.72 9680.17     1568 9700.96 1569.51 9702.89 1569.63
 9776.14   1568.4 9800.11    1568 9801.55 1567.96 9837.69 1566.94 9866.87    1566
 9868.69   1565.9 9888.98 1565.38  9891.8  1565.3  9893.1 1565.26 9893.93  1565.3
 9895.79   1565.4 9897.54 1565.46 9899.29 1565.52 9921.26  1565.8 9922.14 1565.81
  9923.8   1565.8 9924.84 1565.79 9924.98 1565.79 9926.72 1565.78 9928.31 1565.75
  9932.1   1565.7 9935.87 1565.62  9944.1 1565.64 9957.37 1565.59 9969.33 1565.54
 9969.47   1565.5 9972.54 1564.68 9974.46 1564.14  9974.7 1564.07 9974.92    1564
 9975.15   1563.9 9981.46    1562 9985.13 1561.08 9988.42    1560 9989.65 1559.62
 9990.16   1559.4 9999.95 1559.26   10000 1559.1510008.43 1559.08 10009.6 1559.56
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10010.19  1559.810010.39 1559.8910010.65    1560 10011.5 1560.3610015.46    1562
10019.83  1563.810020.13  1563.9 10023.4 1563.4710029.68  1562.610036.59 1562.98
10040.19  1563.210046.94 1563.7510049.78    156410050.73 1564.0810051.21 1564.11
 10051.5  1564.110051.78 1564.0410052.03    156410055.21 1563.6210059.77 1563.14
10067.17  1562.310071.09 1561.8310077.62 1562.54 10082.4 1563.1110084.48 1563.36
10089.34    156410090.03 1564.0810090.64 1564.1210091.82 1564.2110093.46 1564.25
10094.34  1564.310102.29 1564.4210108.03 1564.41 10108.2 1564.3910109.51 1564.26
10151.39  1565.510166.56    156610168.03 1566.1310169.21 1566.2610180.05 1567.38
10240.99  1566.310260.29    156610261.84 1565.9910265.68 1565.9710268.71 1565.96
10268.78    156610270.23 1565.9810270.33 1565.9810270.61 1565.9810271.01 1565.98
10282.14    156610284.84    156610288.61    156610288.72    156610288.93    1566
10289.59    156610296.06 1566.0410296.46 1566.04 10297.9 1566.0610298.94 1566.02
10299.44    1566 10299.7 1566.0110299.85 1566.0210299.98 1566.0510300.61 1566.07
10314.64  1566.210315.52  1566.210319.36 1566.2610326.71 1566.3510330.13  1566.4
10332.85  1566.410336.34  1566.510337.24 1566.5110352.27 1566.6310363.29 1566.71
10388.45  1566.910401.09 1566.9810418.79 1567.1210418.89 1567.1210435.02 1567.27
10450.31  1567.410455.23 1567.44 10458.7 1567.4710460.84 1567.4910466.82 1567.54
10474.19  1567.610475.18 1567.5910483.98 1567.6310494.34 1567.6910506.87 1567.78
10522.49  1567.910524.41 1567.9310525.12 1567.9410525.22 1567.9410525.38 1567.94
10525.83  1567.910525.98 1567.9410526.04 1567.95 10526.1 1567.9510526.31 1567.95
10526.79    1568 10526.9 1567.9610526.97 1567.96   10527 1567.9610527.08 1567.96
10527.15    1568 10527.2 1567.9610527.27 1567.9610527.49 1567.9510527.57 1567.95
10527.63  1567.910528.32 1567.9410535.27 1567.9910536.21    156810536.24    1568
10539.79    156810543.86 1568.0110544.73    156810553.05 1567.9510553.19 1567.95
10553.34  1567.910561.29 1567.8610562.51 1567.8310563.32 1567.82 10566.1 1567.76
10574.78  1567.610580.46 1567.4810587.39 1567.3210602.75 1566.9510621.66 1566.49
 10623.8  1566.410628.44 1566.3110632.52 1566.2110635.41 1566.1410637.28  1566.1
10641.06    156610643.96 1566.0210645.62    156610645.92 1565.9910645.96 1565.99
10645.99    156610646.02 1565.9910646.05 1565.9910646.16 1565.9910667.95 1565.51
 10669.3  1565.510671.37 1565.4910675.35 1565.5210676.52 1565.4710677.98 1565.42
 10678.8  1565.410681.28 1565.5510681.57 1565.5610681.74 1565.5710686.54    1566
 10694.8  1566.310700.33 1566.3710707.55 1566.5610708.64 1566.5810708.93 1566.59
   10715  1566.7 10720.9 1566.7610722.43  1566.810724.31 1566.8210724.49 1566.82
10726.66  1566.910726.96 1566.8910727.27 1566.8910728.89 1566.9410729.28 1566.93
10733.76    156710734.83 1566.9810736.54 1566.9510737.57 1566.9510738.87 1566.92
10740.51  1566.910741.91 1566.8310743.23  1566.810745.06 1566.7210747.11 1566.73
10749.14  1566.910751.56  1566.910753.71 1566.91 10754.9  1566.910758.62  1566.9
10760.83  1566.910766.24 1566.9410766.26 1566.9410766.42 1566.9410768.39 1566.94
10769.46  1566.910769.78 1566.9410773.23 1566.9210773.99 1566.9110778.05 1566.88
10779.25  1566.9 10781.3  1566.910783.14  1566.910784.52 1566.9110785.62  1566.9
10787.35  1566.910788.99 1566.8810791.41 1566.8510794.45 1566.8210796.82 1566.79
10802.61  1566.8 10804.5 1566.7510806.08 1566.73 10807.5 1566.7210810.61 1566.69
10811.65  1566.710814.74 1566.6510817.74 1566.6210818.31 1566.6110821.37 1566.58
 10821.7  1566.610821.81 1566.5810824.92 1566.5410824.95 1566.5410828.14 1566.69
10830.38  1566.810835.34 1567.1410839.13 1567.2110841.41 1567.2610843.52 1567.33
10853.08  1567.5 10855.1 1567.5910856.71 1567.6310858.68 1567.7210861.15 1567.77
10873.69    156810889.89 1568.4910930.49    157010952.96 1570.6610994.77 1571.99

Manning's n Values         num=       5
      Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
  9606.68     .06 9702.89     .06 9969.33    .04510020.13    .05510051.21    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9969.3310020.13           269.34  278.55  369.36             .1       .3
Ineffective Flow     num=       2
    Sta L   Sta R    Elev   Sta L   Sta R    Elev
  9606.68 9775.45    1570 10544.710994.77    1570

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.08

INPUT
Description:
Station Elevation Data    num=     389
      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9471.11  1567.9 9495.49 1567.18 9500.14 1567.16  9502.9 1567.09 9506.51 1567.03
  9509.07    1567 9510.22 1566.93 9513.22 1566.82 9515.56 1566.81 9519.08 1566.77
  9523.03  1566.7 9526.91 1566.63 9527.24 1566.66 9528.72 1566.61 9530.65 1566.57
  9533.57  1566.6 9533.73 1566.57 9535.68 1566.66 9535.91 1566.66 9537.83 1566.53
  9546.54  1566.4 9563.92 1566.18 9565.51 1566.17 9565.64 1566.15    9567 1566.17
  9574.46  1566.3 9586.74 1566.17 9598.76 1566.07 9602.58 1566.05 9605.93    1566
  9613.45  1565.8 9614.08 1565.81  9614.8 1565.79 9615.39 1565.78 9615.78 1565.77
  9626.79  1565.5 9627.48 1565.47 9628.83 1565.44 9637.23 1565.26  9638.2 1565.22
  9639.16  1565.2 9640.16 1565.16 9646.88 1565.04 9648.09 1565.03  9649.6 1565.01
  9651.38    1565 9653.29 1564.95 9654.83 1564.92 9664.37 1564.78  9666.8 1564.73
  9668.57  1564.7 9670.41 1564.65 9672.63  1564.6 9674.83 1564.57 9676.98 1564.52
  9679.19  1564.5 9681.29 1564.42 9683.25 1564.36 9687.07 1564.21  9688.7  1564.2
  9689.74  1564.2 9690.52 1564.19 9691.74 1564.22 9693.94 1564.27 9702.74 1564.13
  9705.48  1564.1 9709.19 1564.02 9711.96 1564.01 9712.38    1564 9712.58    1564
  9714.87  1563.9 9715.25 1563.92  9715.8  1563.9 9725.27 1563.68 9726.54 1563.62
  9727.66  1563.6  9728.6 1563.53 9729.08 1563.51 9731.89 1563.39 9733.37 1563.32
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 9735.26  1563.2 9736.43 1563.19 9738.77 1563.11 9739.21  1563.1 9742.17 1563.13
 9742.46  1563.1 9743.04 1563.11 9743.13 1563.11 9747.45 1563.11 9747.73 1563.12
 9749.33  1563.2 9752.47 1563.27  9755.1 1563.29 9756.64 1563.34 9758.72 1563.32
  9760.2  1563.3 9761.69 1563.25 9762.74 1563.23 9764.83 1563.27 9766.36  1563.3
 9767.85  1563.3 9768.84 1563.38 9770.61 1563.43 9771.53 1563.46 9773.86 1563.54
 9774.54  1563.6 9779.22  1563.7 9779.49  1563.7 9780.95 1563.65 9782.33 1563.68
 9784.14  1563.7 9788.63  1563.5 9789.24 1563.46 9793.27 1563.37 9796.48 1563.24
 9803.06  1563.1 9804.29 1563.07  9805.2 1563.07  9806.1 1563.03 9821.49 1562.33
 9827.92    1562  9829.3 1561.93 9840.86 1561.36 9841.45 1561.39 9845.62 1561.62
 9847.23  1561.7 9848.45  1561.7 9854.74    1562 9858.97  1562.2 9859.48 1562.23
 9860.33  1562.3 9861.43 1562.36 9870.26 1562.55 9871.28 1562.53 9872.21 1562.46
 9872.63  1562.4 9873.08 1562.47 9874.24 1562.36 9874.83 1562.43 9875.27 1562.48
 9875.66  1562.5 9876.01 1562.51 9876.57 1562.52 9879.32 1562.06 9879.59    1562
 9883.75  1561.1 9884.24 1560.96  9885.8 1560.94 9886.01 1560.94  9888.4 1560.96
 9889.96    1561 9890.76 1560.96 9891.83 1560.97 9894.87    1561  9896.4 1561.02
 9897.89    1561  9901.2 1561.04 9902.35 1561.04 9905.25 1561.04  9906.2 1561.05
 9912.67  1561.1 9914.77 1561.08 9916.81 1561.04 9916.92 1561.04 9918.62 1561.03
  9918.7    1561 9920.21 1561.03 9920.26 1561.03 9921.75 1561.04 9921.78 1561.04
 9923.59    1561 9923.97 1561.04 9926.23 1561.03 9926.45 1561.01 9926.97 1560.99
 9931.09  1560.9 9933.09 1560.93 9933.69 1560.98 9935.39 1561.26 9937.33 1561.56
 9938.56  1561.7 9939.12 1561.84 9940.16    1562 9943.97 1562.61 9949.44 1563.47
 9956.81  1563.4 9965.95 1563.38 9973.16 1563.33 9977.22 1563.35 9978.05 1563.13
 9982.23    1562  9987.5 1560.55 9989.47    1560 9992.05  1559.3 9993.94 1558.79
   10000  1558.710020.22 1558.5510022.94 1558.5210023.14 1558.5710025.61 1559.08
10029.54    156010034.82 1561.2410038.29    156210041.95 1562.8910042.54 1563.02
10056.18  1562.3 10058.9  1562.210059.95 1562.15 10064.3    156210064.57 1561.99
10064.88    156210065.26 1561.9710065.76 1561.9610066.71 1561.9510074.49 1561.93
10075.23  1561.910076.16 1561.8810077.67 1561.9110091.75 1563.5110093.46 1563.73
10094.15  1563.810094.49 1563.8710095.68    156410096.35 1564.0710097.87 1564.27
10103.94    156510104.09    1565 10111.5 1564.9710132.16 1564.7910156.55 1564.62
10165.53  1564.610171.17 1564.5610177.41 1564.5310208.22  1564.310212.03 1564.27
10214.33  1564.310215.92 1564.2510235.54  1564.110247.63    156410261.74 1563.85
10271.03  1563.810271.51 1563.7710274.06  1563.8 10275.7 1563.8210276.93  1563.8
10277.21  1563.810281.75 1563.8110283.51 1563.7510285.39 1563.74   10287 1563.74
10289.14  1563.810290.41 1563.7810291.44  1563.810303.53 1563.8410304.79 1563.84
10306.95  1563.910307.38 1563.8610308.26 1563.8710309.17 1563.8710310.02 1563.88
10310.72  1563.9 10311.3 1563.89 10346.1 1563.9810346.26 1563.9810346.38 1563.98
10346.49    156410346.56 1563.9810346.62 1563.98 10346.7 1563.9810346.76 1563.98
10346.83    156410346.89 1563.9810356.86    156410360.88 1564.0110365.95 1564.01
10370.54    156410371.05    156410371.06    156410374.57    156410374.61 1563.97
10376.75 1563.9710382.53 1563.9210393.87 1563.7610398.89  1563.7 10403.5 1563.63
10407.79 1563.5910415.25 1563.51 10416.6  1563.510417.67  1563.510418.46 1563.53
10419.58 1563.5410421.02 1563.5410422.76 1563.5410425.71  1563.610430.07  1563.6
10436.19 1563.6810442.59 1563.7410449.04 1563.7810452.02  1563.810452.34 1563.75
   10464 1563.79 10475.6 1563.8610481.88 1563.9110488.82    156410489.21 1563.98
10489.87    156410497.62 1564.04 10503.9 1564.0610508.68  1564.110517.32 1564.03
10518.87 1564.0110520.13    156410521.11 1563.9810524.11  1563.910525.42 1563.88
10525.79 1563.8710526.35 1563.8410533.75  1563.510536.09  1563.410541.79 1563.17
10545.02    156310546.26 1562.96 10549.6 1562.7510550.23  1562.810550.43 1562.76
10555.97 1562.8710558.39 1562.8710563.89 1562.9110571.52  1562.910574.68 1562.85
10580.29 1562.8110583.32 1562.87 10584.1 1562.8910584.79  1562.910589.78 1563.06
10594.08 1563.1810595.44 1563.2310597.46  1563.310599.93  1563.410601.84 1563.39
 10608.9 1563.56 10609.8  1563.610610.45 1563.6310611.54  1563.710616.88 1563.78
10619.05 1563.8410619.41 1563.8510620.76 1563.9310622.13    156410630.18 1564.35
10637.89 1564.72 10641.5 1564.8610642.27 1564.8910645.84    156510647.75 1565.14
10648.81 1565.1610650.62 1565.2210651.57 1565.2610661.19  1565.610662.18 1565.63
10662.77 1565.6510663.41 1565.6710671.25    156610678.17  1566.210680.72  1566.3
 10692.8 1566.6810700.29 1566.9310713.24 1567.3110722.84  1567.710730.87    1568
10742.89 1568.1310759.86 1568.3210774.36 1568.4910786.73  1568.610807.48 1568.84
10832.92 1569.0410852.34 1569.1910862.86 1569.2710871.64  1569.310875.58 1569.35
10879.39 1569.3610885.79 1569.3710887.32 1569.37   10890  1569.310891.67 1569.35
10903.38 1569.4410918.99 1569.56 10951.8 1569.9310957.06    1570

Manning's n Values         num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9471.11     .06 9870.26     .06 9977.22    .04510042.54    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9977.2210042.54            498.06  502.15  512.37             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.99

INPUT
Description:
Station Elevation Data     num=     406
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9448.59    1566 9453.98 1565.88 9454.53 1565.87  9455.1 1565.86 9456.01 1565.85
 9467.29  1565.6  9468.3  1565.6 9469.17 1565.59 9469.96 1565.58 9470.64 1565.56
 9478.78  1565.4 9479.81 1565.34 9482.18 1565.18 9483.68 1565.13 9519.17 1564.62
 9524.64  1564.5 9538.66 1564.37 9577.19 1564.02 9578.51    1564 9580.53  1563.9
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 9580.82  1563.9 9581.11 1563.88 9582.04 1563.86 9593.11 1563.35 9595.86  1563.3
  9598.7  1563.3  9601.9 1563.19    9606    1563 9616.27 1562.75 9618.88 1562.57
 9618.92  1562.6  9620.8 1562.47 9623.24 1562.53 9623.69 1562.54 9626.37 1562.58
 9628.96  1562.6 9630.96 1562.71 9631.57 1562.75 9638.58 1562.68 9645.27 1563.48
 9646.48  1563.5 9647.52 1563.37 9649.76  1563.3 9649.99 1563.29 9650.35 1563.29
 9650.88  1563.3 9651.28 1563.27 9651.72 1563.25 9655.43 1563.06 9656.91 1563.06
 9657.55  1563.1  9660.5 1562.79 9670.01 1562.59 9672.34 1562.49 9674.38 1562.41
  9675.9  1562.4 9676.79 1562.52 9677.43 1562.54 9679.39 1562.52 9681.06  1562.5
 9681.39  1562.5 9695.31 1562.39 9701.21 1562.31 9706.55  1562.2 9713.19    1562
 9720.82  1561.8 9723.38 1561.77 9725.14 1561.76 9728.02 1561.73  9728.9 1561.73
  9730.1  1561.7 9738.71  1561.9 9744.25    1562 9746.06    1562 9746.36    1562
    9747    1562 9748.04 1561.99 9749.41 1561.97 9750.67 1561.95 9752.83 1561.91
 9756.43  1561.9 9763.71 1561.81 9765.64 1561.78  9771.9 1561.73 9772.89 1561.74
 9776.23  1561.8 9780.23 1561.86 9782.12 1561.88 9783.21 1561.91 9785.43 1561.96
 9786.12    1562 9786.93    1562 9790.04  1562.1 9802.49 1562.27 9805.72 1562.29
 9817.69  1562.4 9819.22 1562.37 9820.74  1562.4 9822.49 1562.41 9832.89 1562.71
 9835.95  1562.7 9838.67 1562.67 9913.07  1563.5  9913.8 1563.51 9914.35 1563.51
 9914.35  1563.5 9914.54 1563.44  9918.6    1562 9923.31 1560.37 9923.41 1560.32
 9923.83  1560.2 9924.29    1560 9925.63 1559.53 9929.96    1558 9933.13  1556.9
 9934.86  1556.3 9951.68 1557.38 9955.66 1557.64  9961.5    1558 9965.93 1558.31
 9969.51  1558.5 9972.38 1558.38 9979.63    1558 9981.27 1557.91 9982.04 1557.87
 9983.18  1557.8 9985.46 1557.72 9993.63 1557.35   10000    155710005.98 1556.79
10006.97  1556.910014.98    1558 10021.9 1558.9110025.95 1559.4910028.35 1559.53
10031.19  1559.6 10050.3    156010061.78    156010064.49    156010069.01    1560
 10074.7    156010079.14    156010083.46    156010088.93    156010093.71    1560
10095.31    156010096.92 1560.0710109.56 1560.0910120.38 1560.2310135.47    1560
10141.53    156010148.98 1559.9410161.89 1559.8710173.68 1559.8310181.72 1559.83
10187.91  1559.810193.37 1559.8710193.93 1559.8810194.61 1559.8810195.13  1559.9
10195.65  1559.910200.91 1559.9410201.33 1559.9610202.04 1559.9910207.61 1559.99
10208.34    156010210.17 1560.0110211.64    156010219.25    156010219.62 1559.99
10220.28    156010222.03  1559.910222.65  1559.910223.16 1559.8610228.51 1559.12
10236.47    155810236.79 1557.9510236.87 1557.9410237.18  1557.910237.82  1557.8
10240.01  1557.5 10242.2 1557.1810242.89 1557.2910244.16 1557.5810247.86    1558
10251.39  1558.510251.95 1558.5610253.37  1558.810254.38 1558.9410256.07  1559.1
10258.88  1559.410260.34 1559.5110262.89 1559.7110263.21 1559.7210264.57 1559.74
10266.49  1559.810266.85 1559.85 10268.2 1559.9210269.84 1559.9610272.87 1559.96
10273.87    156010275.72 1559.9510276.42 1559.9510278.47 1559.8610281.25 1559.74
10283.68  1559.610288.81 1558.9110291.69 1558.5710292.36 1558.4810295.72    1558
10298.07  1557.610299.07 1557.4910299.25 1557.4610302.27 1557.7810303.12 1557.84
10306.16  1557.910306.74 1557.9310307.85 1557.9310308.45 1557.9110309.36 1557.88
10315.63  1557.710316.62 1557.6610317.71 1557.6210318.63 1557.5810318.98 1557.63
 10319.8  1557.810320.76    155810325.69 1558.6710329.04 1559.2610330.74  1559.6
   10331  1559.710332.95    156010336.05 1560.44 10338.5 1560.8310342.46 1560.87
 10352.2  1561.110359.09 1561.2310365.29 1561.33 10369.5 1561.42 10373.9  1561.5
10375.79  1561.510377.95 1561.5510379.85 1561.5810390.03 1561.8910390.73  1561.9
10392.35  1561.9 10392.7 1561.9410394.41    156210396.25 1562.0210403.44 1562.06
10425.29  1562.2 10426.5  1562.210427.66  1562.210429.63  1562.210435.57 1562.21
10437.68  1562.210439.29 1562.2510442.99 1562.2510444.42 1562.2710445.84 1562.31
10447.55  1562.310450.06 1562.3710452.44 1562.3710455.74 1562.3610461.12 1562.38
 10462.9  1562.410464.41 1562.3310465.58 1562.3310466.72 1562.3310467.64 1562.33
10475.18  1562.310477.99 1562.3910479.65 1562.4310481.42 1562.4510486.28  1562.5
   10488  1562.510490.82 1562.5810492.22  1562.6 10493.7 1562.5910495.09 1562.61
10496.37  1562.610497.67 1562.6310499.87 1562.6510507.53 1562.6510508.81 1562.65
 10510.5  1562.710512.89 1562.6610516.07 1562.6610519.22 1562.6610521.73 1562.63
 10525.6  1562.610527.55 1562.6510529.23 1562.7110532.28 1562.7810533.93 1562.81
10535.41  1562.810536.48 1562.8310537.54 1562.8410541.55 1562.8510542.97 1562.85
10544.46  1562.910546.16 1562.86 10587.1 1563.0410588.67 1563.0510591.41 1563.05
10592.97  1563.1 10594.7 1563.0610596.23 1563.07 10597.7 1563.0710598.94 1563.05
10599.74  1563.110600.39 1563.0510600.77 1563.0610601.18 1563.0610602.91 1563.07
10604.04  1563.110606.63 1562.9910607.84 1562.9810608.51 1562.9810609.21 1562.98
10610.08    156310610.62 1562.9810611.17 1562.9810611.69 1562.9810612.53 1562.98
10613.14    156310637.89 1562.7110642.34 1562.6410649.49 1562.5210652.43 1562.46
10666.35  1562.210679.78    1562 10684.1 1561.7410684.61 1561.7210685.71 1561.65
10688.38  1561.510692.62 1561.16 10694.6 1560.6110695.81 1560.2610696.12 1560.18
 10696.8    156010703.99 1558.0210704.07    155810704.09 1557.9910704.16    1558
10704.99 1557.7510709.18 1557.7710716.48 1557.8710716.86 1557.9510717.27    1558
10724.17 1559.3510727.53    156010736.75 1561.7610737.91    156210738.19  1562.1
10738.31 1562.0810738.55 1562.1210740.12  1562.410743.81 1563.1110750.01  1563.2
10761.58 1563.4610765.59 1563.5510768.04 1563.6210772.18 1563.6910775.26  1563.8
10785.53    156410790.33 1564.1510792.32 1564.1710794.75 1564.1710806.67    1564
10808.36    156410813.09 1563.7910819.48 1563.5510832.35 1563.1110837.18  1563.3
10837.61 1563.3210838.18 1563.3310838.93 1563.3210839.79 1563.2410841.05  1563.3
10842.99 1563.3710848.28 1562.5710849.66 1562.38 10852.5    156210852.85  1561.9
10852.99 1561.9310855.72 1561.8210857.04 1561.7610862.96 1561.47 10865.1  1561.4
10867.55 1561.2710870.31 1561.1110871.59 1561.0610873.86 1560.9410876.28  1560.8
10879.11 1560.7510882.52 1560.6110887.52 1561.0410890.49 1561.2810893.79  1561.5
10896.54 1561.73   10897 1561.7710897.32 1561.8110899.72    156210914.82  1563.2
10924.52    1564

Manning's n Values          num=        5
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
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 9448.59     .06  9913.8    .04510025.95    .05510222.03    .05510272.87    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9913.810025.95           403.84  411.33  415.61              .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev
 9448.59  9912.1    1564

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.90

INPUT
Description:
Station Elevation Data    num=     245
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9558.92  1561.8 9559.07 1561.82 9565.85  1561.6  9569.6 1561.49 9618.83    1560
 9627.04  1559.7 9628.01 1559.71 9629.15 1559.65 9630.14 1559.59  9630.8 1559.56
 9632.34  1559.6 9635.15  1559.6 9638.38 1559.58 9638.69 1559.58 9638.71 1559.58
 9641.17  1559.6 9641.41 1559.55 9643.46 1559.52 9643.97 1559.51 9646.53 1559.49
 9646.89  1559.5  9649.4 1559.47 9650.44 1559.47 9653.09 1559.45 9654.07 1559.44
  9655.4  1559.4 9657.56 1559.41 9658.99  1559.4 9660.04 1559.37 9661.27 1559.37
 9661.89  1559.4 9662.36 1559.35 9662.74 1559.33  9663.1 1559.32 9670.76 1559.52
 9671.77  1559.5  9672.6 1559.54 9675.28  1559.5 9676.07  1559.5 9676.87 1559.48
 9678.16  1559.5 9679.18 1559.43 9680.15 1559.44 9746.34 1558.79 9752.35 1558.71
 9761.31  1558.6 9763.95 1558.55 9777.01 1558.36 9779.38 1558.38 9779.57 1558.39
 9793.04  1558.5 9794.93 1558.55 9796.76 1558.57    9810 1558.72 9813.41 1558.77
 9818.57  1558.8  9827.5 1558.92 9832.18 1558.96 9835.69 1558.98  9838.2 1559.01
 9849.57  1559.1 9858.44 1559.23  9859.6 1559.25 9860.93 1559.27 9867.53 1559.35
 9872.97  1559.4  9874.1 1559.34 9877.75 1559.09 9885.02 1558.52 9886.98  1558.5
 9910.67  1558.3 9923.84 1558.14 9927.08 1558.12 9937.93    1558 9940.59 1557.93
 9959.33  1557.4 9967.59 1557.26 9967.92 1557.12 9968.37 1556.91 9970.35    1556
 9973.75  1554.5 9975.11    1554 9977.98 1552.74 9979.79    1552 9980.15 1551.84
 9980.23  1551.8 9980.39 1551.69 9980.81 1551.47 9981.84 1551.03   10000 1550.97
10000.42    155110003.31 1550.9510003.63 1551.0210005.99 1551.6310007.57    1552
10010.09  1552.6 10016.3    155410018.21 1554.4310019.24 1554.6510022.95 1555.52
10033.34  1555.6 10042.5  1555.610047.39 1555.62 10047.5 1555.6210047.92  1555.6
10051.39  1555.710055.55    155610071.33 1556.6210078.83 1556.9710079.72 1557.02
10080.68  1557.1 10083.2 1557.1310084.89 1557.1810087.26 1557.2810089.98 1557.38
 10090.6  1557.410091.07 1557.4110091.22 1557.4110092.38 1557.4410101.38 1557.63
10101.79  1557.610115.83 1557.9710116.96    155810117.07    155810124.84    1558
10125.39    155810125.83    155810126.25    155810130.12    1558 10142.4 1557.88
10147.09  1557.9   10155 1557.9910155.28    155810194.64 1558.4710220.04  1558.8
10232.63    155910245.78 1559.1310265.98 1559.4210283.12 1559.6210305.55  1559.9
10314.14    156010314.79 1559.9810315.42 1559.9810322.06    156010327.04    1560
10343.32    156010358.37    1560 10368.4    156010373.95    156010374.45    1560
10377.91    156010383.05 1559.9910387.11 1559.9910391.19 1559.9910395.32 1559.99
10397.82    156010399.33 1559.97 10399.8 1559.96 10455.8 1558.9210458.82 1558.89
10463.96  1558.710467.96 1558.5310468.94 1558.2410469.26 1558.1710469.42 1558.15
10470.08    155810471.65 1557.5410476.97    155610477.54 1555.8410483.38 1554.29
10483.87  1554.210484.01 1554.1510497.21 1554.13 10499.7 1554.78 10509.3    1556
10510.92  1556.210511.18 1556.2410511.41 1556.25   10512 1556.2910512.33 1556.31
 10514.1  1556.510520.95 1557.1910523.07 1557.3710524.11  1557.510524.88  1557.6
10528.59  1557.710530.98 1557.8110531.21 1557.8310533.77    155810534.52 1558.04
10534.79  1558.1 10536.1 1558.2610538.78 1558.5210539.89 1558.6410541.57 1558.79
10542.32  1558.810546.18 1559.0410550.35 1559.2310553.18 1559.3810555.71 1559.54
10557.59  1559.710559.52 1559.7310561.77    156010563.15 1560.0910563.77 1560.09
10564.74  1560.110565.83 1560.0910566.22  1560.110566.53 1560.1110566.77 1560.13
10566.98  1560.210567.21 1560.18 10567.5  1560.210567.74 1560.2210571.29 1560.45
10575.57  1560.6 10577.9 1560.7410579.28 1560.7910580.19 1560.8110580.85 1560.82
   10582  1560.810583.66 1560.82   10588 1560.8110591.78 1560.8110593.74 1560.81
10594.01  1560.810594.21  1560.810594.63 1560.7910598.02 1560.8510599.93 1560.87
10601.42  1560.910602.67 1560.9510604.94 1561.0210609.72 1561.0610610.58 1561.07
10612.67  1561.110614.21 1561.0610657.31 1561.3810661.89 1561.44 10674.5 1561.62
10676.21  1561.610691.31  1561.810698.92 1561.97 10712.7 1561.98   10723    1562

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9558.92     .06 9872.97     .06 9967.59    .04510022.95    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9967.5910022.95           350.25  330.65  384.15              .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.84

INPUT
Description:
Station Elevation Data    num=     184
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9334.62    1560 9358.87 1559.74 9362.18  1559.7 9371.86  1559.6 9376.17 1559.54
 9381.17  1559.5 9394.12 1559.37  9408.3 1559.18 9422.86 1558.99 9428.39 1558.93
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 9432.87  1558.9 9436.68 1558.87 9441.24 1558.84 9446.36 1558.81 9451.84 1558.77
 9457.18  1558.7 9462.47 1558.71 9468.63 1558.68 9473.76 1558.66 9478.75 1558.63
 9482.54  1558.6 9487.25 1558.59 9493.18 1558.54 9500.78 1558.45 9508.45 1558.36
 9516.18  1558.3 9523.95 1558.14 9524.89 1558.14 9533.38 1558.04 9533.56 1558.04
 9533.66    1558 9533.73 1558.04 9533.78 1558.04  9533.9 1558.04 9533.96 1558.04
 9538.17    1558 9544.32 1557.95 9555.52 1557.89 9567.29  1557.8 9573.34  1557.7
  9587.2  1557.6 9640.63 1556.34 9677.89 1556.24  9680.1 1556.23 9684.49 1556.22
 9695.56  1556.2 9698.05 1556.22 9699.41 1556.23 9700.38 1556.24 9763.13 1556.23
 9765.99  1556.2 9815.91 1556.33 9822.55 1556.34 9843.43 1556.45 9850.76 1556.57
 9892.17  1556.9 9894.08 1556.92 9894.75 1556.92 9895.97 1556.92  9900.3 1556.91
 9902.58  1556.9 9904.71 1556.88 9909.36 1556.81 9910.17  1556.8 9910.59  1556.8
 9911.26  1556.8 9912.65 1556.78 9913.61 1556.76 9915.86 1556.73  9916.5 1556.73
 9921.07  1556.7 9933.18 1556.48    9934 1556.45 9934.69 1556.42 9937.16 1556.38
 9953.28  1556.3 9955.91 1556.21 9964.68 1556.07 9967.34 1556.02 9967.77    1556
 9975.82  1555.6 9978.53 1555.45 9981.46 1554.23 9981.94    1554  9982.5 1553.75
 9983.57  1553.3 9985.77  1552.3 9986.59    1552 9988.97 1551.05 9991.39    1550
 9991.89  1549.8 9992.46  1549.6 9992.63 1549.53 9997.48 1549.42   10000 1549.25
10009.11  1549.110010.45 1549.3810012.68 1549.7710013.95    155010022.21 1551.49
 10024.6    155210026.97  1552.510034.02    155410035.07 1554.29 10035.4 1554.33
10036.46  1554.310042.41    155410045.82 1553.8710046.07 1553.8510048.32 1553.91
10050.19    155410088.99 1555.4710096.89 1555.7610099.95 1555.8710101.06 1555.91
 10101.4  1555.910103.34    1556 10104.4 1556.0210115.28 1556.2110136.51 1556.55
10177.94  1556.610206.21 1556.7410207.76 1556.7410209.64  1556.710211.61 1556.63
 10214.8  1556.610224.47 1556.4210238.33 1556.2110243.48 1556.1410252.43    1556
10254.04  1555.910256.74 1555.83 10256.9 1555.8210257.69 1555.5710262.09 1554.19
10262.69    155410263.38 1553.7910269.07    155210271.56 1551.2410271.92 1551.13
10275.12  1550.910280.21 1550.4610285.04 1551.7410285.69 1551.9210285.82 1551.95
 10285.9    155210286.01    155210286.09 1552.0210293.53    155410293.96 1554.12
10294.14  1554.210294.86 1554.3410300.94    155610302.04 1556.17 10302.3 1556.21
10308.24    155610309.68    155610312.55 1555.8910315.16 1555.82   10318 1555.75
10319.77  1555.710322.51 1555.6610328.48  1555.510338.66 1555.2710339.79 1555.37
10347.48    155610357.45 1556.7810368.23 1557.6810368.43  1557.710368.46  1557.7
 10368.5  1557.710371.97 1557.8710376.45    155810377.37 1558.0210377.49 1558.03
10381.36  1558.210383.06 1558.2210386.39 1558.36 10424.1 1559.5410425.13 1559.57
10425.87  1559.6 10440.2    156010453.36 1560.1410454.56 1560.15

Manning's n Values         num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9334.62     .06 9892.17     .06 9978.53    .045 10035.4    .05510256.74    .036
 10302.3     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9978.53 10035.4           217.35  381.23  448.24             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.77

INPUT
Description:
Station Elevation Data     num=     106
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9257.17    1558 9457.17  1555.7    9468  1555.5 9486.99 1555.32 9495.81 1555.17
  9504.6  1555.1 9514.93 1555.11 9518.77  1555.1 9522.54 1554.62  9527.8    1554
 9528.88 1553.89 9534.29 1553.23 9539.91  1553.6 9542.68    1554 9546.02 1554.26
 9548.03 1554.43 9549.32  1554.6 9551.98 1554.72 9560.28 1554.75 9570.31 1554.83
 9581.06 1554.78 9594.35 1554.72 9609.58 1554.61 9618.98 1554.65 9629.67 1554.72
 9650.43 1554.63 9664.46 1554.56 9677.14 1554.46 9702.14 1554.43 9712.59  1554.4
 9732.91  1554.7 9747.09 1554.78 9759.64 1554.77 9771.16 1554.69 9780.79  1554.6
 9794.12 1554.49 9804.13  1554.4  9815.5  1554.3 9835.15 1554.09 9843.48    1554
  9852.2 1553.92 9861.74 1553.86 9890.55 1553.66 9900.06 1553.86 9911.62  1554.1
 9912.15 1554.08 9912.84    1554 9914.24 1553.83 9917.39  1553.4 9921.37  1552.8
 9928.72 1552.63 9936.19 1552.42 9940.35  1552.3 9944.96 1552.17 9945.19  1552.1
 9945.56 1552.02 9945.72    1552 9953.69 1550.05 9953.89    1550 9954.14  1549.9
 9961.63    1548 9963.06 1547.73  9963.4 1547.68  9973.7 1546.83 9983.65    1546
 9985.12 1545.88 9986.32 1545.79 9988.82 1545.58 9989.04 1545.67 9989.91    1546
 9992.33 1546.89 9995.37    1548 9996.91 1548.5810000.42    155010002.79  1550.8
10006.33    155210008.23 1552.6910011.94    155410012.18 1554.0910013.61  1554.6
10014.28 1554.8510018.54 1554.8410066.23 1554.8810086.76 1554.8810097.53  1554.8
10130.49    155510135.02 1555.0110172.88  1554.310196.21    155410197.82  1553.9
10200.91 1553.8410201.68 1553.8110202.94  1553.710210.03 1553.4510210.94 1553.42
10212.24 1553.4710220.09 1553.8110225.74    155410231.42 1554.1410236.29 1554.28
10295.23    155610361.03 1556.8210380.84    155710387.15 1557.1310397.48 1557.55
10403.36 1557.84

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9257.17     .05 9570.31     .05 9911.62     .0410014.28     .0510135.02     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9911.6210014.28           210.81  279.94  312.97             .1       .3
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CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.72

INPUT
Description:
Station Elevation Data     num=       79
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
 9325.95     1556 9336.12 1555.88 9407.34 1554.88 9434.88  1554.2  9460.6 1553.93
  9470.2   1554.1 9481.25  1554.1    9490 1554.11  9513.1    1554 9517.84 1553.96
 9526.45   1553.9 9535.25 1553.86 9544.28 1553.81 9617.55 1553.64 9635.34 1553.57
 9650.94   1553.5 9664.21 1553.45 9674.85 1553.41 9683.75 1553.38 9691.46 1553.35
 9700.51   1553.3 9712.81  1553.3 9721.25  1553.2 9731.03 1553.23  9742.2  1553.2
 9751.44  1553.24 9760.81 1553.25 9846.78  1552.4 9914.09 1552.05 9922.46    1552
 9947.62  1551.22  9961.5 1550.82 9961.73  1550.7 9962.46 1550.43 9963.76    1550
 9968.43  1548.69 9970.82    1548 9975.86  1546.5 9977.77    1546 9979.96 1545.34
 9980.92  1545.06 9984.17 1544.97 9989.21  1544.8  9995.9 1544.7110002.51 1544.57
10004.68 1545.2710005.68 1545.6210006.89    154610012.21 1547.7210013.12    1548
10014.51 1548.3710020.08    155010020.68  1550.210025.84 1551.1310027.38 1551.26
10028.17 1551.3210030.35  1551.410041.02 1551.7710052.02  1551.910059.79    1552
10069.61 1552.0810079.13 1552.1310113.64 1552.7610162.63  1553.810171.74    1554
10172.37    155410184.05 1554.0610194.69 1554.09 10194.9  1554.110203.92 1554.12
10218.98  1554.410315.49 1555.3410324.47  1555.310339.11  1555.310350.57 1555.44
10359.19  1555.510372.16 1555.6910379.93 1555.7810390.38  1555.9

Manning's n Values         num=        3
     Sta   n Val      Sta   n Val      Sta   n Val
 9325.95     .05 9922.46     .0410025.84     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9922.4610025.84            293.43  329.52  369.98             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.65

INPUT
Description:
Station Elevation Data     num=       86
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
 9296.38     1556 9328.59 1555.62 9354.05 1555.19    9382 1554.79 9403.83  1554.3
 9423.66     1554 9437.47 1553.54 9450.66 1553.08 9565.97  1552.1 9586.66 1552.05
 9597.46     1552 9625.98 1551.84 9644.23  1551.7 9653.33 1551.65  9681.4 1551.68
 9687.28   1551.7 9696.82  1551.7 9738.78 1551.68 9752.03 1551.61 9760.06 1551.58
 9767.95   1551.5 9782.93 1551.48 9789.44 1551.45 9798.97  1551.4 9809.77  1551.4
 9819.47  1551.41 9826.53 1551.44 9836.41 1551.59 9841.87 1551.61 9943.26 1550.54
  9945.1  1550.51 9947.06 1550.33 9950.49    1550 9951.03 1549.95 9951.28 1549.93
 9951.85  1549.88 9954.53 1549.63 9955.32  1549.4 9961.08    1548  9964.1 1547.32
 9969.44     1546  9972.1  1545.3 9976.78    1544 9979.73 1543.24 9980.67 1542.99
 9991.85 1543.1710003.19 1543.3210003.33  1543.310004.25 1543.6210005.57    1544
10008.75  1545.110011.58    154610016.92  1547.910017.13    154810017.55 1548.15
10023.27     1550 10024.1 1550.3510024.24  1550.410040.84 1550.3410063.98 1550.37
10076.59  1550.410098.09 1550.5810117.89  1550.710137.87 1550.7810158.85 1550.62
10185.48  1550.410191.89 1550.3510223.34 1550.2210245.05 1550.54 10260.4  1550.9
10269.76  1551.110314.77    155210333.57 1552.4210354.57 1552.8110370.47 1553.17
10392.43 1553.0410398.61 1552.94 10408.5 1552.9710422.31 1552.9910431.36 1552.98
10441.83    155310471.78 1553.3410481.88 1553.4610492.39  1553.6 10503.1  1553.7
10508.62  1553.7

Manning's n Values         num=        3
     Sta   n Val      Sta   n Val      Sta   n Val
 9296.38     .05 9943.26     .0410024.24     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9943.2610024.24            501.27  499.86  500.22             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.56

INPUT
Description:
Station Elevation Data     num=      195
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
  9560.1     1552 9586.36  1551.3 9611.39 1550.66 9637.29    1550 9683.16 1548.82
 9716.76     1548 9723.08 1547.87 9729.11 1547.78 9730.55 1547.75  9732.8 1547.72
 9743.77   1547.8 9746.14 1547.77 9753.92 1547.79 9762.09 1547.81 9768.18 1547.78
 9770.81   1547.8 9777.89 1547.79  9777.9 1547.79 9782.32 1547.86 9784.86 1547.86
 9786.69   1547.9 9788.12 1547.88 9789.83 1547.91 9798.42 1547.96 9799.62 1547.96
 9800.92     1548 9808.02    1548 9808.96    1548 9812.98 1548.01 9816.19 1548.02
  9818.6     1548 9823.38 1548.06 9824.86 1548.07 9830.32 1548.07  9840.5 1548.06
 9864.18     1548 9864.86    1548  9865.3 1547.99 9869.55 1547.95 9885.75 1547.86
 9886.51   1547.8 9888.82 1547.78 9893.18 1547.65 9898.54 1547.52 9906.27  1547.2
 9912.68   1546.9 9914.56 1546.89 9914.63 1546.89 9914.69 1546.89 9916.65 1546.94
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 9922.32  1547.1 9927.55 1547.29 9936.95 1547.45 9941.47 1547.41 9941.89 1547.41
  9942.9  1547.4 9944.11 1547.42 9946.36 1547.42 9950.78 1547.44 9951.72 1547.45
  9953.7  1547.4 9960.45  1547.9 9968.04 1548.41 9968.65  1548.2 9974.92     1546
 9977.99  1544.9  9980.7    1544 9985.25 1542.49 9985.99  1542.2 9989.19 1542.08
 9990.92    1542 9991.48 1541.99 9995.66    1542   10000 1541.9810011.14 1541.98
10012.42    154210014.13    154210015.75    1542 10016.7 1542.0110020.97 1542.06
10022.85  1542.710026.47    1544 10029.7 1545.1410032.23    154610034.48 1546.86
10037.68    154810039.01 1547.8810041.16 1547.6910042.34 1547.5410043.34 1547.44
10044.09  1547.410044.72 1547.2810045.32 1547.2110045.88 1547.2610046.17 1547.29
10046.42  1547.310086.31 1547.8910087.21 1547.9110096.81    154810098.27 1548.05
10098.68    154810107.55    154810154.66  1547.110164.21 1546.91 10203.9 1546.62
10204.79  1546.610205.72 1546.55 10206.4 1546.5310207.68 1546.5710209.11 1546.61
10210.88  1546.710213.91 1546.71 10219.3 1546.7910225.73 1546.8210235.17 1546.93
10235.85  1546.910248.14 1547.6510253.86 1547.9110254.43 1547.9410256.26     1548
10257.89    154810260.47 1548.0710262.19  1548.110269.98 1548.1910273.64 1548.26
10276.65  1548.310283.82 1548.4610291.15 1548.5910291.47 1548.61 10292.4 1548.61
10298.67  1548.810300.52 1548.8210300.81 1548.8310301.25 1548.8310301.62 1548.83
10304.27  1548.8   10307 1548.7710309.85 1548.7510311.47 1548.7710314.25 1548.76
10316.68  1548.710319.01 1548.71 10320.2 1548.7210321.35 1548.7210322.43 1548.72
10325.24  1548.710326.56 1548.6910330.45 1548.6810331.66 1548.6310336.95 1548.61
 10338.3  1548.610339.66 1548.5710342.14 1548.6310349.68 1548.5910350.99  1548.6
10375.82  1548.710382.22 1548.6410384.72 1548.6410389.72 1548.6310393.15 1548.66
10396.85  1548.710405.26 1548.6810406.49 1548.47 10409.3 1548.4410411.93 1548.44
10414.92  1548.5 10419.1 1548.5510426.06 1548.6910434.76 1548.7410436.79 1548.78
10449.77  1548.910450.42 1548.8910452.76 1548.9210472.08  1548.910472.94 1548.89
 10473.4  1548.910474.91 1548.86 10476.3 1548.8710478.18 1548.8310480.93 1548.81
10484.69  1548.810491.75 1548.7810494.47 1548.8810496.17 1548.9510497.95 1548.98
10501.85    154910504.83 1548.9810509.58 1549.1810512.99 1549.2810514.78 1549.32
10517.37  1549.510524.96 1549.6510534.51    155010549.85  1550.710577.96 1551.89

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
  9560.1     .05 9869.55     .05 9968.04     .0410037.68     .0510283.82     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9968.0410037.68            407.49  424.91  417.75             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.48

INPUT
Description:
Station Elevation Data     num=      79
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9713.54  1548.2 9724.42    1548 9791.21  1546.5 9809.79 1546.08 9814.36 1545.98
 9825.84 1545.96 9826.04 1545.95 9833.31 1545.65 9836.95  1545.2 9845.75 1544.35
 9850.75  1543.8 9850.95  1543.7 9852.22    1544 9855.43 1544.38 9859.23  1544.9
 9863.84 1545.59 9873.98 1545.36 9877.79 1545.27 9913.56  1544.5 9922.12 1544.83
 9945.21 1545.14 9957.24  1545.3 9969.57 1545.48 9970.88  1545.5 9974.75 1544.14
 9980.74    1542 9986.17    1540 9986.88 1539.74 9987.99 1539.46 9993.39 1539.45
10016.72 1539.4310017.58 1539.6710024.57  1541.610026.04    154210034.03 1544.23
10045.11 1546.0410061.71    154610064.14 1545.9910077.21 1545.9810088.39 1545.98
10102.13    154610104.88    154610120.91 1546.0210131.25    154610139.09 1546.04
10168.24 1546.0310176.53 1546.0210193.29    154610201.86    1546 10255.7 1545.19
10266.73 1545.0310278.24  1544.810294.68 1544.6710324.84 1544.14 10337.8 1544.11
10355.65 1544.0510382.28 1543.8410395.44 1543.9610396.77    154410419.79 1544.07
10433.64  1544.110453.27 1544.5610477.01 1544.7610501.39 1545.1610515.29 1545.36
10550.48    154610574.72 1546.5910604.92 1547.0110619.78 1547.2110630.01 1547.43
10637.54  1547.410654.84 1547.6910680.87    154810694.05  1548.210713.07  1548.3
 10736.9  1549.210754.08  1549.410773.65  1549.710773.97  1549.7

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9713.54     .05 9863.84     .05 9970.88     .0410045.11     .0510201.86     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9970.8810045.11            515.83   509.1  474.96             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.38

INPUT
Description:
Station Elevation Data     num=     325
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9629.76  1549.9 9634.63 1549.63 9641.45 1549.27 9642.73 1549.11 9642.77  1549.1
  9642.8  1549.1 9642.83 1549.08 9642.88 1549.07    9643 1549.05 9643.11 1549.03
 9643.22    1549 9643.34 1548.99 9643.48 1548.97 9643.64 1548.96 9643.82 1548.94
 9644.05  1548.9 9644.29 1548.89 9644.56 1548.85 9645.36 1548.73 9646.29 1548.64
 9649.94    1548 9650.11 1547.99 9650.33 1547.96 9650.73 1547.87 9651.41 1547.76
 9656.35  1547.6 9658.02 1547.56 9663.09 1547.45 9667.59 1547.35 9671.82 1547.24
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  9677.8  1547.1 9680.28 1547.03 9684.94 1546.84 9690.96  1546.7  9709.2 1546.25
 9710.85  1546.1 9711.85 1546.13 9713.26 1546.05 9715.68 1546.12 9748.15 1546.42
 9748.87  1546.4 9749.89 1546.39 9751.85 1546.41  9754.1 1546.43 9755.92 1546.44
 9757.59  1546.4 9760.61  1546.5 9762.42 1546.53 9763.89 1546.56 9767.72 1546.53
 9770.18  1546.6 9773.03 1546.62 9778.45 1546.71 9780.68 1546.68 9788.86 1546.64
 9795.96  1546.7 9796.69 1546.66 9797.46 1546.49 9798.02 1546.35  9798.4 1546.24
 9798.72  1546.2 9798.99 1546.16 9799.18 1546.14 9799.37 1546.09 9799.57    1546
  9801.9  1545.6 9802.55 1545.49 9807.89 1545.26 9810.35 1545.21  9814.5 1545.07
 9818.48  1544.9 9822.83 1544.72 9822.97 1544.71 9823.32 1544.69 9826.26 1544.95
 9829.44  1545.3 9831.94 1545.54 9833.19 1545.68 9836.34 1545.96 9836.64 1545.94
 9838.86  1545.8 9839.44 1545.74 9841.65 1545.48 9842.62 1545.48 9844.96 1545.37
 9846.54  1545.4 9847.17 1545.38  9847.7 1545.39 9848.81 1545.32 9849.76 1545.32
 9852.03  1545.3 9852.57 1545.26 9854.21 1545.24 9856.05 1545.21 9856.66 1545.21
 9858.41  1545.2 9858.87 1545.15  9859.2 1545.15 9861.77    1545 9862.14    1545
  9863.9    1545 9864.17 1544.96 9866.61 1544.93 9866.85 1544.93 9869.64  1544.9
 9869.79  1544.9 9872.02 1544.77 9872.13 1544.77 9874.48 1544.69 9874.58 1544.69
 9876.93  1544.7 9877.12 1544.65 9878.99 1544.59 9880.85 1544.57 9880.98 1544.56
 9882.98  1544.5 9883.88 1544.48 9887.09  1544.5 9889.49 1544.54 9892.45 1544.55
 9894.94  1544.6 9896.62  1544.5 9898.05 1544.47 9899.51 1544.51 9901.17 1544.58
 9903.09  1544.6 9903.29 1544.57 9903.34 1544.57 9903.64 1544.56 9907.27 1544.47
 9919.81    1544 9923.46 1543.89 9927.17 1543.85 9928.07 1543.84  9928.9 1543.84
 9929.41  1543.8 9930.35 1543.82 9934.01 1543.75 9940.03  1543.6 9951.82 1543.31
 9980.15  1542.6 9980.18 1542.61  9981.7    1542 9983.84 1540.92 9984.47 1540.58
 9984.58  1540.5 9984.67 1540.39 9985.56    1540 9987.88  1538.9 9989.92    1538
 9991.29  1537.3 9992.49 1536.67   10000    153710006.31 1537.16 10022.5 1537.64
10022.62  1537.710023.38 1537.8110024.51    153810034.01 1539.9210034.38    1540
10034.72  1540.110036.75 1540.57 10043.7    1542   10044 1542.0810044.26 1542.14
10044.55  1542.110045.86 1542.1510048.96 1542.04 10049.4 1542.0510049.73 1542.05
10049.91    1542 10050.2 1542.0610052.38    154210084.04 1542.1710198.92 1542.45
10199.99  1542.410203.43 1542.4510209.48 1542.4610214.86 1542.4710219.78 1542.48
10228.22  1542.510236.11  1542.510238.47  1542.510240.86  1542.5   10243  1542.5
10244.83  1542.510246.28 1542.5210247.69 1542.5310249.11 1542.54 10252.6 1542.54
10253.65  1542.510258.11 1542.5410260.09 1542.53 10261.4 1542.5210262.03 1542.51
10264.77  1542.510268.24 1542.4810269.89 1542.4710277.62 1542.4410284.56 1542.41
10290.28  1542.410294.29 1542.3510300.34 1542.3110309.18 1542.2510322.18 1542.17
10339.91  1542.110355.66    154210357.41    154210364.27 1541.9910370.28 1541.99
10376.01    154210381.94 1541.9910386.99    154210389.55    154210391.69 1542.01
10402.51  1542.1 10410.8  1542.110420.47 1542.1410429.02 1542.1710436.86 1542.18
10444.28  1542.210450.01 1542.1910454.25 1542.1810465.52 1542.1110474.14 1542.07
10487.48    154210490.36    154210506.07 1541.9210506.45 1541.9110538.18 1541.75
10538.66  1541.810540.21 1541.7510541.14 1541.7510542.15 1541.7510543.29 1541.74
10544.57  1541.710545.91  1541.710547.37 1541.6710548.78 1541.6610569.24 1541.55
10570.68  1541.510572.61 1541.4910577.97  1541.410582.11 1541.3310606.11 1541.17
10609.62  1541.110613.61 1540.9910618.59 1540.9110622.38 1540.8710627.38  1540.8
10633.72  1540.710634.47 1540.6810639.31 1540.57 10697.4 1540.6310718.38 1540.65
10724.85  1540.710725.36 1540.6610737.31 1540.8110742.24 1540.8710745.76  1540.9
10749.92    154110753.06 1541.0510756.39 1541.1210759.89 1541.1810766.99 1541.22
10772.99  1541.3 10777.5 1541.2910788.28 1541.4110797.55  1541.5 10806.8 1541.61
10824.31  1541.810840.61    154210845.77 1542.1210847.62 1542.1510856.53 1542.33
10860.08  1542.410863.82 1542.4410867.34 1542.4910872.74 1542.5910875.42 1542.62
10877.46  1542.710879.75  1542.710884.63 1542.6710885.83 1542.6910889.37  1542.7
10889.47  1542.710889.51  1542.710889.52  1542.710889.54  1542.710889.59  1542.7
10889.61  1542.7 10890.2  1542.710894.31 1542.8510894.96 1542.8810898.42    1543
 10900.6  1543.110902.14 1543.1510903.52  1543.210904.79 1543.2110905.59  1543.2
10906.68 1543.16 10907.9 1543.1410909.35 1543.1210910.31 1543.0910911.27  1543.1
10912.22 1543.0210913.36 1542.97 10914.4 1542.9310918.44 1542.74 10920.5  1542.7
 10921.1 1542.6210922.21 1542.5310924.48 1542.4510928.68 1542.4810930.51  1542.5
10933.67  1542.610942.06 1542.7910957.74 1543.1110958.89 1543.1610965.68  1543.5
10968.32  1543.610977.85    154410986.21 1544.2711001.96 1544.7711033.86  1545.9

Manning's n Values          num=       4
     Sta   n Val     Sta   n Val     Sta   n Val
  9629.76     .05 9980.15     .04   10044     .0510444.28     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
       9980.15   10044            300.39  262.91  127.93              .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.33

INPUT
Description:
Station Elevation Data     num=     298
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9563.16  1547.5 9567.65 1547.44 9569.24 1547.42 9574.59 1547.33 9581.57  1547.2
 9583.31  1547.2 9584.14  1547.2  9584.9 1547.18 9585.81 1547.16 9586.19 1547.16
 9586.48  1547.2 9586.72 1547.14 9591.49 1547.08 9598.54 1547.24 9601.96 1547.22
 9604.83  1547.2  9606.9 1547.19 9609.55 1547.15 9610.47 1547.19 9612.31 1547.14
  9613.4  1547.1 9614.75 1547.12 9616.61    1547 9617.92 1546.99 9618.55 1546.98
 9620.12  1546.7 9621.45  1546.7 9623.21 1546.68 9624.38 1546.63  9626.5 1546.55
 9627.22  1546.6 9627.96 1546.55 9628.74 1546.57 9630.65 1546.57  9632.8 1546.35
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 9637.22  1546.2 9638.12 1546.16 9638.37 1546.16 9646.73 1546.09 9647.94 1546.13
 9648.77  1546.2 9650.32 1546.18 9650.77 1546.15 9652.85 1546.06 9653.67 1546.02
 9654.53    1546 9658.38    1546 9662.23 1545.96  9663.5  1545.9 9665.08 1545.89
 9675.12  1545.6 9675.35 1545.62  9677.3  1545.6 9677.74  1545.6 9679.57 1545.62
 9681.42  1545.6  9681.7 1545.64 9681.94 1545.64 9683.98 1545.59 9684.21 1545.58
 9684.46  1545.6 9687.12 1545.57 9687.36 1545.57 9690.31 1545.59 9690.74 1545.57
 9695.21  1545.6  9695.8 1545.56 9697.52 1545.57  9697.8 1545.57 9699.29 1545.56
 9699.56  1545.6 9699.83 1545.58 9705.54 1545.51 9705.82  1545.5 9707.49 1545.46
 9707.92  1545.4 9710.92 1545.35 9717.11 1545.22 9718.72 1545.18 9726.82 1545.08
  9730.6  1545.1 9732.55 1545.01 9732.59 1545.01 9732.76 1545.01 9733.23 1545.02
 9739.26  1544.9  9743.8 1544.72  9752.6 1544.41 9755.49  1544.3 9756.94 1544.26
 9758.52  1544.2 9764.39    1544 9805.36 1542.68 9820.05 1542.21 9822.84 1542.13
 9824.36  1542.1 9825.58 1542.05 9826.88 1542.03 9826.94 1542.03    9827 1542.03
 9827.05    1542 9827.11 1542.03 9827.22 1542.03 9827.29 1542.03 9827.37 1542.03
 9827.55    1542 9827.67 1542.03 9827.82 1542.04 9828.02 1542.04 9828.25 1542.04
 9828.73    1542 9829.31 1542.03 9831.11 1542.05 9837.33  1542.1 9850.61 1542.21
 9850.96  1542.1 9851.67    1542 9853.66 1541.65 9855.38  1541.3 9857.73  1540.7
 9859.42  1540.3 9863.98 1540.27 9868.94 1540.25  9879.4 1540.23 9883.81 1540.89
 9890.03    1542 9890.89 1542.12  9891.2 1542.17 9891.47 1542.22 9892.13 1542.21
 9903.61    1542 9906.93 1541.94 9907.09 1541.93 9907.28 1541.93 9910.85 1541.87
 9914.57  1541.8 9914.91 1541.83 9915.26 1541.82 9915.73 1541.81 9916.64 1541.78
 9918.71  1541.7 9920.22 1541.64 9922.04 1541.58 9924.49  1541.5 9928.44 1541.36
    9934  1541.2 9936.84 1541.05 9937.15 1541.06 9937.25 1541.06 9946.16 1541.17
 9951.97  1541.3 9960.52 1541.37 9965.41 1541.44 9975.45 1541.56 9977.43 1541.59
 9978.69  1541.2 9981.25 1540.43  9982.7    1540 9985.25 1539.23 9988.58 1538.24
 9989.22    1538 9989.96 1537.77 9990.94 1537.47 9993.18 1536.78   10000 1536.77
10037.31  1536.810038.75 1536.7610041.27 1537.1810043.35 1537.5210046.25    1538
10054.39  1539.410058.03    154010061.39 1540.5710067.24 1541.6110067.29 1541.61
10104.25  1540.910122.78  1540.910218.03 1541.0810221.32 1541.0610222.52 1541.06
10224.29    154110226.67 1541.0210228.36 1540.9910229.63 1540.9910230.74 1540.99
10231.88    154110233.23 1541.0110234.79 1541.0210238.12 1541.0410241.87 1541.06
10243.13  1541.110244.39 1541.0710245.71 1541.08 10247.2  1541.1   10249 1541.12
10250.92  1541.110252.89 1541.1710253.78  1541.210256.16 1541.1910260.72 1541.17
10262.14  1541.110267.08 1541.1910268.51 1541.1710273.27 1541.0710274.21 1541.03
10275.28    1541 10276.2 1540.98 10278.6    154110279.75 1541.0110282.54 1541.06
10308.84  1541.910312.55 1541.9210314.02 1541.9210314.77 1541.9210314.86 1541.91
10315.97  1541.910317.78 1541.9110320.01  1541.910321.27  1541.910321.83  1541.9
10321.85  1541.9   10322  1541.910322.26  1541.910322.61 1541.8910323.17 1541.89
10323.91  1541.910324.81 1541.8910325.61 1541.8910326.37 1541.8910327.17 1541.89
10327.85  1541.9 10328.4 1541.8910329.59 1541.8910330.83  1541.9 10332.7  1541.9
10334.76  1541.910336.94  1541.910339.12  1541.910343.01 1541.8810432.99 1540.93
 10436.4  1540.910443.36 1540.92 10446.5 1540.9110450.45 1540.9310600.71 1540.11
10606.13  1540.2 10611.1 1540.2210616.22 1540.2210616.42 1540.2210616.57 1540.22
 10616.7  1540.210616.81 1540.2210617.65 1540.2210617.66 1540.2210617.68 1540.22
10617.69  1540.2 10617.7 1540.2210617.71 1540.2210617.99 1540.2310630.73 1540.26
10719.53  1540.5   10734 1540.6910872.22 1541.5710873.77 1541.5710875.92 1541.56
10876.12  1541.610878.73 1541.5710881.19 1541.5610883.78 1541.5310884.56 1541.59
10893.55    154210900.12  1542.210904.66 1542.3710916.83 1542.7710919.74 1542.83
10928.95  1543.110934.94 1543.3110952.49 1543.7710953.15 1543.7510967.03    1544
10969.57  1544.1 10969.7 1544.0610969.87 1544.0710970.09 1544.0810970.34 1544.09
10971.09  1544.110972.42 1544.1510973.67  1544.210975.98 1544.28 10979.6 1544.41
10992.09  1544.811003.84 1545.2311006.41 1545.2911012.07 1545.5111014.97  1545.6
11016.97  1545.7 11017.8 1545.7311023.88    1546

Manning's n Values          num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9563.16     .05 9906.93     .05 9977.43     .0410067.24     .0510308.84     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9977.4310067.24           216.19  224.01  142.68             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.29

INPUT
Description:
Station Elevation Data    num=     142
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9418.65    1547 9430.99 1546.38  9448.3 1545.08 9452.25 1544.79  9465.4 1544.71
 9473.03  1544.8 9485.79 1544.61 9515.73 1544.17 9526.85    1544 9544.82 1543.75
 9559.88 1543.57    9583 1543.27 9584.36 1543.21 9592.05 1543.09 9612.41 1542.91
 9621.08 1543.15 9628.88 1543.34 9636.09  1541.7 9636.15  1541.7 9637.78    1542
 9645.76 1543.15 9649.06 1543.64 9666.56 1542.99  9693.5    1542 9708.28 1541.46
 9747.36    1540 9767.97 1539.59 9776.89 1539.52 9778.73    1539 9784.52 1537.44
 9793.19 1537.66 9804.94 1537.92 9805.66 1537.99  9805.8    1538 9807.47 1538.16
 9818.77 1539.19 9826.94 1539.27 9842.46 1539.36 9847.79  1539.4  9855.9 1538.94
  9884.1 1539.52 9909.12    1540 9942.77 1540.54 9942.92  1540.5 9943.12  1540.5
 9943.13  1540.5 9943.41  1540.5 9944.91 1540.53 9945.87  1540.5 9946.42  1540.5
 9950.45 1540.41 9965.59 1540.08 9968.95    1540 9969.44    1539 9969.63    1539
 9969.83    1539 9975.05 1538.89 9979.45    1538 9982.49  1537.4 9986.16 1536.63
  9989.2    1536 9991.29  1535.6 9992.19 1535.44 9993.57  1535.1 9997.15 1534.44
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 9997.41 1534.39 9998.22 1534.4610017.25    153610017.31    153610017.45 1536.02
10018.78 1536.0210019.78 1536.0210021.01 1536.02 10030.7  1536.110034.98  1536.1
10036.77 1536.1510039.56 1536.2110041.45 1536.49 10047.4  1537.310048.15 1537.41
10051.68    1538   10057 1538.79 10062.1 1539.6710062.23  1539.710062.57 1539.68
10063.45 1539.6610088.75    153910101.97  1539.310110.31  1539.510120.56    1540
10135.75 1540.0910148.38  1540.110165.59 1540.2610187.15  1540.310206.52  1540.3
10219.43  1540.210229.71 1540.1210245.95    154010266.63  1539.410275.59  1539.2
10282.93  1539.510294.62 1539.96 10299.4    154010312.75 1540.2610344.59    1540
10364.44 1539.8210369.43 1539.7610379.33 1539.5410388.91 1539.5210399.62 1539.53
10410.91  1539.610419.73 1539.7810436.73 1539.91 10447.6    154010506.31    1540
10510.55    154010520.92 1539.89 10530.7 1539.7610547.87 1539.58 10557.7 1539.63
10565.13  1539.7 10575.1  1539.810596.96 1539.8610604.97 1539.7510610.37  1539.6
10618.72 1539.6110634.21    154010726.73  1540.610755.06 1540.7810764.82  1540.8
10774.22 1540.9110785.69  1540.910801.46 1541.0310812.34 1541.0710822.56 1541.17
10833.78  1541.710844.03 1542.22 10848.8  1542.410859.42 1542.7410877.49  1543.2
10890.57 1543.6210899.49    1544

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9418.65     .05 9944.91     .0410063.45     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9944.9110063.45           228.41  206.07  172.48             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.25

INPUT
Description:
Station Elevation Data    num=     134
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9331.64  1541.9 9343.21  1541.5 9352.21 1541.13 9361.84  1540.4 9371.77 1539.97
 9381.69 1539.94 9391.69 1539.84 9402.07 1539.77 9412.64 1539.71 9422.58 1539.68
 9432.45  1539.6 9447.36 1539.57 9450.91 1539.56 9459.84 1539.54 9469.65 1539.52
 9470.89  1539.5 9480.35 1539.43 9481.73 1539.42 9494.26 1539.37 9502.63 1539.14
 9522.65 1539.03 9529.36 1538.87 9574.53  1538.6 9575.54 1538.64 9586.21    1538
 9590.37 1537.27 9591.48 1537.05 9593.07 1536.72 9593.26  1536.6 9594.37 1536.69
 9596.28  1536.7 9607.58 1536.79 9615.27  1536.8 9621.56  1537.7 9622.53 1537.91
 9625.33 1538.33 9631.57 1538.16 9640.34 1538.01 9645.96  1537.9 9676.43  1537.6
 9687.54 1536.99 9697.44 1536.96 9708.06 1537.16 9717.36 1537.33 9726.67  1537.6
 9734.59  1538.1 9824.91  1539.1 9840.98 1539.07 9862.04 1538.96 9934.67  1538.6
 9937.49    1538 9937.65 1538.03 9937.81    1538  9938.5 1537.87 9944.65  1536.7
 9948.15    1536 9950.16 1535.61  9953.2 1535.03 9974.83 1535.03 9975.38    1535
  9975.7 1534.99 9982.66    1534 9987.18  1533.4 9996.69    1532  9999.5  1531.5
 9999.79 1531.52  9999.8 1531.5210000.79    153210002.61 1532.6910005.51    1534
10007.05 1534.7610008.13 1535.2410009.73    153610013.25 1537.8510013.54    1538
10013.88 1538.1510014.03 1538.2310014.24 1538.3610015.93 1539.2110016.17  1539.2
10016.29 1539.1910016.35 1539.1910022.46  1539.110077.65 1539.0310102.46 1538.81
   10118 1538.5410122.71  1538.410134.86 1538.1710146.01    153810157.34 1537.71
10158.67 1537.7710159.28  1537.810163.27    153810182.69 1538.7310194.77  1539.1
10204.27 1539.3310204.88 1539.3510212.83 1538.96   10217  1538.710218.89 1538.67
10227.41    153810241.34 1537.6110242.33  1537.610258.63 1538.0910285.55 1538.32
10313.03  1538.510316.31 1538.5910349.65 1538.8510386.95 1539.1210396.78  1539.1
10407.14 1539.0210417.69 1538.8810423.16 1538.8910435.26 1538.9410447.23  1538.8
10460.44 1538.6510470.26  1538.610482.34 1538.4910491.64  1538.410501.87 1538.59
10512.61  1538.610523.56 1538.7410535.37 1538.8210542.81 1538.8910557.04 1539.03
10646.25 1539.8810655.44  1539.910670.26 1540.5310674.92  1540.710682.69 1541.03
10699.98 1541.5710703.23 1541.6910714.88 1541.9310722.42  1542.5

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9331.64     .05 9625.33     .05 9934.67     .0410015.93     .0510204.27     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9934.6710015.93           175.71  212.24  229.28             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 9331.64 9522.65    1542

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.21

INPUT
Description:
Station Elevation Data    num=     273
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9188.91  1543.2 9197.93 1542.74 9198.88 1542.74 9202.07 1542.59 9203.75 1542.52
 9207.05  1542.5 9223.64 1542.87 9228.21 1542.93 9230.35 1542.89  9231.1  1542.8
 9232.02  1542.8 9233.12 1542.78 9234.55 1542.76 9236.61 1542.74 9236.71 1542.74
 9238.22  1542.6 9243.62 1542.19 9244.28 1542.13  9245.1 1542.09 9245.26 1542.08
 9246.08  1542.1 9247.05 1542.17 9248.48 1542.17 9252.85 1542.26 9255.47    1542
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9256.46	1542	9256.97	1541.92	9257.49	1541.89	9257.56	1541.85	9263.87	1541.45
9269.4	1540.9	9279.53	1540.13	9280.53	1540.04	9281.25	1540	9281.85	1539.97
9283.17	1540	9286.87	1540.03	9287.06	1540.02	9287.25	1540.01	9287.59	1540
9295.32	1540	9298.05	1540.01	9298.69	1540.01	9299.87	1540.01	9305.12	1540.01
9307.97	1540	9311.81	1540	9312.82	1540	9315.3	1540	9317.42	1540
9322.07	1539.9	9323.42	1539.89	9325.24	1539.87	9329.19	1539.85	9332.18	1539.81
9337.3	1539.8	9341.56	1539.75	9341.81	1539.75	9345.37	1539.77	9345.95	1539.76
9348.13	1539.7	9348.41	1539.75	9350.87	1539.73	9352.8	1539.69	9355.94	1539.68
9357.96	1539.6	9359.92	1539.65	9361.4	1539.67	9362.94	1539.68	9365.91	1539.68
9369.38	1539.7	9371.04	1539.71	9374.74	1539.72	9377.11	1539.72	9381.34	1539.74
9383.47	1539.8	9385.07	1539.77	9400.44	1539.8	9404.78	1539.88	9404.88	1539.88
9407.2	1540	9411.33	1540.23	9413.15	1540.35	9414.42	1540.42	9418	1540.58
9419.52	1540.8	9420.86	1540.84	9421.54	1540.97	9424.41	1541.31	9424.59	1541.33
9425.32	1541.4	9428.56	1541.33	9430.44	1541.3	9432.26	1541.24	9433.91	1541.23
9436.47	1541.2	9438.67	1541.16	9442.58	1541.02	9444.31	1541.02	9445.39	1540.99
9447.46	1540.9	9456.81	1541.09	9458.06	1541.04	9458.93	1541.04	9460.21	1541
9461.84	1541	9463.07	1540.92	9480.16	1540.6	9500.31	1540.03	9500.5	1540.02
9501.24	1540	9502.56	1539.99	9502.73	1540	9502.97	1540	9504.51	1540
9505.04	1540.1	9507.06	1540	9535.61	1538.48	9542.95	1538	9547.03	1537.79
9549.28	1537.7	9555.83	1537.08	9562.74	1536.41	9572.16	1536.3	9578.31	1536.22
9591.96	1537.3	9593.08	1537.44	9598.3	1537.47	9638.9	1537.72	9654.36	1537.82
9662.24	1537.9	9667.17	1537.91	9683.49	1537.97	9684.54	1537.98	9685.25	1537.98
9685.69	1538	9686.1	1537.98	9690.99	1538	9698.92	1538.03	9723.46	1538.11
9734.53	1538.1	9741.36	1538.15	9764.77	1538.16	9777.95	1538.17	9782.56	1538.16
9783.86	1538.2	9792.9	1538.13	9801.16	1538.09	9809.58	1538.08	9817.57	1538.09
9824.59	1538.1	9832.47	1538.15	9841.66	1538.14	9852.77	1538.11	9863.02	1538.06
9868.56	1538	9875.44	1538.01	9884.79	1538	9915.51	1538	9917.21	1538
9932.6	1538.2	9938.13	1538.06	9942.19	1537.6	9942.21	1537.59	9942.46	1537.52
9946.35	1536.7	9950.25	1536	9956.76	1534.8	9957.03	1534.77	9958.24	1534.72
9960.82	1534.6	9968.26	1534	9978.17	1533.26	9995.76	1532	9996.29	1531.96
10000	1531.6	10004.9	1531.32	10005.24	1531.62	10005.67	1532	10006.59	1532.8
10006.64	1532.8	10006.83	1533.19	10007.83	1534	10010.11	1535.73	10010.88	1535.98
10010.91	1536	10010.93	1536.02	10013.53	1538	10013.83	1538.68	10013.83	1538.7
10013.84	1538.68	10013.86	1538.68	10014.3	1538.71	10014.91	1538.71	10014.96	1538.7
10015.14	1538.73	10015.22	1538.73	10015.32	1538.73	10015.99	1538.71	10023.84	1538.4
10029.14	1538.21	10030.5	1538.16	10037.91	1538	10071.98	1538	10112.08	1538
10128.6	1538	10132.1	1538	10143.29	1538	10157.7	1538	10166.54	1538
10189.28	1538	10216.73	1538.33	10228.05	1538.31	10250.04	1538.13	10251.36	1538.1
10255.51	1538.05	10262.83	1538	10262.87	1538	10314.48	1537.61	10316.06	1537.6
10324.32	1537.42	10325.66	1537.39	10329.01	1537.35	10330.63	1537.34	10333.09	1537.4
10336.86	1537.31	10340.6	1537.25	10344.34	1537.17	10348.4	1537.11	10349.29	1537.1
10350.89	1537.06	10350.91	1537.06	10352.22	1537.07	10354.57	1537.11	10356.86	1537.2
10357.48	1537.15	10357.77	1537.14	10358	1537.14	10358.2	1537.13	10358.3	1537.1
10358.51	1537.13	10358.84	1537.14	10363.13	1537.16	10379.9	1537.26	10413.1	1537.5
10506.5	1538	10538.9	1538.91	10577.52	1540	10590.36	1540.18	10617.89	1540.5
10636.07	1540.77	10645.78	1540.88	10651.72	1540.93	10655.62	1540.95	10659.12	1541
10704.67	1541.47	10708.49	1541.57	10709.15	1541.58	10710.23	1541.61	10711.85	1541.6
10716.76	1541.66	10738.3	1541.88	10742.96	1541.88	10745.57	1541.87	10747.38	1541.8
10748.83	1541.82	10748.88	1541.82	10749.19	1541.82	10749.49	1541.81	10750.08	1541.8
10751.03	1541.82	10755.98	1541.83	10804.67	1541.99				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9188.91	.05	9593.08	.05	9932.6	.04	10013.83	.05	10216.73	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9932.6	10013.83	316.01	333.28	361.06	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 1.15

INPUT
Description:
Station Elevation Data num= 192

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9457.12	1541.7	9459.82	1541.6	9460.49	1541.61	9461.47	1541.6	9463.91	1541.42
9472.19	1540.7	9472.86	1540.72	9473.78	1540.58	9481.06	1540.14	9481.26	1540.12
9481.45	1540.1	9482.65	1540	9486.76	1539.56	9488.86	1539.27	9496.06	1538
9499.81	1537.4	9500.77	1537.26	9506.25	1537.25	9510.9	1537.23	9517.04	1537.19
9521.82	1537.2	9536.27	1537.01	9537.69	1537.13	9547.21	1537.97	9550.31	1537.23
9553.04	1536.6	9553.98	1536.37	9554.37	1536.27	9555.62	1536	9555.78	1535.97
9555.88	1536	9556.09	1535.91	9556.79	1535.74	9557.04	1535.68	9573.94	1535.47
9577.86	1535.4	9578.36	1535.42	9578.38	1535.42	9581.77	1536	9586.49	1536.69
9587.47	1536.9	9594.62	1536.75	9607.49	1536.55	9641.43	1536	9643.88	1535.92
9643.93	1535.9	9644.53	1535.86	9653.12	1535	9658.95	1534.44	9662.35	1534.94
9669.3	1536	9670.25	1536.19	9670.73	1536.28	9674.16	1536.14	9676.02	1536.14
9678.24	1536.1	9679.88	1536.14	9681.6	1536.11	9685.58	1536	9687.69	1535.96
9688.6	1536	9688.96	1535.98	9689.2	1535.98	9690.39	1535.99	9690.97	1535.98
9707.48	1535.9	9714.79	1535.92	9726.7	1535.94	9727.18	1535.94	9727.66	1535.95
9728.31	1536	9734.33	1535.97	9735.13	1535.97	9747.29	1535.75	9747.96	1535.75
9751.85	1535.7	9753.45	1535.5	9757.57	1535.39	9763.86	1535.31	9778.42	1535.21

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 9782.79  1535.2 9788.73 1535.13  9796.2 1535.07 9804.28 1535.02 9808.43    1535
 9812.17    1535 9815.77 1535.03 9819.53 1535.09 9823.88 1535.15 9834.48 1535.27
 9859.34  1535.5 9868.72 1535.64 9879.91 1535.75 9893.19 1535.86  9900.2 1535.92
 9909.03    1536 9909.27    1536  9922.2 1536.02 9929.98 1536.03 9937.93 1536.03
  9938.5    1536 9939.06 1536.03 9939.82 1536.03 9941.49 1536.04  9942.4 1536.04
 9944.85    1536 9948.15 1536.08 9955.29 1536.15 9973.95 1536.31 9974.03 1536.28
 9974.57    1536 9977.68 1534.88 9979.65    1534 9984.55 1532.16 9984.87    1532
 9985.45  1531.7 9985.54 1531.68 9985.66 1531.65 9986.13 1531.47 9989.07 1530.31
 9989.54  1530.3 9989.75 1530.29   10000  1530.310010.84  1530.310017.46 1530.31
10018.94  1530.610019.32 1530.6210019.69 1530.6410025.53 1531.4610029.08    1532
 10030.8  1532.310036.24    153310041.11 1533.7610042.05  1533.910042.57    1534
10042.71    153410042.81 1534.0110063.69 1534.7910090.64 1535.8810091.69 1535.92
10092.09  1535.910092.38  1535.910097.64    153610097.67    1536 10097.7    1536
10097.79    153610098.73    153610100.93    1536 10102.8    1536 10104.1    1536
10104.51    153610116.27    153610124.93    153610129.65    153610161.29 1535.97
10167.93    153610169.27 1535.9710226.93    153610249.25 1535.58 10255.5 1535.48
 10266.5  1535.310291.88 1534.8210312.49 1534.4510314.39 1534.4410317.21 1534.36
10344.51  1535.110354.74 1535.3610359.04 1535.0710367.12  1534.510390.16 1535.12
10390.32  1535.110390.34 1535.1310393.98 1535.3910403.98    153610414.38 1536.69
10417.11  1536.810420.24 1536.9910421.24 1537.0510430.44 1537.2610440.95 1537.45
10448.93  1537.610469.82    1538 10481.6 1538.14 10488.2 1538.23   10491 1538.28
10495.23  1538.310500.73 1538.3910507.36 1538.4410514.54 1538.4810522.36  1538.5
10530.93  1538.510536.44 1538.54

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9457.12     .05 9670.73     .05 9973.95     .0410092.38     .0510226.93     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9973.9510092.38           270.67  320.65  330.52             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.09

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9424.78  1542.3 9438.03    1540 9444.86 1539.14 9455.87  1537.8  9465.1 1537.77
 9513.96 1536.83  9547.2    1536 9558.25 1535.57 9570.82 1535.53 9571.75 1535.55
 9581.16 1535.81 9588.74    1536 9592.71 1536.34 9597.13  1535.6 9606.69 1534.51
 9616.58 1534.49 9629.39 1534.45 9639.87 1535.75 9656.35 1535.24 9665.25 1534.52
 9672.06 1534.44 9696.32  1533.9 9704.29 1533.69 9727.94 1533.85 9753.78 1531.36
 9765.16  1532.6 9775.54 1533.71 9785.01  1533.9 9795.56  1534.1 9805.09 1533.71
 9814.96 1533.51 9868.69  1533.6 9882.68 1533.56  9892.3  1533.5 9913.24 1533.39
 9922.96 1533.19 9935.11 1532.78 9945.79 1532.84 9954.51  1532.7  9968.8  1533.6
 9972.58    1532  9977.8    1530 9986.13    152810003.17  1526.5 10005.4 1527.52
10011.55    153010014.74 1531.3710016.19    153210019.92 1533.4510021.22    1534
10079.98 1534.0210158.96    153410189.09 1533.3510203.91 1532.9710212.81  1532.7
10259.64  1533.1 10275.9  1533.310292.66 1533.4110362.59    153410371.83 1534.26
10385.76 1534.6510395.26 1534.8210408.74  1535.110415.43 1535.3110436.24 1535.96
10484.56 1537.9610485.32    153810507.37 1538.4210530.64  1538.8 10545.1 1538.99

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9424.78     .05 9795.56     .05  9968.8     .0410021.22     .0510158.96     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9968.810021.22           363.02  441.86  501.81             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.00

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9609.1    1540 9622.48 1538.14 9635.72    1536 9647.53    1534 9647.65 1533.98
 9654.24  1533.7 9670.53 1533.08 9680.63 1532.84 9690.55  1532.8 9704.07 1532.83
 9710.01 1532.76 9720.07    1532  9733.6  1531.2 9740.25 1531.01 9743.19  1531.3
 9751.03 1532.11 9760.37    1532 9772.86 1531.99 9795.97 1531.97 9824.69 1531.95
 9852.14 1531.94 9883.51 1531.94 9890.84 1530.23 9900.58    1528 9904.98    1527
 9913.27  1527.5 9919.94  1527.9 9921.56    1528 9930.83  1528.1 9963.18 1528.81
 9971.56  1528.4 9980.21    1528 9990.04  1527.510000.85 1527.0210013.35  1529.4
10023.33  1531.110030.32 1531.3210040.14 1531.4610047.82 1531.6210058.85 1531.83
10075.53 1531.4810076.47 1531.4210091.61 1530.1910124.03    153010154.62 1530.06
10220.28    153010249.01    153010263.59 1529.2810269.59  1529.410277.32  1529.7
10301.91 1530.1510331.14  1530.110339.77 1530.1510351.58    153010382.77 1529.73
10399.13 1529.5910430.94 1531.9510439.26 1532.5810450.46  1533.410466.22 1533.65
10476.31  1533.810509.97 1534.1910556.47 1534.57
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Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9609.1	.08	9751.03	.08	9883.51	.03	710058.85	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9883.51	10058.85	483.41	446.4	348.15	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 0.92

INPUT
Description:
Station Elevation Data num= 162

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9840.45	1535.9	9841.82	1535.8	9842.18	1535.8	9842.47	1535.79	9842.78	1535.79
9843.11	1535.8	9843.88	1535.77	9844.62	1535.76	9845.33	1535.75	9852.21	1535.48
9852.88	1535.5	9854.72	1535.36	9855.9	1535.32	9857.5	1535.25	9859.47	1535.14
9863.89	1534.9	9865.91	1534.81	9871.08	1534.57	9874.57	1534.33	9877.93	1534.15
9878.07	1534.1	9878.77	1534.06	9879.07	1534.04	9879.24	1534	9886.65	1532.94
9888.67	1532.6	9892.03	1532	9896.25	1531.22	9902.73	1530	9910.86	1528.47
9911.77	1528.3	9912.19	1528.28	9920.18	1528	9920.7	1527.98	9921.24	1527.97
9924.03	1527.9	9927.14	1527.79	9927.4	1527.81	9927.81	1527.82	9931.41	1527.83
9933.2	1527.9	9934.3	1528	9937.41	1528.21	9938.17	1528.23	9941.04	1528.38
9942.13	1528.4	9944.69	1528.56	9946.46	1528.59	9948.32	1528.62	9953.79	1528.77
9955.77	1528.8	9959.26	1528.62	9960.92	1528.65	9962.82	1528.69	9964.83	1528.7
9965.45	1528.7	9967.94	1528.74	9968.88	1528.77	9970.14	1528.72	9973.09	1528.62
9975.28	1528.5	9977.62	1528.35	9980.42	1528.22	9980.58	1528.05	9980.6	1528
9980.82	1527.8	9981.52	1527.32	9982.54	1526	9984.44	1524.46	9984.9	1524
9985.04	1523.9	9985.2	1523.71	9985.48	1523.48	9993.75	1523.65	10000	1523.7
10005.87	1523.8	10007.94	1523.98	10008.05	1523.99	10008.19	1524	10012.21	1524.31
10031.44	1525.8	10034.7	1526	10052.9	1526.83	10062.68	1527.32	10094.14	1527.11
10115.7	1527	10121.53	1527.48	10127.93	1528	10139.15	1528.91	10144.15	1529.32
10155.3	1529.2	10169.41	1529.23	10177.47	1529.18	10182.09	1528.91	10184.05	1528.9
10187.23	1528.91	10188.32	1528.89	10190.67	1528.87	10207.82	1528.73	10216.47	1528.67
10225.12	1528.6	10236.78	1528.53	10252.86	1528.41	10306.8	1528	10317.82	1527.59
10319.82	1527.5	10322.9	1527.46	10324.31	1527.42	10325.11	1527.43	10327.37	1527.45
10328.93	1527.4	10331.19	1527.35	10331.47	1527.34	10334.1	1527.37	10335.22	1527.39
10340.2	1527.3	10342.21	1527.37	10345.17	1527.43	10346.08	1527.43	10394.23	1526.34
10396.44	1526.3	10398.96	1526.28	10418.41	1526	10424.45	1525.78	10426.27	1525.72
10428.42	1525.6	10430.05	1525.59	10431.45	1525.78	10433.44	1526	10436.03	1526.3
10438.76	1526.5	10448.48	1526.84	10451.69	1526.91	10451.79	1526.92	10465.15	1527.58
10469.88	1527.8	10471.38	1527.9	10473.5	1528	10474.24	1528.04	10474.75	1528.07
10475.71	1528.2	10476.58	1528.23	10490.79	1529.29	10493.97	1529.53	10494.46	1529.54
10496.88	1529.6	10507.12	1529.9	10507.6	1529.91	10509.95	1530	10557.12	1531.31
10577.64	1532	10580.36	1532.05	10582.76	1532.08	10585.63	1532.15	10594.61	1532.42
10598.59	1532.5	10598.84	1532.56	10600.78	1532.59	10602.35	1532.6	10604.34	1532.61
10606.72	1532.6	10612.44	1532.64						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9840.45	.08	9970.14	.03	710144.15	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970.1	410144.15	0	0	0	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach 1	0.92	9700.0	1523.5	1532.1	1529.9	1532.4	0.001802	5.3	2850.4	692.1	0.4
Reach 1	0.92	9700.0	1523.5	1533.1	1529.9	1533.3	0.000921	4.3	3542.5	692.1	0.3
Reach 1	1.00	9700.0	1527.0	1533.1		1533.7	0.005523	7.5	2023.0	775.6	0.7
Reach 1	1.00	9700.0	1527.0	1533.4		1534.3	0.007325	9.0	1396.6	378.8	0.8
Reach 1	1.09	9700.0	1526.5	1535.7	1535.6	1536.5	0.007114	10.5	1883.5	858.5	0.7
Reach 1	1.09	9700.0	1526.5	1536.5	1536.4	1537.7	0.007458	11.6	1391.1	394.8	0.8
Reach 1	1.15	9700.0	1530.3	1537.9		1538.3	0.004619	7.2	2275.6	964.5	0.6
Reach 1	1.15	9700.0	1530.3	1538.9		1539.6	0.004713	8.2	1641.3	428.5	0.6
Reach 1	1.21	9700.0	1531.3	1539.6		1540.3	0.006993	9.1	2071.2	1052.1	0.7
Reach 1	1.21	9700.0	1531.3	1540.6		1541.4	0.005938	9.4	1695.2	557.9	0.7
Reach 1	1.25	9700.0	1531.5	1540.9	1540.1	1541.2	0.002811	6.3	2910.8	1323.8	0.5
Reach 1	1.25	9700.0	1531.5	1541.8	1540.8	1542.3	0.003399	7.7	2019.7	543.7	0.5
Reach 1	1.29	9700.0	1534.4	1541.6		1542.1	0.007271	8.1	2117.9	1125.1	0.7
Reach 1	1.29	9700.0	1534.4	1542.5		1543.2	0.005823	8.3	1682.2	520.1	0.6
Reach 1	1.33	9700.0	1536.8	1542.8		1543.3	0.006385	8.4	2193.3	1117.4	0.7
Reach 1	1.33	9700.0	1536.8	1543.6		1544.4	0.006576	9.3	1647.9	555.4	0.7
Reach 1	1.38	9700.0	1536.7	1544.0	1543.6	1544.4	0.005587	8.4	2265.2	1055.5	0.6
Reach 1	1.38	9700.0	1536.7	1544.9		1545.6	0.005900	9.3	1756.9	569.8	0.7
Reach 1	1.48	9700.0	1539.4	1547.0		1547.9	0.008731	10.6	1712.8	837.9	0.8
Reach 1	1.48	9700.0	1539.4	1547.9		1549.2	0.008641	11.4	1293.7	399.1	0.8
Reach 1	1.56	9700.0	1542.0	1550.1		1550.7	0.005011	9.0	2082.6	901.2	0.6
Reach 1	1.56	9700.0	1542.0	1551.0		1551.8	0.004277	9.1	1627.1	377.3	0.6
Reach 1	1.65	9700.0	1543.0	1552.9	1552.9	1554.0	0.006583	10.6	1741.5	880.9	0.7
Reach 1	1.65	9700.0	1543.0	1553.2		1555.1	0.008667	12.5	1093.7	301.9	0.8
Reach 1	1.72	9700.0	1544.6	1555.1		1555.9	0.004855	8.9	1976.3	893.8	0.6
Reach 1	1.72	9700.0	1544.6	1556.1		1557.0	0.004066	8.9	1437.9	295.3	0.6
Reach 1	1.77	9700.0	1545.6	1556.4		1557.2	0.004862	8.7	2021.9	934.1	0.6
Reach 1	1.77	9700.0	1545.6	1557.2		1558.2	0.005097	9.6	1392.5	345.2	0.6
Reach 1	1.84	9700.0	1549.1	1558.4		1558.9	0.004741	8.3	2133.2	878.6	0.5
Reach 1	1.84	9700.0	1549.1	1559.3		1560.0	0.003908	8.2	1637.2	360.0	0.5
Reach 1	1.90	9700.0	1550.9	1560.2		1561.2	0.008112	11.2	1894.3	954.5	0.7
Reach 1	1.90	9700.0	1550.9	1560.9		1561.7	0.005299	9.6	1907.2	619.9	0.6
Reach 1	1.99	9700.0	1556.3	1563.3	1561.8	1563.6	0.004200	6.4	2402.0	1214.2	0.5
Reach 1	1.99	9700.0	1556.3	1563.4	1562.3	1564.1	0.006745	8.2	1509.9	362.3	0.6
Reach 1	2.08	8400.0	1558.5	1565.6		1565.9	0.004817	7.2	2305.1	1035.7	0.5

Reach 1	2.08	8400.0	1558.5	1566.5		1567.0	0.004706	7.9	1721.6	481.9	0.5
Reach 1	2.13	8400.0	1559.1	1567.2	1567.2	1568.8	0.015243	13.2	1115.0	857.2	0.9
Reach 1	2.13	8400.0	1559.1	1568.0	1567.3	1569.0	0.008294	10.7	1302.9	392.0	0.7
Reach 1	2.19	8400.0	1560.6	1570.1	1568.4	1570.5	0.003213	6.8	2093.9	1295.9	0.4
Reach 1	2.19	8400.0	1560.6	1570.1	1568.6	1570.8	0.005496	8.6	1332.2	254.3	0.6
Reach 1	2.28	8400.0	1564.1	1572.0		1573.2	0.009810	10.8	1157.0	376.0	0.8
Reach 1	2.28	8400.0	1564.1	1572.9		1574.4	0.009629	11.3	918.6	163.7	0.7
Reach 1	2.35	8400.0	1564.9	1574.9		1575.7	0.006118	8.5	1359.0	402.0	0.6
Reach 1	2.35	8400.0	1564.9	1575.8		1576.8	0.005684	9.0	1103.3	206.2	0.6
Reach 1	2.41	8400.0	1565.5	1576.7		1577.3	0.003596	7.8	2066.2	685.5	0.5
Reach 1	2.41	8400.0	1565.5	1577.6		1578.4	0.004129	9.0	1451.1	290.0	0.5
Reach 1	2.46	8400.0	1568.8	1577.7		1579.2	0.014037	11.9	1056.6	358.2	0.9
Reach 1	2.46	8400.0	1568.8	1578.7		1580.3	0.010182	11.4	984.4	225.8	0.8
Reach 1	2.52	8400.0	1571.6	1580.7		1581.0	0.002670	6.1	2021.3	483.0	0.4
Reach 1	2.52	8400.0	1571.6	1581.4		1581.8	0.002495	6.3	1757.0	312.6	0.4
Reach 1	2.58	8400.0	1573.7	1581.6		1582.5	0.007914	9.9	1449.1	539.5	0.7
Reach 1	2.58	8400.0	1573.7	1582.1		1583.4	0.008583	10.9	1024.2	208.3	0.7
Reach 1	2.64	8400.0	1576.0	1583.9		1584.6	0.005797	8.4	1559.1	461.7	0.6
Reach 1	2.64	8400.0	1576.0	1584.7		1585.5	0.005555	8.6	1358.4	322.4	0.6
Reach 1	2.69	8400.0	1576.5	1585.4		1585.8	0.003609	6.7	1983.9	654.4	0.5
Reach 1	2.69	8400.0	1576.5	1586.2		1586.5	0.002517	6.0	2013.6	525.9	0.4
Reach 1	2.73	6500.0	1578.3	1586.2		1586.9	0.007786	8.7	1182.3	380.5	0.7
Reach 1	2.73	6500.0	1578.3	1586.7		1587.5	0.008030	9.2	976.2	230.0	0.7
Reach 1	2.77	6500.0	1581.8	1587.8		1588.8	0.010470	9.1	962.9	362.9	0.8
Reach 1	2.77	6500.0	1581.8	1588.3		1589.8	0.012997	10.7	750.6	206.6	0.9
Reach 1	2.84	6500.0	1584.1	1590.7		1591.3	0.005709	7.5	1142.5	326.8	0.6
Reach 1	2.84	6500.0	1584.1	1591.7		1592.2	0.004483	7.0	1108.4	227.0	0.5
Reach 1	2.88	6500.0	1586.8	1592.6	1592.6	1593.7	0.015700	11.5	897.5	364.9	0.9
Reach 1	2.88	6500.0	1586.8	1593.4	1593.4	1594.8	0.015871	12.2	807.4	244.6	0.9
Reach 1	2.93	6500.0	1589.6	1595.6		1596.1	0.005621	7.2	1245.6	369.3	0.6
Reach 1	2.93	6500.0	1589.6	1596.4		1597.1	0.004977	7.5	1059.2	208.8	0.5
Reach 1	2.97	6500.0	1590.8	1597.3	1597.3	1598.6	0.012098	11.5	945.8	345.7	0.8
Reach 1	2.97	6500.0	1590.8	1597.6	1597.6	1599.3	0.013468	12.6	727.0	186.7	0.9
Reach 1	3.05	6500.0	1591.8	1600.9	1599.5	1601.6	0.004638	8.1	1135.0	272.5	0.5
Reach 1	3.05	6500.0	1591.8	1601.6		1602.5	0.004595	8.6	948.2	158.0	0.5
Reach 1	3.10	6500.0	1594.4	1602.1		1603.0	0.008068	9.0	977.5	275.3	0.7
Reach 1	3.10	6500.0	1594.4	1602.7		1604.1	0.009442	10.4	729.4	144.5	0.8
Reach 1	3.15	6500.0	1596.0	1604.1		1604.8	0.005743	8.7	1123.9	291.3	0.6
Reach 1	3.15	6500.0	1596.0	1605.1		1606.0	0.005004	8.9	958.4	159.8	0.6
Reach 1	3.24	6500.0	1598.8	1607.2		1608.1	0.008613	9.5	1025.6	292.1	0.7

Reach 1	3.24	6500.0	1598.8	1607.9		1609.2	0.009145	10.3	809.8	167.5	0.7
Reach 1	3.31	6500.0	1601.9	1610.2		1610.8	0.005724	7.8	1232.5	342.0	0.6
Reach 1	3.31	6500.0	1601.9	1611.2		1612.0	0.005978	8.5	994.9	201.1	0.6
Reach 1	3.40	6500.0	1604.1	1612.7		1613.6	0.006172	9.3	1073.4	283.4	0.6
Reach 1	3.40	6500.0	1604.1	1613.7		1614.8	0.005872	9.9	849.4	139.8	0.6
Reach 1	3.46	6500.0	1605.3	1614.4		1615.7	0.007451	10.8	891.1	228.8	0.7
Reach 1	3.46	6500.0	1605.3	1615.4		1616.9	0.007264	10.7	733.1	114.4	0.6
Reach 1	3.54	6500.0	1609.9	1617.9		1618.6	0.005383	7.7	1115.4	292.4	0.6
Reach 1	3.54	6500.0	1609.9	1618.7		1619.5	0.004835	8.0	953.4	168.0	0.5
Reach 1	3.61	6500.0	1611.3	1620.2		1621.5	0.009602	11.4	925.3	293.0	0.8
Reach 1	3.61	6500.0	1611.3	1620.6		1622.5	0.010794	12.6	663.5	121.8	0.8
Reach 1	3.65	6500.0	1613.9	1622.3		1622.7	0.003826	7.1	1440.0	407.6	0.5
Reach 1	3.65	6500.0	1613.9	1623.2		1623.8	0.003397	7.3	1183.5	200.0	0.5
Reach 1	3.70	3300.0	1615.5	1623.3		1623.5	0.002866	4.9	911.5	268.9	0.4
Reach 1	3.70	3300.0	1615.5	1624.2		1624.5	0.002202	4.8	829.0	165.0	0.4
Reach 1	3.73	3300.0	1618.9	1624.0		1624.2	0.004238	5.0	881.6	328.0	0.5
Reach 1	3.73	3300.0	1618.9	1624.8		1625.2	0.005120	6.0	700.8	183.6	0.5
Reach 1	3.76	3300.0	1620.2	1624.8		1625.2	0.008771	6.7	776.0	394.9	0.7
Reach 1	3.76	3300.0	1620.2	1625.7		1626.4	0.010670	8.6	513.8	172.1	0.8
Reach 1	3.79	3300.0	1621.1	1626.2		1626.6	0.008578	7.6	764.2	409.4	0.7
Reach 1	3.79	3300.0	1621.1	1627.2		1628.0	0.008157	8.6	503.5	128.7	0.7
Reach 1	3.84	3300.0	1621.6	1628.2	1627.9	1629.0	0.008215	8.8	623.9	303.4	0.7
Reach 1	3.84	3300.0	1621.6	1629.2		1630.4	0.008471	10.0	408.0	84.8	0.7

ERRORS WARNINGS AND NOTES
Errors Warnings and Notes for Plan : WMP-UT-EX100

River: Unnamed Trib Reach: Reach 1 RS: 3.84 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.84 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.79 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.79 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.76 Profile: Existing-100yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.76 Profile: Encr Ex 100
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.73 Profile: Encr Ex 100
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.70 Profile: Existing-100yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.70 Profile: Encr Ex 100
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.65 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.65 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.61 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.61 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.54 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.54 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.46 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.46 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.40 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.40 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.31 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.31 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.24 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.24 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.15 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.15 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.10 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.10 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.05 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.05 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.97 Profile: Existing-100yr

Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The 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.
River: Unnamed Trib Reach: Reach 1 RS: 2.97 Profile: Encr Ex 100
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:The parabolic search method failed to converge on critical depth. The program will try the cross section
slice/secant method to find critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 2.93 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.93 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.88 Profile: Existing-100yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.88 Profile: Encr Ex 100
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.

Warning:The parabolic search method failed to converge on critical depth. The program will try the cross section
slice/secant method to find critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 2.84 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.84 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.77 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.77 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.73 Profile: Existing-100yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.73 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.69 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 2.69 Profile: Encr Ex 100
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.64 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.64 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.58 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.58 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.52 Profile: Existing-100yr

Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.52 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.46 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.46 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.41 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.41 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.35 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.35 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.28 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.28 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.19 Profile: Existing-100yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.19 Profile: Encr Ex 100
Warning:The energy loss was 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:The parabolic search method failed to converge on critical depth. The program will try the cross section
slice/secant method to find critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 2.13 Profile: Existing-100yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The 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.
River: Unnamed Trib Reach: Reach 1 RS: 2.13 Profile: Encr Ex 100
Warning:The energy loss was 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:The parabolic search method failed to converge on critical depth. The program will try the cross section
slice/secant method to find critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: Unnamed Trib Reach: Reach 1 RS: 2.08 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.08 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.99 Profile: Existing-100yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.99 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.90 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.90 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.84 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.84 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.77 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.77 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.72 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.72 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.65 Profile: Existing-100yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 1.65 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.56 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.56 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.48 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.48 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.38 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.38 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.33 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.33 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.29 Profile: Existing-100yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.25 Profile: Existing-100yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.25 Profile: Encr Ex 100
Warning:The parabolic search method failed to converge on critical depth. The program will try the cross section
slice/secant method to find critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 1.21 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.21 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.15 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.15 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.09 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.09 Profile: Encr Ex 100
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:The parabolic search method failed to converge on critical depth. The program will try the cross section
slice/secant method to find critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 1.00 Profile: Existing-100yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.00 Profile: Encr Ex 100
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.

HEC-RAS Low Impact Structural Alternative Model

HEC-RAS September 1998 Version 2.2
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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

PROJECT DATA
Project Title: Watercourse Master Plan - Sonoran Wash
Project File : Wmp_UT.prj
Run Date and Time: 7/1/01 4:13:28 PM

Project in English units

Project Description:
Skunk Creek Watercourse Master Plan, Sonoran Wash Model

by Stantec
Consulting Inc. for the ASL Consulting and the Flood Control District of
Maricopa County
FCD: 99-23

Project Start Date: September 1999

PLAN DATA

Plan Title: Low Impact Alt Existing 100yr
Plan File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SW WMP\Wmp_UT.p12

Geometry Title: New Existing Cond Geo for 100yr
Geometry File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SW WMP\Wmp_UT.g04

Flow Title : Team Existing Cond 100yr
Flow File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SW WMP\Wmp_UT.f06

Plan Description:
Team Alternative
Use Profile 2 for encroached conditions.

Plan Summary Information:
Number of: Cross Sections = 49 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 0

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

Computation Options
Critical depth computed at all cross sections
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

Encroachment Data
Equal Conveyance = True
Left Offset = 0
Right Offset = 0

River = Unnamed Trib Reach = Reach 1

RS	Profile	Method	Value1	Value2
3.84	Encr Ex 100	1	9819.6	410126.17
3.79	Encr Ex 100	1	9733.8	410138.13
3.76	Encr Ex 100	1	9834.3	110227.54
3.73	Encr Ex 100	1	9916.6	610238.12
3.70	Encr Ex 100	1	9797.9	10066.71
3.65	Encr Ex 100	1	9769.5	110176.82
3.61	Encr Ex 100	1	9878.3	10170.91
3.54	Encr Ex 100	1	9927.67	10220.3
3.46	Encr Ex 100	1	9918.2	710146.97
3.40	Encr Ex 100	1	992010164.67	
3.31	Encr Ex 100	1	979510078.61	
3.24	Encr Ex 100	1	9760	10040
3.15	Encr Ex 100	1	9855.0	410146.22
3.10	Encr Ex 100	1	9959.5	610234.68
3.05	Encr Ex 100	1	9940.2	110212.65
2.97	Encr Ex 100	1	9753.47	10105
2.93	Encr Ex 100	1	9740.78	10120
2.88	Encr Ex 100	1	9704.61	10095
2.84	Encr Ex 100	1	9744.33	10095
2.77	Encr Ex 100	1	9677.15	10095
2.73	Encr Ex 100	1	9659.87	10070
2.69	Encr Ex 100	1	9692.6	10380.28
2.64	Encr Ex 100	1	9834.1	110296.17
2.58	Encr Ex 100	1	9801.8	810340.35
2.52	Encr Ex 100	1	9808.7	10290.88
2.46	Encr Ex 100	1	9726.2	510087.56
2.41	Encr Ex 100	1	9696.2	210384.03
2.35	Encr Ex 100	1	9710.9	810112.41
2.28	Encr Ex 100	1	9822.0	810197.91
2.19	Encr Ex 100	1	9798.04	10300
2.13	Encr Ex 100	1	9636.5	10285
2.08	Encr Ex 100	1	9624.76	10430
1.99	Encr Ex 100	1	988010916.29	
1.90	Encr Ex 100	1	9670	10535
1.84	Encr Ex 100	1	958510386.92	
1.77	Encr Ex 100	1	9480	10095
1.72	Encr Ex 100	1	9495	10080
1.65	Encr Ex 100	1	959010136.72	
1.56	Encr Ex 100	1	970010239.98	
1.48	Encr Ex 100	1	9825	10450
1.38	Encr Ex 100	1	9900	10770
1.33	Encr Ex 100	1	9840	10760
1.29	Encr Ex 100	1	9760	10670
1.25	Encr Ex 100	1	9580	10520
1.21	Encr Ex 100	1	9540	10450
1.15	Encr Ex 100	1	9545	10463.4
1.09	Encr Ex 100	1	9700	10429.6
1.00	Encr Ex 100	1	981010446.05	
0.92	Encr Ex 100	1	9891.4	710583.58

River = Unnamed Trib Reach = Reach 1

RS	Profile	Method	Value1	Value2
3.84	PF 3	1	9797.2	10125.69
3.79	PF 3	1	972710123.11	
3.76	PF 3	1	9834.9	910228.13
3.73	PF 3	1	9917.9	110240.36
3.70	PF 3	1	9799.3	110068.09
3.65	PF 3	1	9764.8	10172.35
3.61	PF 3	1	9878.5	810170.58
3.54	PF 3	1	9925.3	210218.21
3.46	PF 3	1	9923.8	910152.54
3.40	PF 3	1	992010158.36	
3.31	PF 3	1	979510076.34	
3.24	PF 3	1	9760	10040
3.15	PF 3	1	9850.9	310142.27
3.10	PF 3	1	9947.2	410222.24
3.05	PF 3	1	9930.21	10202.4
2.97	PF 3	1	9751.29	10105
2.93	PF 3	1	9744.2	10120
2.88	PF 3	1	9685.19	10095
2.84	PF 3	1	9741.02	10095
2.77	PF 3	1	9677.73	10095
2.73	PF 3	1	9649.15	10070
2.69	PF 3	1	9691.0	710368.92
2.64	PF 3	1	9834.2	610295.76
2.58	PF 3	1	9800.68	10339.6
2.52	PF 3	1	9805.5	410288.03
2.46	PF 3	1	9731.1	210093.09
2.41	PF 3	1	9697.8	110390.53
2.35	PF 3	1	9710.7	310112.71

2.28	PF 3	1	9823.01	10197.78
2.19	PF 3	1	9791.73	10300
2.13	PF 3	1	9532.44	10285
2.08	PF 3	1	9598.68	10430
1.99	PF 3	1	9880	10882.66
1.90	PF 3	1	9670	10535
1.84	PF 3	1	9585	10386.37
1.77	PF 3	1	9480	10095
1.72	PF 3	1	9495	10080
1.65	PF 3	1	9590	10140
1.56	PF 3	1	9700	10240
1.48	PF 3	1	9825	10450
1.38	PF 3	1	9900	10770
1.33	PF 3	1	9840	10760
1.29	PF 3	1	9760	10670
1.25	PF 3	1	9580	10520
1.21	PF 3	1	9540	10450
1.15	PF 3	1	9545	10462.14
1.09	PF 3	1	9700	10431.25
1.00	PF 3	1	9810	10444.57
0.92	PF 3	1	9896.39	10541.89

River = Unnamed Trib Reach = Reach 1

RS	Profile	Method	Value1	Value2
3.84	PF 4	1	9797.21	10125.69
3.79	PF 4	1	9727	10123.11
3.76	PF 4	1	9834.99	10228.13
3.73	PF 4	1	9917.91	10240.36
3.70	PF 4	1	9799.31	10068.09
3.65	PF 4	1	9764.81	10172.35
3.61	PF 4	1	9878.58	10170.58
3.54	PF 4	1	9925.32	10218.21
3.46	PF 4	1	9923.89	10152.54
3.40	PF 4	1	9920	10158.36
3.31	PF 4	1	9795	10076.34
3.24	PF 4	1	9760	10040
3.15	PF 4	1	9850.93	10142.27
3.10	PF 4	1	9947.24	10222.24
3.05	PF 4	1	9930.21	10202.4
2.97	PF 4	1	9751.29	10105
2.93	PF 4	1	9744.2	10120
2.88	PF 4	1	9685.19	10095
2.84	PF 4	1	9741.02	10095
2.77	PF 4	1	9677.73	10095
2.73	PF 4	1	9649.15	10070
2.69	PF 4	1	9691.07	10368.92
2.64	PF 4	1	9834.26	10295.76
2.58	PF 4	1	9800.68	10339.6
2.52	PF 4	1	9805.54	10288.03
2.46	PF 4	1	9731.12	10093.09
2.41	PF 4	1	9697.81	10390.53
2.35	PF 4	1	9710.73	10112.71
2.28	PF 4	1	9823.01	10197.78
2.19	PF 4	1	9791.73	10300
2.13	PF 4	1	9532.44	10285
2.08	PF 4	1	9598.68	10430
1.99	PF 4	1	9880	10882.66
1.90	PF 4	1	9670	10535
1.84	PF 4	1	9585	10386.37
1.77	PF 4	1	9480	10095
1.72	PF 4	1	9495	10080
1.65	PF 4	1	9590	10140
1.56	PF 4	1	9700	10240
1.48	PF 4	1	9825	10450
1.38	PF 4	1	9900	10770
1.33	PF 4	1	9840	10760
1.29	PF 4	1	9760	10670
1.25	PF 4	1	9580	10520
1.21	PF 4	1	9540	10450
1.15	PF 4	1	9545	10462.14
1.09	PF 4	1	9700	10431.25
1.00	PF 4	1	9810	10444.57
0.92	PF 4	1	9896.39	10541.89

River = Unnamed Trib Reach = Reach 1

RS	Profile	Method	Value1	Value2
3.84	PF 5	1	9797.21	10125.69
3.79	PF 5	1	9727	10123.11
3.76	PF 5	1	9834.99	10228.13
3.73	PF 5	1	9917.91	10240.36
3.70	PF 5	1	9799.31	10068.09

3.65	PF 5	1	9764.810	172.35
3.61	PF 5	1	9878.581	0170.58
3.54	PF 5	1	9925.321	0218.21
3.46	PF 5	1	9923.891	0152.54
3.40	PF 5	1	9920	10158.36
3.31	PF 5	1	9795	10076.34
3.24	PF 5	1	9760	10040
3.15	PF 5	1	9850.931	0142.27
3.10	PF 5	1	9947.241	0222.24
3.05	PF 5	1	9930.21	10202.4
2.97	PF 5	1	9751.29	10105
2.93	PF 5	1	9744.2	10120
2.88	PF 5	1	9685.19	10095
2.84	PF 5	1	9741.02	10095
2.77	PF 5	1	9677.73	10095
2.73	PF 5	1	9649.15	10070
2.69	PF 5	1	9691.071	0368.92
2.64	PF 5	1	9834.261	0295.76
2.58	PF 5	1	9800.68	10339.6
2.52	PF 5	1	9805.541	0288.03
2.46	PF 5	1	9731.121	0093.09
2.41	PF 5	1	9697.811	0390.53
2.35	PF 5	1	9710.731	0112.71
2.28	PF 5	1	9823.011	0197.78
2.19	PF 5	1	9791.73	10300
2.13	PF 5	1	9532.44	10285
2.08	PF 5	1	9598.68	10430
1.99	PF 5	1	9880	10882.66
1.90	PF 5	1	9670	10535
1.84	PF 5	1	9585	10386.37
1.77	PF 5	1	9480	10095
1.72	PF 5	1	9495	10080
1.65	PF 5	1	9590	10140
1.56	PF 5	1	9700	10240
1.48	PF 5	1	9825	10450
1.38	PF 5	1	9900	10770
1.33	PF 5	1	9840	10760
1.29	PF 5	1	9760	10670
1.25	PF 5	1	9580	10520
1.21	PF 5	1	9540	10450
1.15	PF 5	1	9545	10462.14
1.09	PF 5	1	9700	10431.25
1.00	PF 5	1	9810	10444.57
0.92	PF 5	1	9896.391	0541.89

River = Unnamed Trib Reach = Reach 1

RS	Profile	Method	Value1	Value2
3.84	PF 6	1	9797.21	0125.69
3.79	PF 6	1	9727	10123.11
3.76	PF 6	1	9834.991	0228.13
3.73	PF 6	1	9917.911	0240.36
3.70	PF 6	1	9799.311	0068.09
3.65	PF 6	1	9764.81	0172.35
3.61	PF 6	1	9878.581	0170.58
3.54	PF 6	1	9925.321	0218.21
3.46	PF 6	1	9923.891	0152.54
3.40	PF 6	1	9920	10158.36
3.31	PF 6	1	9795	10076.34
3.24	PF 6	1	9760	10040
3.15	PF 6	1	9850.931	0142.27
3.10	PF 6	1	9947.241	0222.24
3.05	PF 6	1	9930.21	10202.4
2.97	PF 6	1	9751.29	10105
2.93	PF 6	1	9744.2	10120
2.88	PF 6	1	9685.19	10095
2.84	PF 6	1	9741.02	10095
2.77	PF 6	1	9677.73	10095
2.73	PF 6	1	9649.15	10070
2.69	PF 6	1	9691.071	0368.92
2.64	PF 6	1	9834.261	0295.76
2.58	PF 6	1	9800.68	10339.6
2.52	PF 6	1	9805.541	0288.03
2.46	PF 6	1	9731.121	0093.09
2.41	PF 6	1	9697.811	0390.53
2.35	PF 6	1	9710.731	0112.71
2.28	PF 6	1	9823.011	0197.78
2.19	PF 6	1	9791.73	10300
2.13	PF 6	1	9532.44	10285
2.08	PF 6	1	9598.68	10430
1.99	PF 6	1	9880	10882.66
1.90	PF 6	1	9670	10535

1.84	PF 6	1	958510386.37	
1.77	PF 6	1	9480	10095
1.72	PF 6	1	9495	10080
1.65	PF 6	1	9590	10140
1.56	PF 6	1	9700	10240
1.48	PF 6	1	9825	10450
1.38	PF 6	1	9900	10770
1.33	PF 6	1	9840	10760
1.29	PF 6	1	9760	10670
1.25	PF 6	1	9580	10520
1.21	PF 6	1	9540	10450
1.15	PF 6	1	954510462.14	
1.09	PF 6	1	970010431.25	
1.00	PF 6	1	981010444.57	
0.92	PF 6	1	9896.3910541.89	

River = Unnamed Trib Reach = Reach 1

RS	Profile	Method	Value1	Value2
3.84	PF 7	1	9797.210125.69	
3.79	PF 7	1	972710123.11	
3.76	PF 7	1	9834.9910228.13	
3.73	PF 7	1	9917.9110240.36	
3.70	PF 7	1	9799.3110068.09	
3.65	PF 7	1	9764.810172.35	
3.61	PF 7	1	9878.5810170.58	
3.54	PF 7	1	9925.3210218.21	
3.46	PF 7	1	9923.8910152.54	
3.40	PF 7	1	992010158.36	
3.31	PF 7	1	979510076.34	
3.24	PF 7	1	9760	10040
3.15	PF 7	1	9850.9310142.27	
3.10	PF 7	1	9947.2410222.24	
3.05	PF 7	1	9930.21	10202.4
2.97	PF 7	1	9751.29	10105
2.93	PF 7	1	9744.2	10120
2.88	PF 7	1	9685.19	10095
2.84	PF 7	1	9741.02	10095
2.77	PF 7	1	9677.73	10095
2.73	PF 7	1	9649.15	10070
2.69	PF 7	1	9691.0710368.92	
2.64	PF 7	1	9834.2610295.76	
2.58	PF 7	1	9800.68	10339.6
2.52	PF 7	1	9805.5410288.03	
2.46	PF 7	1	9731.1210093.09	
2.41	PF 7	1	9697.8110390.53	
2.35	PF 7	1	9710.7310112.71	
2.28	PF 7	1	9823.0110197.78	
2.19	PF 7	1	9791.73	10300
2.13	PF 7	1	9532.44	10285
2.08	PF 7	1	9598.68	10430
1.99	PF 7	1	988010882.66	
1.90	PF 7	1	9670	10535
1.84	PF 7	1	958510386.37	
1.77	PF 7	1	9480	10095
1.72	PF 7	1	9495	10080
1.65	PF 7	1	9590	10140
1.56	PF 7	1	9700	10240
1.48	PF 7	1	9825	10450
1.38	PF 7	1	9900	10770
1.33	PF 7	1	9840	10760
1.29	PF 7	1	9760	10670
1.25	PF 7	1	9580	10520
1.21	PF 7	1	9540	10450
1.15	PF 7	1	954510462.14	
1.09	PF 7	1	970010431.25	
1.00	PF 7	1	981010444.57	
0.92	PF 7	1	9896.3910541.89	

River = Unnamed Trib Reach = Reach 1

RS	Profile	Method	Value1	Value2
3.84	PF 8	1	9797.210125.69	
3.79	PF 8	1	972710123.11	
3.76	PF 8	1	9834.9910228.13	
3.73	PF 8	1	9917.9110240.36	
3.70	PF 8	1	9799.3110068.09	
3.65	PF 8	1	9764.810172.35	
3.61	PF 8	1	9878.5810170.58	
3.54	PF 8	1	9925.3210218.21	
3.46	PF 8	1	9923.8910152.54	
3.40	PF 8	1	992010158.36	
3.31	PF 8	1	979510076.34	

3.24	PF 8	1	9760	10040
3.15	PF 8	1	9850.9310142.27	
3.10	PF 8	1	9947.2410222.24	
3.05	PF 8	1	9930.21 10202.4	
2.97	PF 8	1	9751.29	10105
2.93	PF 8	1	9744.2	10120
2.88	PF 8	1	9685.19	10095
2.84	PF 8	1	9741.02	10095
2.77	PF 8	1	9677.73	10095
2.73	PF 8	1	9649.15	10070
2.69	PF 8	1	9691.0710368.92	
2.64	PF 8	1	9834.2610295.76	
2.58	PF 8	1	9800.68 10339.6	
2.52	PF 8	1	9805.5410288.03	
2.46	PF 8	1	9731.1210093.09	
2.41	PF 8	1	9697.8110390.53	
2.35	PF 8	1	9710.7310112.71	
2.28	PF 8	1	9823.0110197.78	
2.19	PF 8	1	9791.73	10300
2.13	PF 8	1	9532.44	10285
2.08	PF 8	1	9598.68	10430
1.99	PF 8	1	988010882.66	
1.90	PF 8	1	9670	10535
1.84	PF 8	1	958510386.37	
1.77	PF 8	1	9480	10095
1.72	PF 8	1	9495	10080
1.65	PF 8	1	9590	10140
1.56	PF 8	1	9700	10240
1.48	PF 8	1	9825	10450
1.38	PF 8	1	9900	10770
1.33	PF 8	1	9840	10760
1.29	PF 8	1	9760	10670
1.25	PF 8	1	9580	10520
1.21	PF 8	1	9540	10450
1.15	PF 8	1	954510462.14	
1.09	PF 8	1	970010431.25	
1.00	PF 8	1	981010444.57	
0.92	PF 8	1	9896.3910541.89	

River = Unnamed Trib Reach = Reach 1

RS	Profile	Method	Value1	Value2
3.84	PF 9	1	9797.210125.69	
3.79	PF 9	1	972710123.11	
3.76	PF 9	1	9834.9910228.13	
3.73	PF 9	1	9917.9110240.36	
3.70	PF 9	1	9799.3110068.09	
3.65	PF 9	1	9764.810172.35	
3.61	PF 9	1	9878.5810170.58	
3.54	PF 9	1	9925.3210218.21	
3.46	PF 9	1	9923.8910152.54	
3.40	PF 9	1	992010158.36	
3.31	PF 9	1	979510076.34	
3.24	PF 9	1	9760	10040
3.15	PF 9	1	9850.9310142.27	
3.10	PF 9	1	9947.2410222.24	
3.05	PF 9	1	9930.21 10202.4	
2.97	PF 9	1	9751.29	10105
2.93	PF 9	1	9744.2	10120
2.88	PF 9	1	9685.19	10095
2.84	PF 9	1	9741.02	10095
2.77	PF 9	1	9677.73	10095
2.73	PF 9	1	9649.15	10070
2.69	PF 9	1	9691.0710368.92	
2.64	PF 9	1	9834.2610295.76	
2.58	PF 9	1	9800.68 10339.6	
2.52	PF 9	1	9805.5410288.03	
2.46	PF 9	1	9731.1210093.09	
2.41	PF 9	1	9697.8110390.53	
2.35	PF 9	1	9710.7310112.71	
2.28	PF 9	1	9823.0110197.78	
2.19	PF 9	1	9791.73	10300
2.13	PF 9	1	9532.44	10285
2.08	PF 9	1	9598.68	10430
1.99	PF 9	1	988010882.66	
1.90	PF 9	1	9670	10535
1.84	PF 9	1	958510386.37	
1.77	PF 9	1	9480	10095
1.72	PF 9	1	9495	10080
1.65	PF 9	1	9590	10140
1.56	PF 9	1	9700	10240
1.48	PF 9	1	9825	10450

1.38	PF 9	1	9900	10770
1.33	PF 9	1	9840	10760
1.29	PF 9	1	9760	10670
1.25	PF 9	1	9580	10520
1.21	PF 9	1	9540	10450
1.15	PF 9	1	954510462.14	
1.09	PF 9	1	970010431.25	
1.00	PF 9	1	981010444.57	
0.92	PF 9	1	9896.3910541.89	

River = Unnamed Trib Reach = Reach 1

RS	Profile	Method	Value1	Value2
3.84	PF 10	1	9797.210125.69	
3.79	PF 10	1	972710123.11	
3.76	PF 10	1	9834.9910228.13	
3.73	PF 10	1	9917.9110240.36	
3.70	PF 10	1	9799.3110068.09	
3.65	PF 10	1	9764.810172.35	
3.61	PF 10	1	9878.5810170.58	
3.54	PF 10	1	9925.3210218.21	
3.46	PF 10	1	9923.8910152.54	
3.40	PF 10	1	992010158.36	
3.31	PF 10	1	979510076.34	
3.24	PF 10	1	9760	10040
3.15	PF 10	1	9850.9310142.27	
3.10	PF 10	1	9947.2410222.24	
3.05	PF 10	1	9930.21	10202.4
2.97	PF 10	1	9751.29	10105
2.93	PF 10	1	9744.2	10120
2.88	PF 10	1	9685.19	10095
2.84	PF 10	1	9741.02	10095
2.77	PF 10	1	9677.73	10095
2.73	PF 10	1	9649.15	10070
2.69	PF 10	1	9691.0710368.92	
2.64	PF 10	1	9834.2610295.76	
2.58	PF 10	1	9800.68	10339.6
2.52	PF 10	1	9805.5410288.03	
2.46	PF 10	1	9731.1210093.09	
2.41	PF 10	1	9697.8110390.53	
2.35	PF 10	1	9710.7310112.71	
2.28	PF 10	1	9823.0110197.78	
2.19	PF 10	1	9791.73	10300
2.13	PF 10	1	9532.44	10285
2.08	PF 10	1	9598.68	10430
1.99	PF 10	1	988010882.66	
1.90	PF 10	1	9670	10535
1.84	PF 10	1	958510386.37	
1.77	PF 10	1	9480	10095
1.72	PF 10	1	9495	10080
1.65	PF 10	1	9590	10140
1.56	PF 10	1	9700	10240
1.48	PF 10	1	9825	10450
1.38	PF 10	1	9900	10770
1.33	PF 10	1	9840	10760
1.29	PF 10	1	9760	10670
1.25	PF 10	1	9580	10520
1.21	PF 10	1	9540	10450
1.15	PF 10	1	954510462.14	
1.09	PF 10	1	970010431.25	
1.00	PF 10	1	981010444.57	
0.92	PF 10	1	9896.3910541.89	

River = Unnamed Trib Reach = Reach 1

RS	Profile	Method	Value1	Value2
3.84	PF 11	1	9797.210125.69	
3.79	PF 11	1	972710123.11	
3.76	PF 11	1	9834.9910228.13	
3.73	PF 11	1	9917.9110240.36	
3.70	PF 11	1	9799.3110068.09	
3.65	PF 11	1	9764.810172.35	
3.61	PF 11	1	9878.5810170.58	
3.54	PF 11	1	9925.3210218.21	
3.46	PF 11	1	9923.8910152.54	
3.40	PF 11	1	992010158.36	
3.31	PF 11	1	979510076.34	
3.24	PF 11	1	9760	10040
3.15	PF 11	1	9850.9310142.27	
3.10	PF 11	1	9947.2410222.24	
3.05	PF 11	1	9930.21	10202.4
2.97	PF 11	1	9751.29	10105
2.93	PF 11	1	9744.2	10120

2.88	PF 11	1	9685.19	10095
2.84	PF 11	1	9741.02	10095
2.77	PF 11	1	9677.73	10095
2.73	PF 11	1	9649.15	10070
2.69	PF 11	1	9691.07	10368.92
2.64	PF 11	1	9834.26	10295.76
2.58	PF 11	1	9800.68	10339.6
2.52	PF 11	1	9805.54	10288.03
2.46	PF 11	1	9731.12	10093.09
2.41	PF 11	1	9697.81	10390.53
2.35	PF 11	1	9710.73	10112.71
2.28	PF 11	1	9823.01	10197.78
2.19	PF 11	1	9791.73	10300
2.13	PF 11	1	9532.44	10285
2.08	PF 11	1	9598.68	10430
1.99	PF 11	1	988	10882.66
1.90	PF 11	1	9670	10535
1.84	PF 11	1	958	10386.37
1.77	PF 11	1	9480	10095
1.72	PF 11	1	9495	10080
1.65	PF 11	1	9590	10140
1.56	PF 11	1	9700	10240
1.48	PF 11	1	9825	10450
1.38	PF 11	1	9900	10770
1.33	PF 11	1	9840	10760
1.29	PF 11	1	9760	10670
1.25	PF 11	1	9580	10520
1.21	PF 11	1	9540	10450
1.15	PF 11	1	954	10462.14
1.09	PF 11	1	970	10431.25
1.00	PF 11	1	981	10444.57
0.92	PF 11	1	9896.39	10541.89

River = Unnamed Trib Reach = Reach 1

RS	Profile	Method	Value1	Value2
3.84	PF 12	1	9797.21	0125.69
3.79	PF 12	1	972	10123.11
3.76	PF 12	1	9834.99	10228.13
3.73	PF 12	1	9917.91	10240.36
3.70	PF 12	1	9799.31	10068.09
3.65	PF 12	1	9764.81	0172.35
3.61	PF 12	1	9878.58	10170.58
3.54	PF 12	1	9925.32	10218.21
3.46	PF 12	1	9923.89	10152.54
3.40	PF 12	1	992	10158.36
3.31	PF 12	1	979	10076.34
3.24	PF 12	1	9760	10040
3.15	PF 12	1	9850.93	10142.27
3.10	PF 12	1	9947.24	10222.24
3.05	PF 12	1	9930.21	10202.4
2.97	PF 12	1	9751.29	10105
2.93	PF 12	1	9744.2	10120
2.88	PF 12	1	9685.19	10095
2.84	PF 12	1	9741.02	10095
2.77	PF 12	1	9677.73	10095
2.73	PF 12	1	9649.15	10070
2.69	PF 12	1	9691.07	10368.92
2.64	PF 12	1	9834.26	10295.76
2.58	PF 12	1	9800.68	10339.6
2.52	PF 12	1	9805.54	10288.03
2.46	PF 12	1	9731.12	10093.09
2.41	PF 12	1	9697.81	10390.53
2.35	PF 12	1	9710.73	10112.71
2.28	PF 12	1	9823.01	10197.78
2.19	PF 12	1	9791.73	10300
2.13	PF 12	1	9532.44	10285
2.08	PF 12	1	9598.68	10430
1.99	PF 12	1	988	10882.66
1.90	PF 12	1	9670	10535
1.84	PF 12	1	958	10386.37
1.77	PF 12	1	9480	10095
1.72	PF 12	1	9495	10080
1.65	PF 12	1	9590	10140
1.56	PF 12	1	9700	10240
1.48	PF 12	1	9825	10450
1.38	PF 12	1	9900	10770
1.33	PF 12	1	9840	10760
1.29	PF 12	1	9760	10670
1.25	PF 12	1	9580	10520
1.21	PF 12	1	9540	10450
1.15	PF 12	1	954	10462.14

1.09	PF 12	1	970010431.25	
1.00	PF 12	1	981010444.57	
0.92	PF 12	1	9896.3910541.89	

River = Unnamed Trib Reach = Reach 1

RS	Profile	Method	Value1	Value2
3.84	PF 13	1	9797.210125.69	
3.79	PF 13	1	972710123.11	
3.76	PF 13	1	9834.9910228.13	
3.73	PF 13	1	9917.9110240.36	
3.70	PF 13	1	9799.3110068.09	
3.65	PF 13	1	9764.810172.35	
3.61	PF 13	1	9878.5810170.58	
3.54	PF 13	1	9925.3210218.21	
3.46	PF 13	1	9923.8910152.54	
3.40	PF 13	1	992010158.36	
3.31	PF 13	1	979510076.34	
3.24	PF 13	1	9760	10040
3.15	PF 13	1	9850.9310142.27	
3.10	PF 13	1	9947.2410222.24	
3.05	PF 13	1	9930.21	10202.4
2.97	PF 13	1	9751.29	10105
2.93	PF 13	1	9744.2	10120
2.88	PF 13	1	9685.19	10095
2.84	PF 13	1	9741.02	10095
2.77	PF 13	1	9677.73	10095
2.73	PF 13	1	9649.15	10070
2.69	PF 13	1	9691.0710368.92	
2.64	PF 13	1	9834.2610295.76	
2.58	PF 13	1	9800.68	10339.6
2.52	PF 13	1	9805.5410288.03	
2.46	PF 13	1	9731.1210093.09	
2.41	PF 13	1	9697.8110390.53	
2.35	PF 13	1	9710.7310112.71	
2.28	PF 13	1	9823.0110197.78	
2.19	PF 13	1	9791.73	10300
2.13	PF 13	1	9532.44	10285
2.08	PF 13	1	9598.68	10430
1.99	PF 13	1	988010882.66	
1.90	PF 13	1	9670	10535
1.84	PF 13	1	958510386.37	
1.77	PF 13	1	9480	10095
1.72	PF 13	1	9495	10080
1.65	PF 13	1	9590	10140
1.56	PF 13	1	9700	10240
1.48	PF 13	1	9825	10450
1.38	PF 13	1	9900	10770
1.33	PF 13	1	9840	10760
1.29	PF 13	1	9760	10670
1.25	PF 13	1	9580	10520
1.21	PF 13	1	9540	10450
1.15	PF 13	1	954510462.14	
1.09	PF 13	1	970010431.25	
1.00	PF 13	1	981010444.57	
0.92	PF 13	1	9896.3910541.89	

River = Unnamed Trib Reach = Reach 1

RS	Profile	Method	Value1	Value2
3.84	PF 14	1	9797.210125.69	
3.79	PF 14	1	972710123.11	
3.76	PF 14	1	9834.9910228.13	
3.73	PF 14	1	9917.9110240.36	
3.70	PF 14	1	9799.3110068.09	
3.65	PF 14	1	9764.810172.35	
3.61	PF 14	1	9878.5810170.58	
3.54	PF 14	1	9925.3210218.21	
3.46	PF 14	1	9923.8910152.54	
3.40	PF 14	1	992010158.36	
3.31	PF 14	1	979510076.34	
3.24	PF 14	1	9760	10040
3.15	PF 14	1	9850.9310142.27	
3.10	PF 14	1	9947.2410222.24	
3.05	PF 14	1	9930.21	10202.4
2.97	PF 14	1	9751.29	10105
2.93	PF 14	1	9744.2	10120
2.88	PF 14	1	9685.19	10095
2.84	PF 14	1	9741.02	10095
2.77	PF 14	1	9677.73	10095
2.73	PF 14	1	9649.15	10070
2.69	PF 14	1	9691.0710368.92	
2.64	PF 14	1	9834.2610295.76	

2.58	PF 14	1	9800.68	10339.6
2.52	PF 14	1	9805.54	10288.03
2.46	PF 14	1	9731.12	10093.09
2.41	PF 14	1	9697.81	10390.53
2.35	PF 14	1	9710.73	10112.71
2.28	PF 14	1	9823.01	10197.78
2.19	PF 14	1	9791.73	10300
2.13	PF 14	1	9532.44	10285
2.08	PF 14	1	9598.68	10430
1.99	PF 14	1	9880	10882.66
1.90	PF 14	1	9670	10535
1.84	PF 14	1	9585	10386.37
1.77	PF 14	1	9480	10095
1.72	PF 14	1	9495	10080
1.65	PF 14	1	9590	10140
1.56	PF 14	1	9700	10240
1.48	PF 14	1	9825	10450
1.38	PF 14	1	9900	10770
1.33	PF 14	1	9840	10760
1.29	PF 14	1	9760	10670
1.25	PF 14	1	9580	10520
1.21	PF 14	1	9540	10450
1.15	PF 14	1	9545	10462.14
1.09	PF 14	1	9700	10431.25
1.00	PF 14	1	9810	10444.57
0.92	PF 14	1	9896.39	10541.89

River = Unnamed Trib Reach = Reach 1

RS	Profile	Method	Value1	Value2
3.84	PF 15	1	9797.21	0125.69
3.79	PF 15	1	9727	10123.11
3.76	PF 15	1	9834.99	10228.13
3.73	PF 15	1	9917.91	10240.36
3.70	PF 15	1	9799.31	10068.09
3.65	PF 15	1	9764.81	0172.35
3.61	PF 15	1	9878.58	10170.58
3.54	PF 15	1	9925.32	10218.21
3.46	PF 15	1	9923.89	10152.54
3.40	PF 15	1	9920	10158.36
3.31	PF 15	1	9795	10076.34
3.24	PF 15	1	9760	10040
3.15	PF 15	1	9850.93	10142.27
3.10	PF 15	1	9947.24	10222.24
3.05	PF 15	1	9930.21	10202.4
2.97	PF 15	1	9751.29	10105
2.93	PF 15	1	9744.2	10120
2.88	PF 15	1	9685.19	10095
2.84	PF 15	1	9741.02	10095
2.77	PF 15	1	9677.73	10095
2.73	PF 15	1	9649.15	10070
2.69	PF 15	1	9691.07	10368.92
2.64	PF 15	1	9834.26	10295.76
2.58	PF 15	1	9800.68	10339.6
2.52	PF 15	1	9805.54	10288.03
2.46	PF 15	1	9731.12	10093.09
2.41	PF 15	1	9697.81	10390.53
2.35	PF 15	1	9710.73	10112.71
2.28	PF 15	1	9823.01	10197.78
2.19	PF 15	1	9791.73	10300
2.13	PF 15	1	9532.44	10285
2.08	PF 15	1	9598.68	10430
1.99	PF 15	1	9880	10882.66
1.90	PF 15	1	9670	10535
1.84	PF 15	1	9585	10386.37
1.77	PF 15	1	9480	10095
1.72	PF 15	1	9495	10080
1.65	PF 15	1	9590	10140
1.56	PF 15	1	9700	10240
1.48	PF 15	1	9825	10450
1.38	PF 15	1	9900	10770
1.33	PF 15	1	9840	10760
1.29	PF 15	1	9760	10670
1.25	PF 15	1	9580	10520
1.21	PF 15	1	9540	10450
1.15	PF 15	1	9545	10462.14
1.09	PF 15	1	9700	10431.25
1.00	PF 15	1	9810	10444.57
0.92	PF 15	1	9896.39	10541.89

FLOW DATA

Flow Title: Team Existing Cond 100yr
Flow File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SW WMP\Wmp_UT.f06

Flow Data (cfs)

River	Reach	RS	Existing-100yr	Encr Ex 100
Unnamed Trib	Reach 1	3.84	3300	3300
Unnamed Trib	Reach 1	3.65	6500	6500
Unnamed Trib	Reach 1	2.69	8400	8400
Unnamed Trib	Reach 1	1.99	9700	9700

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Unnamed Trib	Reach 1	Existing-100yr		Known WS = 1532.1
Unnamed Trib	Reach 1	Encr Ex 100		Known WS = 1532.1

GEOMETRY DATA

Geometry Title: New Existing Cond Geo for 100yr
Geometry File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SW WMP\Wmp_UT.g04

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 3.84

INPUT
Description:
Station Elevation Data num= 134

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9547.62	1632	9553.35	1631.83	9575.75	1631.15	9580.03	1631.02	9581.49	1630.99
9596.35	1630.8	9601.38	1630.78	9605.66	1630.72	9640.94	1630.1	9641.66	1630.09
9645.57	1630	9648.99	1629.98	9649.33	1629.97	9649.83	1629.96	9650.36	1629.94
9650.92	1629.9	9651.68	1629.91	9654.59	1629.85	9656.59	1629.84	9705.05	1629.11
9710.53	1629.1	9713.24	1629.1	9714.01	1629.09	9715.07	1629.07	9718	1629.06
9721.33	1629	9724.03	1629.04	9724.6	1629.03	9726.16	1629.01	9726.22	1629.01
9726.29	1629	9728.04	1628.95	9729.54	1628.92	9730.04	1628.9	9731.77	1628.82
9732.79	1628.8	9733.11	1628.84	9735.34	1628.74	9737.83	1628.7	9739.64	1628.72
9740.21	1628.7	9742.5	1628.76	9746.82	1628.85	9747.76	1628.85	9752.39	1628.9
9754.89	1628.8	9756.14	1628.82	9757.47	1628.81	9776.96	1628.72	9778.11	1628.71
9779.25	1628.7	9779.46	1628.74	9781.55	1628.85	9783.39	1628.88	9786.22	1628.88
9793.09	1628.8	9795.13	1628.83	9802.11	1628.67	9810.66	1628.48	9821.08	1628.2
9827.94	1628	9838.5	1627.71	9884.12	1626.7	9885.02	1626.68	9886.31	1626.7
9887.55	1626.7	9888.66	1626.73	9890.64	1626.68	9892.03	1626.67	9892.85	1626.6
9894.31	1626.6	9895.79	1626.54	9908.25	1626.34	9920.43	1626.14	9921.69	1626.1
9926.77	1626	9928.9	1626	9930.36	1625.95	9932.06	1625.87	9970.95	1625.45
9978.04	1625.4	9980.97	1624.77	9984.1	1624	9988.54	1622.84	9990.86	1622.31
9991.24	1622.2	9992.08	1622	9992.12	1621.98	9992.19	1621.96	9992.32	1621.93
9992.66	1621.8	9993.14	1621.71	9996.1	1621.71	10000	1621.7	10000.03	1621.69
10008.18	1621.6	10008.47	1621.68	10009.24	1622	10011.12	1622.79	10013.77	1624
10018.17	1625.8	10019.37	1626.11	10037.26	1625.29	10047.9	1624.96	10049.44	1624.92
10051.35	1625.2	10059.96	1626	10067.24	1626.72	10073.87	1627.44	10080.74	1627.6
10094.49	1627.7	10100.26	1627.79	10101.32	1627.8	10105.66	1627.84	10109.98	1627.91
10110.32	1627.9	10110.93	1627.92	10115.06	1628	10120.43	1628.15	10123.11	1628.16
10132.44	1628.4	10168.68	1629.08	10170.63	1629.09	10172.51	1629.1	10174.4	1629.11
10176.49	1629.1	10183.65	1629.25	10201.66	1629.61	10221.63	1630	10263.62	1630.84
10276.28	1631	10282.65	1631.07	10291.14	1631.18	10347.2	1632		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9547.62	.06	9978.04	.045	10019.37	.055	10073.87	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.04	10019.37	285.32	272.62	229.06	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 3.79

INPUT
Description:
Station Elevation Data num= 104

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9590.27	1628.3	9602.9	1628	9604.16	1627.98	9620.36	1627.76	9624.4	1627.7
9665.5	1627.2	9684.24	1626.88	9698.29	1626.67	9709.3	1626.5	9721.48	1626.33

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 9738.26    1626 9769.44 1625.62 9776.29 1625.54 9778.56 1625.52 9784.03 1625.48
 9789.61  1625.4 9795.37 1625.37 9836.76 1624.88 9868.14 1624.54 9880.82 1624.39
 9886.25  1624.3 9895.46 1624.23 9908.67 1624.12  9918.2    1624 9933.29 1623.72
 9945.92  1623.5 9946.84 1623.52 9949.22 1623.61 9953.71 1623.69  9956.7 1623.75
 9974.88    1624  9978.6    1624  9978.8    1624 9980.05    1624 9981.73    1624
 9982.48    1624 9983.25 1623.99 9983.71 1623.99 9991.13  1622.6 9994.01 1622.06
 9994.35    1622 9995.06 1621.86 9996.25 1621.64  9996.4 1621.65 9997.57 1621.82
   10000  1621.510012.17 1621.1910014.72 1621.0510018.99    162210027.25  1623.8
10027.65 1623.8810028.31    1624 10029.5 1624.2310029.62  1624.310030.41 1624.23
10033.95 1624.1710038.65 1624.0210043.77    162410044.76    1624   10048    1624
10049.51    162410049.59    1624   10050    162410057.25    162410061.47    1624
10061.84    162410063.95 1623.9910065.32 1623.9710065.69    162410065.82 1623.96
10069.25 1623.5510074.63 1622.9710079.66 1623.6910081.88    162410082.28 1624.07
10083.24  1624.210084.33 1624.01 10084.4    162410085.07    162410102.87 1623.77
10104.08 1623.7810104.98  1623.810105.83  1623.810107.51  1623.910108.72    1624
10116.25 1624.4810121.37 1624.8910127.22 1625.3210134.88  1625.910136.79 1625.99
   10139 1626.15 10139.5 1626.17 10140.3  1626.210141.38  1626.210146.87 1626.22
10169.18 1626.5210175.02 1626.66 10181.3 1626.8210188.18    162710201.25 1627.32
10225.71    162810261.38  1629.310280.67    163010281.16    1630

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9590.27     .06 9983.71    .04510029.62    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9983.7110029.62            184.88  180.77  123.11              .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 3.76

INPUT
Description:
Station Elevation Data     num=     121
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9481.34  1626.9 9484.55 1626.93 9487.74 1626.92 9489.59 1626.91 9490.07 1626.91
 9490.31  1626.9 9491.64  1626.9 9492.64  1626.9 9493.46 1626.89  9494.1 1626.89
 9519.07  1626.7 9523.06 1626.65  9528.4 1626.63 9535.47  1626.6 9540.35 1626.59
 9541.28  1626.6  9687.7    1626 9705.14    1626 9711.12    1626 9734.19    1626
 9741.38    1626 9744.75    1626 9767.63    1626 9770.85    1626 9771.24    1626
 9772.51    1626 9772.92    1626 9779.47 1625.89 9792.03  1625.7 9800.72 1625.58
 9814.95  1625.3 9820.17 1625.25  9824.5 1625.17 9830.17 1624.97 9835.05 1624.79
 9837.91  1624.7 9840.16  1624.6 9857.01    1624 9885.39 1622.83 9885.89 1622.81
  9885.9  1622.8 9886.69  1622.8 9896.59 1622.73 9900.58 1622.68 9922.74 1622.61
 9943.75  1622.5 9962.49  1622.4 9962.54 1622.38 9965.43 1622.46 9967.81 1622.57
 9970.42  1622.6 9973.45 1622.72 9977.47 1622.79 9978.33 1622.81 9981.25 1622.86
 9981.36  1622.8 9982.03 1622.79 9982.58 1622.73 9987.12    1622 9997.13 1620.49
  9997.9  1620.4 9999.17  1620.2  9999.5 1620.15   10000  1620.410003.52 1620.64
10004.82  1620.810007.48 1621.1310014.38    162210015.32 1622.12 10015.7 1622.16
10016.45  1622.310018.57 1622.5110024.03 1623.1710024.64 1623.1710027.96 1623.19
10030.03  1623.210031.92 1623.1610033.79 1623.1510035.09 1623.1610036.49 1623.15
10037.98  1623.110039.52 1623.0710084.38 1623.6910086.07 1623.6910094.76 1623.57
10094.95  1623.610094.97 1623.5410096.42 1623.3110104.61    162210107.02 1621.63
10107.67  1621.510108.93 1621.3310111.22 1621.6910112.24 1621.8610113.25    1622
10119.93  1623.110121.86 1623.3510129.04 1623.3210152.87 1623.1610162.89 1622.01
10163.04    162210163.08 1621.9910166.37 1621.6110173.52 1621.9610174.54    1622
10183.96  1622.410184.87 1622.4810186.03 1622.54   10188 1622.6510191.13 1622.65
10194.32  1622.610202.68 1622.6210208.96  1623.210217.57    162410221.14 1624.33
10227.03  1624.810240.39 1625.2510263.15    162610276.76 1626.5110316.03    1628
10317.87  1628.1

Manning's n Values          num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9481.34     .06 9981.25    .04510024.03     .0610094.97    .04510121.86    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9981.2510024.03            161.68  172.64  149.88              .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 3.73

INPUT
Description:
Station Elevation Data     num=     131
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9675.66  1625.9 9681.38 1625.93 9686.88  1625.9 9690.76 1625.83 9705.38    1626
 9708.82    1626 9715.78    1626 9718.92    1626 9721.46    1626 9740.16    1626
 9742.37    1626 9747.58    1626 9750.02    1626  9752.7    1626  9756.1    1626
 9775.89    1626 9778.51    1626 9780.26    1626 9817.55 1625.48    9828 1625.42
 9833.79  1625.4 9840.61 1625.29 9906.56 1624.49 9906.62 1624.49 9906.74 1624.48
 9908.68  1624.3 9915.06    1624 9919.71 1623.68 9919.77 1623.67  9923.4 1623.34
  9927.8  1622.9 9929.09 1622.82 9930.83 1622.74 9938.25    1622 9947.01 1621.03
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  9957.4    1620 9960.71 1619.66  9960.9 1619.64 9961.62 1619.75 9963.53    1620
 9967.01  1620.5 9970.21 1620.98  9972.1 1621.24 9973.52 1621.46 9980.55 1621.67
 9986.19  1621.8 9990.94 1620.75 9992.11 1620.47 9994.03    1620  9995.4 1619.68
 9998.78  1618.9   10000 1619.1110000.85 1619.3410002.13  1619.510002.99 1619.63
10005.65    162010010.78  1620.710011.71 1620.8410014.25 1621.2810017.34 1621.81
10020.12  1621.810020.47 1621.8310021.25 1621.8310025.98 1621.8710028.12 1621.85
10032.44  1621.810037.65 1621.7910043.68 1621.6610046.05 1621.6310051.89 1621.57
10052.45  1621.610056.95 1621.4810058.94 1621.3710059.12 1621.3510059.27 1621.34
10059.44  1621.310062.48 1621.2110063.22 1621.1810064.18 1621.1410064.98  1621.1
10069.41  1620.910071.32 1620.8310075.12 1620.6710079.93 1620.4210081.33 1620.36
10082.65  1620.310088.69 1619.9410089.18 1619.9410090.07 1620.0510092.89 1620.27
10106.65  1621.210106.94 1621.2910107.41 1621.2810108.77 1621.4110110.32 1621.55
10111.43  1621.610112.53  1621.610113.35 1621.6210113.97 1621.6310114.62 1621.64
10135.94  1621.610142.25 1621.4610146.16 1621.37 10154.5  1620.510160.76    1620
10162.65  1619.810163.42 1619.7810164.78 1619.8610165.38 1619.96 10165.7 1619.95
10172.18  1619.510175.11 1619.31   10181 1619.0210181.12 1619.0110181.27    1619
10181.38    161910188.17    162010190.13 1620.3410192.94  1620.910195.23  1620.9
10205.45    162210205.88    162210206.86 1622.1110210.98  1622.510222.39 1623.46
10238.49  1623.910243.06    162410249.27 1624.3210256.25 1624.5910287.51    1626
10300.75  1626.4

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9675.66     .06 9986.19    .04510017.34     .0610111.43     .0610146.16    .045
10192.94    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9986.1910017.34           177.18  267.76  153.48             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.70

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9655.33  1624.4 9669.94 1624.32 9672.79 1624.31 9674.01 1624.31  9681.2 1624.29
 9696.22  1624.3 9701.69 1624.25 9705.42 1624.24 9714.58 1624.21    9739 1624.15
 9785.01    1624 9785.03    1624 9785.05    1624 9785.09    1624 9785.28    1624
 9786.59    1624 9787.43 1623.94 9792.42 1623.59 9801.24 1623.11 9807.49 1622.75
 9820.35    1622 9823.02 1621.83 9845.62    1620 9850.17 1619.54 9851.38  1619.4
 9864.06  1619.6 9876.28 1619.82 9879.85 1619.88 9881.47 1619.91 9882.01 1619.93
 9886.21    1620 9900.86 1620.02 9900.87 1620.02 9902.51 1620.03 9903.23 1620.03
  9904.8    1620 9923.72    1620 9929.04 1619.89 9929.34 1619.88 9929.69 1619.87
 9930.05  1619.9 9930.74 1619.84 9931.36 1619.83 9932.25 1619.81 9933.29 1619.78
 9934.54  1619.8 9940.84 1619.59 9964.99    1619 9969.09 1618.87 9977.45 1618.61
 9979.89  1618.5 9980.22 1618.47 9980.88 1618.37 9982.69    1618 9988.63 1616.72
  9992.2    1616 9994.05 1615.65 9994.63 1615.54   10000  1615.6 10001.9 1615.71
10005.12  1615.810005.34 1615.8710005.55    161610012.52 1617.5310014.51    1618
10015.25  1618.210027.24 1619.7610029.42    162010032.77 1620.38 10040.9 1621.22
10047.39    162210051.06 1622.4110053.68  1622.710062.22 1623.0810081.72    1624
10127.18  1625.510136.11 1625.81 10141.1 1625.97

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9655.33     .06 9923.72     .06 9979.89    .04510053.68    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9979.8910053.68           195.28  254.18  297.16             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.65

INPUT
Description:
Station Elevation Data    num=      87
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9713.47  1623.9 9731.48 1623.46 9738.83 1623.26 9744.52 1623.11 9776.96    1622
  9787.4  1621.6 9792.39 1621.47 9793.97 1621.41 9794.59 1621.36 9797.03 1621.12
 9810.45    1620 9815.51 1619.37 9821.56 1618.62 9826.34    1618 9832.98 1617.19
 9833.66  1617.1 9835.59 1617.27 9850.19 1617.89 9851.47 1617.95 9851.91 1617.97
 9852.08    1618  9852.2 1617.98 9852.31 1617.98 9852.95    1618 9866.35 1618.11
  9872.5  1618.1 9890.58    1618 9904.88 1617.73 9905.67 1617.72 9906.66 1617.71
 9907.83  1617.7 9909.12 1617.67 9911.04 1617.64 9912.27 1617.63 9913.33 1617.61
 9925.81  1617.4 9927.77 1617.38 9929.08 1617.35 9932.79 1617.27 9940.27 1617.09
 9945.35    1617 9945.57 1616.97 9947.32 1617.11 9960.13    1618  9962.1 1618.14
 9965.17  1618.3 9965.28 1618.31 9965.62 1618.23 9966.77    1618 9974.72  1616.3
 9976.01    1616 9976.38 1615.92  9980.5 1615.07 9981.24  1615.1 9986.72 1615.32
  9991.3  1614.9 9992.81 1614.65 9993.77 1614.48   10000 1614.2610000.48 1614.26
10007.75    161410008.25 1613.9810009.22 1613.9710009.36 1613.95 10009.4 1613.95
10009.88  1614.110017.21    161610022.28 1617.2410025.26    161810026.93 1618.42
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10028.42  1618.610028.68 1618.6110029.36 1618.6510032.71 1618.5710034.18 1618.54
10093.87  1619.810101.48    162010104.01 1620.09 10157.3 1621.89 10157.4 1621.89
10157.65  1621.910163.65    162210164.22    162210167.89 1622.0210213.54 1623.22
10226.53  1623.5   10242    1624

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9713.47     .06 9866.35     .06 9965.28    .04510029.36    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9965.2810029.36           198.65  205.64  187.36             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.61

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9825.74    1622 9880.74  1620.1 9882.83 1620.01 9883.22    1620 9904.72 1618.89
  9909.6 1618.74 9912.48  1618.3 9913.69 1618.22 9914.26 1618.17 9917.09    1618
  9948.8 1616.23 9953.45    1616    9959 1615.67 9962.52 1615.48 9967.86 1615.64
 9979.07 1615.95 9981.37  1615.2  9985.3    1614 9988.92 1612.84 9991.59    1612
 9993.25 1611.42 9993.66  1611.310001.69 1611.9210002.35 1611.9710002.49 1611.98
10002.56 1611.9910002.72    161210002.79 1612.0110002.84 1612.01 10002.9 1612.01
10006.32 1612.28   10007  1612.310007.06 1612.3410010.84 1613.0410015.61    1614
10021.56 1615.1410023.82  1615.510024.19 1615.6210025.84    161610026.77 1616.17
10028.21 1616.4510034.05  1616.310093.37 1617.51 10094.6 1617.5110101.45 1617.79
10107.32    1618 10119.8  1618.3 10126.4 1618.5110129.49 1618.5910164.86    1620
10189.14 1620.7410198.98    162110219.07 1621.6910222.91 1621.81

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9825.74     .06 9979.07    .04510028.21    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9979.0710028.21           390.89   389.3  386.91             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.54

INPUT
Description:
Station Elevation Data    num=      87
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9832.04    1622 9832.05    1622 9866.89 1620.82 9892.47    1620 9912.33 1618.81
 9926.26    1618 9939.21  1617.1  9941.3 1616.94 9943.94 1616.75 9946.26 1616.57
 9954.21    1616 9955.05 1615.99 9955.06 1615.99 9955.11 1615.99 9959.09 1615.46
 9971.85    1614 9977.15 1613.02 9979.33 1612.45 9979.81 1612.37 9981.48    1612
 9991.46  1610.2 9992.52    1610 9992.92 1609.94 9993.18 1609.89 9999.18    1610
 9999.42    1610 9999.45    1610   10000    161010003.75    161010004.36    1610
10005.93    1610 10007.7    161010008.63 1610.0610012.15 1610.2210012.65 1610.25
10020.81  1611.310027.35    161210033.89    161310035.57 1613.2910038.15 1613.68
 10038.3  1613.710040.99 1613.9210041.29 1613.9410042.62    161410043.84    1614
10046.26  1613.910048.79 1613.7710052.42 1613.8310053.62 1613.8210054.17  1613.8
10054.86  1613.810075.39 1613.7710084.07 1613.7810099.34    161410102.85    1614
 10105.8    1614 10114.6 1613.8610115.52 1613.8510122.68 1613.8210133.95 1613.68
10134.27  1613.710134.44 1613.6810134.51 1613.6810134.56 1613.6810140.57    1614
10144.52  1614.210149.28 1614.5210158.52 1614.6410160.18 1614.6510162.26 1614.67
10165.31  1614.710169.11 1614.8110175.79 1614.9710189.17 1615.2810189.19 1615.28
10193.93  1615.810195.26 1615.9610195.63    161610201.93 1616.5710221.65    1618
10221.69    161810221.74    161810239.22 1618.9410244.72 1619.1910257.25 1619.59
10260.81  1619.710268.12 1619.99

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9832.04     .06 9955.05    .04510042.62    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9955.0510042.62           435.96  440.05  442.16             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.46

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9842.22  1617.9 9861.63 1617.15 9889.72    1616 9925.71 1614.04 9926.49    1614
 9931.41  1613.7 9946.39 1612.61  9948.8 1612.35 9950.56 1612.16 9952.02    1612
 9959.18  1611.2 9964.66 1610.64 9969.13 1610.23 9971.96    1610 9976.94 1609.61
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 9979.06  1609.4 9980.67 1608.81 9982.76    1608 9986.86  1606.4 9987.92    1606
 9988.43  1605.8 9989.12 1605.57 9989.96 1605.47 9990.94 1605.26   10000 1605.37
10005.42  1605.510009.65  1605.610010.06  1605.710010.85 1605.8810011.07 1605.94
10011.17    160610011.21 1605.9710011.23 1605.98 10011.3    160610012.09 1606.19
10019.54    1608 10021.1  1608.410027.91    161010029.48 1610.4210030.23 1610.66
 10030.3  1610.710030.36 1610.6610030.46 1610.6710030.55 1610.6510034.43 1610.81
10035.73  1610.8 10106.9 1610.54 10110.9 1610.5810110.91 1610.5810110.96 1610.58
10110.98  1610.610112.79 1610.9710113.98 1611.1910119.67    161210134.56  1613.4
10141.54    161410153.74    161510165.85    161610171.58 1616.4210181.15  1617.1
 10192.5    161810196.91 1618.2710198.61 1618.35 10200.7 1618.4610211.23 1619.16
10228.12    162010229.27 1620.03

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9842.22     .06 9979.06    .045 10030.3    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9979.06 10030.3            267.6  296.32  322.93             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.40

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9781.06    1616 9822.91 1614.86 9854.08    1614 9869.67 1613.19 9872.55 1613.09
 9877.05  1612.9  9883.4 1612.62 9896.85    1612 9912.11 1611.34 9913.25 1611.29
 9914.75  1611.1 9916.06 1610.91 9917.43 1610.67 9918.22 1610.54 9918.76 1610.47
 9922.45    1610 9926.53 1609.41 9930.32 1608.89 9939.23 1609.09 9968.21 1608.92
 9970.35  1608.8 9970.57 1608.76 9971.46 1608.56 9973.61    1608 9981.86 1606.16
 9982.41    1606 9983.01 1605.84 9983.21  1605.8 9984.73 1605.47  9987.2 1604.93
 9994.96  1604.6   10000 1604.3510003.63  1604.110006.33 1604.7110012.22    1606
10019.07  1607.510020.95 1607.9610021.82 1607.9810022.45    160810032.47 1608.15
10043.27  1608.310060.77 1608.5310064.37 1608.5810069.85 1608.6610076.75 1608.75
10085.89  1608.910096.09 1609.0310107.37 1609.1610118.92 1609.3110133.36 1609.51
10142.19  1609.610143.27 1609.8110144.07 1609.9110144.74    161010154.75 1611.41
10159.23    161210162.87 1612.4810174.31    161410182.95 1615.0910191.93    1616
10213.93  1617.910215.48    161810216.09 1618.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9781.06     .06 9970.35    .04510020.95    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9970.3510020.95            401.74  459.84  480.49             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.31

INPUT
Description:
Station Elevation Data    num=      99
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9676.2    1614 9680.19 1613.76 9709.76    1612 9736.92 1610.19  9739.8    1610
 9742.92  1609.7 9764.99    1608 9768.82 1607.67 9770.17 1607.55 9772.58 1607.34
 9773.04  1607.3 9775.74 1606.88 9779.73 1606.25 9780.45 1606.13 9781.38    1606
 9782.88  1605.8  9783.5 1605.71 9787.85 1605.11 9791.87 1604.52 9793.53 1604.67
 9796.81  1604.9 9810.28    1606 9811.65 1606.11 9819.15 1606.68 9821.55 1606.85
 9824.44  1607.1 9835.38 1606.93 9840.19 1606.88 9850.46 1606.78 9856.89  1606.7
 9869.42  1606.6 9869.77 1606.61 9871.18 1606.67  9872.8 1606.73 9880.81 1607.04
 9895.41  1607.6 9899.08 1607.74 9901.23 1607.83 9902.48 1607.88 9905.63 1607.99
 9906.41    1608  9908.4 1608.08 9909.55 1608.12 9910.37 1608.06 9911.46    1608
 9924.21    1607 9928.31 1606.68 9931.42 1606.87 9948.97 1607.99 9959.39  1607.3
 9973.52  1606.3 9973.89 1606.25  9974.8    1606 9977.21 1605.38 9983.02    1604
 9984.35  1603.7 9991.03 1602.03 9991.36 1602.02 9994.22    1602 9994.47    1602
 9994.64    1602 9995.28    1602 9998.94 1601.99 9999.14 1601.98 9999.48 1601.98
   10000    160210001.81 1601.9710002.81 1601.95 10005.6 1601.9310007.24 1601.91
 10007.3  1601.910007.44 1601.9510007.49 1601.9710007.51 1601.97 10007.6    1602
10011.16  1602.810013.02 1603.2810013.89 1603.4810015.73    160410017.05 1604.35
10018.49  1604.710021.06 1605.27 10023.7 1605.4310026.04 1605.5410030.24 1605.79
10034.49    160610039.47 1606.3110041.37 1606.3910044.87 1606.5510054.05 1607.04
10054.74  1607.210060.93    160810075.76 1609.8710076.85    161010077.71 1610.11
 10086.5  1611.110093.46    161210111.83 1613.3910117.39 1613.82

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
  9676.2     .06 9824.44     .06 9948.97    .04510021.06    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9948.9710021.06            366.29  396.52  408.42             .1       .3
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CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 3.24

INPUT
Description:
Station Elevation Data     num=      103
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9673.96  1611.8 9678.05 1611.57 9692.16 1610.84 9699.23 1610.46 9703.12 1610.25
 9708.57    1610 9712.93 1609.78 9714.11 1609.72 9717.62 1609.42 9723.36 1608.95
 9726.71  1608.7 9729.48 1608.48 9734.86    1608 9750.09 1606.62 9758.23    1606
 9766.89  1605.3 9776.95 1604.62 9783.83 1604.51 9797.28 1604.37 9803.88 1604.29
 9808.36  1604.2 9811.41  1604.2 9813.04 1604.18 9829.43 1604.11 9830.32  1604.1
  9831.2  1604.1 9843.48    1604 9843.89    1604 9844.27    1604 9844.51    1604
 9844.71    1604 9845.24 1604.01 9853.85    1604 9854.05 1604.01 9854.31 1604.01
 9854.61    1604    9855 1604.01 9863.17 1604.01 9863.54 1604.01 9864.07 1604.01
 9864.97    1604 9866.17 1604.03  9872.5 1604.04  9873.7 1604.05 9876.09 1604.07
 9878.41  1604.1 9879.64 1604.08 9881.25 1604.06 9881.32 1604.06 9881.97 1604.06
 9883.98  1604.1 9887.35 1604.05    9890 1604.04  9891.9 1604.03 9893.38 1604.03
 9893.98    1604  9899.8 1604.04 9904.24 1604.03 9910.18 1604.03 9928.59    1604
 9928.85    1604 9933.04 1603.91 9938.01 1603.83 9939.58  1603.8 9941.29 1603.78
  9943.9  1603.7 9948.55 1603.66 9959.88 1603.48 9973.11 1603.28 9973.99 1603.11
 9975.75  1602.8 9979.71    1602 9987.59 1600.51 9988.71 1600.29  9990.2    1600
 9990.23    1600 9990.28    1600 9990.31    1600 9990.36    1600 9990.39 1599.99
   10000  1599.510001.57 1599.1910007.25 1598.77 10010.5 1599.7510011.11 1599.93
 10011.2    160010011.36    160010011.59 1600.0710018.18    160210022.16 1603.22
10024.71    160410031.27 1605.9710031.38    160610031.67 1606.0910037.96    1608
10039.98  1608.610040.75 1608.78 10042.5 1608.9210045.83 1609.2910051.54    1610
10064.92    161110066.63 1611.0610082.61 1611.91

Manning's n Values         num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
 9673.96     .06 9973.11    .04510037.96    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9973.1110037.96            445.59  479.85  469.13              .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 3.15

INPUT
Description:
Station Elevation Data     num=       73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9820.3    1608 9820.79 1607.94 9821.15 1607.92 9822.35 1607.87 9839.11 1607.07
 9844.55  1606.1 9844.88    1606 9845.28 1605.93  9855.6    1604  9862.8 1602.65
 9866.24    1602 9868.49 1601.62 9870.18 1601.27 9872.04 1600.93 9887.02 1600.67
 9910.46  1600.3 9918.28 1600.12 9920.44 1600.09 9921.42 1600.08 9922.06 1600.07
 9922.61  1600.1 9923.08 1600.04 9925.55    1600 9927.02 1599.92 9928.01 1599.86
 9929.86  1599.8 9938.74 1599.28 9955.09 1598.41 9964.39 1599.14  9968.9 1599.49
 9973.61  1598.9 9980.11    1598 9982.26 1597.73 9982.89 1597.65 9984.32 1597.45
 9989.37  1596.8 9994.68 1596.49 9997.69 1596.35 9997.77 1596.35 9998.95 1596.29
   10000  1596.210004.74 1596.0810006.72 1596.0210006.76 1596.0110006.79 1596.02
 10009.7  1596.810012.15 1597.41   10013 1597.6210013.35  1597.710014.43    1598
10015.54  1598.310021.82    160010022.74 1600.1710022.97 1600.25 10028.6 1600.29
10031.38  1600.310038.87 1600.3510046.79 1600.4110048.54 1600.4310054.87 1600.48
10069.19  1601.2 10076.5 1601.5410084.17 1601.92 10097.2 1601.5210105.26 1601.28
10113.95    160110121.18 1601.7610123.51    160210124.89 1602.1410144.88    1604
10167.81  1605.810171.27    160610171.58 1606.02

Manning's n Values         num=        5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
  9820.3     .06 9925.55     .06  9968.9    .04510022.97    .05510084.17    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9968.910022.97            273.66  262.05  262.19              .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 3.10

INPUT
Description:
Station Elevation Data     num=       60
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9880.28  1606.7 9895.92    1606 9917.66 1604.89 9936.16    1604 9948.43 1603.09
 9953.69  1602.8 9955.79 1602.75 9957.62 1602.49 9960.25    1602 9967.79 1600.37
 9969.79    1600 9977.62 1598.33 9978.58 1598.13 9979.22    1598 9981.06 1597.66
 9988.42    1596 9993.95 1594.82 9995.65 1594.45   10000 1594.4710002.27  1594.5
10019.23  1594.610019.43 1594.6510025.76    159610034.26 1597.8710035.08    1598
10035.44  1598.110035.56 1598.0910051.35 1598.5610052.61  1598.610053.19 1598.63
10092.88    159910110.75 1599.1710110.87 1599.1710111.06 1599.1510116.13 1599.29
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10119.98  1599.310160.06 1599.5810161.97 1599.5510164.26 1599.5310166.12  1599.5
 10167.8  1599.510169.82 1599.44 10171.8 1599.3810174.38 1599.3310177.04  1599.3
10182.78  1599.210194.36 1599.0310204.43 1598.8610211.11 1599.62 10213.2 1599.85
10214.54    160010220.38 1600.6310232.75    160210255.08 1603.4910262.58    1604
10295.06    160610295.23    160610295.49 1606.01 10296.1 1606.0410308.93 1606.65

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9880.28     .06 9955.79    .04510035.44    .05510160.06    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9955.7910035.44           253.81  246.77  218.34             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.05

INPUT
Description:
Station Elevation Data    num=      87
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9849.61    1606 9850.27    1606 9861.43 1605.45 9891.18    1604 9904.39 1603.23
 9924.58    1602 9938.23 1601.02 9953.54    1600 9954.65 1599.92 9955.97 1599.83
 9957.53  1599.7 9964.22 1599.08 9974.23 1598.18 9974.43 1598.12 9974.98    1598
 9982.07  1596.1 9982.37    1596 9982.62 1595.93 9990.08    1594 9992.28 1593.42
 9997.43    1592 9997.52 1591.95 9998.05 1591.79 9998.27  1591.8 9998.35  1591.8
  9998.5  1591.8   10000  1591.910009.58    159210011.48 1592.0310013.48 1592.07
10021.26  1593.810021.92    159410022.27 1594.0810030.95    159610032.31 1596.34
10032.48  1596.410033.45 1596.3510042.55    1596 10048.3 1595.7510052.63 1595.59
10058.63  1595.710073.06    159610081.34 1596.1710085.38 1596.2610091.67 1596.37
10092.53  1596.410097.91 1596.6610102.31  1596.910103.49 1596.9410119.44 1597.36
10121.09  1597.310123.29  1597.310126.39 1597.2510129.35 1597.2210133.19 1597.14
10137.53  1597.110140.94 1597.1110144.71 1597.1510149.62 1597.2410151.84 1597.26
10153.28  1597.310159.47 1597.4610163.13  1597.410166.31 1597.3410173.12 1597.24
10175.49  1597.210182.56 1597.0610182.82 1597.0910183.16 1597.1410187.19 1597.63
10188.31  1597.810188.92 1597.8610189.22 1597.8810189.34  1597.910189.53 1597.92
10190.17    159810197.29 1598.9510200.64  1599.410202.83  1599.710205.25    1600
 10206.1  1600.110215.66 1601.2510222.02    160210224.05 1602.2410238.91    1604
10259.04  1605.410263.88 1605.79

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9849.61     .06 9974.23    .04510032.48    .05510119.44    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9974.2310032.48           462.57  427.28  371.63             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.97

INPUT
Description:
Station Elevation Data    num=      77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9714.04    1600 9716.35 1599.79 9719.13 1599.65 9727.11 1599.15 9735.06 1598.88
 9736.58  1598.8 9736.73 1598.82 9739.55  1598.6 9740.84  1598.5 9742.52 1598.34
 9743.71  1598.2 9746.07    1598 9760.52 1596.66 9767.82    1596 9771.97 1595.63
 9772.68  1595.6 9776.59 1595.61 9783.09 1595.68 9789.38 1595.72 9789.86 1595.72
 9794.24  1595.8 9797.25 1595.77 9799.42 1595.79 9799.93 1595.78 9859.86 1595.38
 9860.94  1595.4 9863.09 1595.36  9865.5 1595.34 9865.88 1595.34 9866.37 1595.34
 9878.95  1595.2 9880.14 1595.17 9881.22 1595.15  9885.3 1595.08 9890.82 1595.02
 9942.98  1594.4 9943.75 1594.35 9944.25 1594.35 9944.94 1594.34 9945.23 1594.34
 9945.69  1594.3 9945.91  1594.3 9946.11  1594.3 9955.14 1594.34 9969.97 1594.35
 9972.53  1594.4 9975.61 1594.35 9976.14 1594.22 9977.07    1594 9983.59 1592.18
 9984.19    1592 9984.71 1591.87 9985.11 1591.76 9988.58 1590.82   10000 1590.87
10001.75  1590.910008.75 1591.0210016.26 1591.0810016.67 1591.1510021.18    1592
10025.73  1592.910026.12 1592.9910039.09 1593.3710057.28 1593.8810057.36 1593.88
10058.06    1594 10058.1 1593.9610058.62    159410068.47  1594.810075.85 1595.38
10084.12    1596 10092.7 1596.7910107.53    159810123.03 1599.4410128.94    1600
10132.03  1600.210151.91    1602

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9714.04     .06 9975.61    .04510026.12    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9975.6110026.12           258.19  218.23  157.54             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.93

INPUT
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Description:
Station Elevation Data     num=      121
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
 9624.57     1600 9636.55 1599.38 9664.53 1598.02 9665.18 1598.01 9665.67 1598.01
  9675.5     1598 9675.63     1598 9675.81     1598 9676.82 1598.01 9678.81     1598
 9679.31     1598 9680.21 1597.96 9683.21 1597.84 9703.33 1596.98 9719.13 1596.22
 9719.52   1596.2 9720.93 1596.21 9721.86 1596.21  9722.2 1596.21 9724.54 1596.14
 9728.67     1596 9733.41 1595.85 9733.96 1595.84 9734.06 1595.83 9734.66 1595.79
 9734.67   1595.8 9735.12 1595.76 9737.83 1595.82 9738.69 1595.74 9741.24 1595.62
 9744.38   1595.4     9748 1595.02 9749.76 1594.86 9750.66 1594.77 9752.52 1594.64
 9753.89   1594.6 9762.35 1594.21 9762.68  1594.2 9767.04     1594 9769.79 1593.84
 9770.34   1593.8 9770.92  1593.8 9772.39 1593.69 9790.42 1593.42 9790.61 1593.44
  9792.3   1593.4     9816 1593.36 9825.21 1593.31 9825.89 1593.31 9827.96 1593.29
 9829.09   1593.3 9830.92 1593.26 9831.87 1593.26 9843.02 1593.09 9850.52 1592.03
 9850.73     1592 9851.86 1591.84 9854.95 1591.42 9859.56 1590.79 9859.75 1590.79
 9878.33   1591.9 9879.42 1591.94 9879.66 1591.96 9880.64     1592 9880.85 1592.01
 9881.21     1592 9883.08 1592.23 9887.88 1592.68 9888.13   1592.7 9888.32 1592.71
 9888.77   1592.7 9913.68 1592.56 9913.93 1592.57  9914.1 1592.54 9916.69     1592
 9917.55   1591.8 9919.49 1591.32 9922.63 1590.76 9947.72 1591.15 9954.32 1591.25
 9963.42   1591.4 9968.22 1591.19 9992.93     1590 9999.27 1589.69   10000 1589.62
10001.36   1589.6 10006.3 1589.9210007.36     1590 10014.9 1590.5710016.79  1590.7
10018.89   1590.810021.72 1591.0310031.05 1591.76 10031.8 1591.8210033.19 1591.93
10033.22   1591.910034.94     1592 10035.7 1592.03   10036 1592.0310036.15 1592.03
10036.24     159210037.58     159210057.78 1592.0910084.83 1592.25 10088.4 1592.27
10089.12   1592.410094.67 1593.2410099.68     159410106.59 1595.0410112.82     1596
10117.63   1596.710125.96     159810136.76 1599.3510142.36     160010159.03 1601.57
10163.57     160210166.91 1602.2910174.84 1603.0710184.63     160410185.87 1604.11
10186.86   1604.2

Manning's n Values         num=        6
     Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val
 9624.57      .06 9719.13      .06 9843.02     .045 9888.32      .06 9963.42     .045
   10036     .055

Bank Sta: Left    Right     Lengths: Left Channel    Right      Coeff Contr.    Expan.
       9963.42    10036            297.95  238.37  236.36              .1        .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.88

INPUT
Description:
Station Elevation Data     num=      103
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
 9647.56   1595.8 9667.46 1594.43 9674.61     1594 9685.39 1593.48 9694.21 1593.07
 9717.79     1592 9718.09 1592.01 9718.41 1592.02 9718.42 1592.01 9718.55 1591.99
 9727.93     1590 9733.13  1588.9 9737.45     1588 9739.98 1587.44 9740.63 1587.28
  9743.2   1587.5 9746.06 1587.77  9746.4 1587.81 9746.61 1587.83     9747 1587.91
  9747.2     1588 9747.28     1588 9755.61 1589.96  9755.8     1590 9755.88 1590.02
 9756.96   1590.3 9777.19 1590.61 9797.64 1590.92 9802.16 1590.48 9806.84     1590
 9811.92   1589.5 9814.02 1589.28 9821.62 1589.43 9830.99  1589.6 9835.58 1589.96
 9836.07     1590 9836.73 1590.05 9837.18 1590.08 9839.83  1590.3 9849.87 1591.13
 9852.33   1591.1 9853.05 1591.11 9861.56 1591.09 9867.72 1591.08 9875.99 1591.01
 9876.42     1591 9877.04 1591.01 9907.24 1591.09 9907.29  1591.1 9911.68 1590.78
 9919.93   1590.2  9920.7  1590.1 9921.28 1590.06 9936.68 1591.47 9937.06  1591.5
 9937.93   1591.5 9973.79     1590 9977.85 1589.81 9981.34 1589.62 9985.07 1589.13
 9991.77   1588.3 9993.92     1588 9997.72  1587.5   10000 1587.1510003.19 1586.76
10007.84   1586.810013.24 1586.8810014.17 1587.0510015.23 1587.2910019.11     1588
10024.53   1589.110027.03 1589.5510027.56 1589.6710027.78 1589.6710028.69 1589.67
10032.94   1589.710035.01 1589.7910035.92  1589.810044.64 1589.8910047.56 1589.86
10051.64   1589.910053.46 1589.8210053.78 1589.8210054.53 1589.9610054.66 1589.99
10054.75     159010056.17 1590.2310064.04 1591.68 10065.8     159210066.29 1592.08
10078.42     159410080.64 1594.3310091.97     159610104.98 1597.8810105.78     1598
10106.73   1598.110108.08 1598.1810109.41 1598.2610109.52 1598.27 10111.4 1598.63
 10120.7   1599.2 10123.8 1599.5310130.44     1600

Manning's n Values         num=        6
     Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val
 9647.56      .06 9717.79     .045 9756.96      .06 9849.87      .06 9981.34     .045
10027.56     .055

Bank Sta: Left    Right     Lengths: Left Channel    Right      Coeff Contr.    Expan.
       9981.3410027.56            237.82  234.26  230.56              .1        .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.84

INPUT
Description:
Station Elevation Data     num=      127
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
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 9636.75    1594 9648.26 1593.68 9649.08 1593.67    9650 1593.65 9665.67  1593.3
 9677.27    1593 9684.09 1592.87 9717.64 1592.09 9720.99    1592 9754.36 1590.16
  9756.7    1590 9757.43    1590 9758.91 1589.81 9763.93 1589.09 9767.23 1588.69
 9770.22  1588.4 9774.99    1588 9777.07 1587.81 9777.84 1587.75 9783.73 1587.43
 9784.71  1587.4 9787.56 1587.23 9790.24    1587 9795.92 1586.51 9798.98 1586.27
  9800.3  1586.2 9801.37 1586.17 9802.15 1586.17 9802.99 1586.17 9803.27 1586.16
 9803.61  1586.2 9804.24 1586.14 9806.64 1586.18  9807.8 1586.17 9810.38 1586.16
 9811.44  1586.1 9812.71 1586.08 9814.62    1586 9816.72  1585.9 9818.33 1585.85
 9820.05  1585.8 9823.22 1585.62 9828.18 1585.44 9832.24 1585.25 9835.88 1585.09
 9837.34    1585 9840.21 1584.99 9841.86 1584.95 9845.15 1584.84 9846.49  1584.8
  9848.8  1584.7 9850.37 1584.95 9852.49 1585.19 9858.06    1586 9859.01 1586.16
 9864.07  1586.8 9874.47    1588 9877.45 1588.38 9877.59 1588.39 9884.14 1588.36
 9887.92  1588.3 9888.94 1588.33 9889.85 1588.33 9909.35 1588.23 9911.21 1588.24
  9914.4  1588.2 9919.85 1588.27 9923.44 1588.27 9925.08  1588.1 9925.97    1588
 9929.34  1587.7 9932.78 1587.31 9935.71 1587.42 9940.12 1587.61 9951.11 1587.95
  9952.2  1587.9 9954.05 1587.97 9954.81 1587.99 9954.94    1588 9955.42 1588.01
 9955.59    1588 9956.66 1587.99 9957.24 1587.98 9960.27 1587.96 9969.89 1587.87
 9971.16  1587.8  9972.8  1587.8 9974.37 1587.78 9976.84  1587.7 9979.24 1587.64
 9980.38  1587.4  9986.6    1586 9992.31 1584.77 9993.38  1584.5 9996.14 1584.39
   10000  1584.210006.63 1584.0510006.99 1584.0510008.03 1584.28 10010.3  1584.7
 10011.7    158510012.27 1585.1310013.79 1585.4610016.21    158610020.64 1587.01
10022.77  1587.610023.52 1587.7310030.45 1587.6210058.12 1587.0310059.61 1587.45
10061.73    158810064.03 1588.8110068.42    159010074.25 1591.5310075.77    1592
10080.63  1593.410082.82    1594   10087 1595.1810089.73    1596   10091 1596.37
10096.63    159810096.73 1598.0310096.86 1598.0210096.87 1598.0210099.05 1598.17
   10127    160010127.28 1600.01

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9636.75     .06 9774.99    .045 9874.47     .06 9979.24    .04510023.52    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9979.2410023.52            330.86  324.24  320.86             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.77

INPUT
Description:
Station Elevation Data    num=      93
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9563.97    1590 9585.44 1589.67 9588.18 1589.61 9604.75 1589.36 9607.79 1589.32
 9611.94  1589.2 9616.25 1589.17 9621.38 1589.08 9627.73 1588.96 9636.04 1588.78
 9651.99  1588.4 9655.75 1588.36 9671.49    1588 9701.82 1587.15 9709.13 1586.96
 9715.01  1586.8 9722.74 1586.18    9725    1586 9737.34 1585.02  9748.8 1584.14
 9751.06  1584.2 9757.76 1584.45  9761.4 1584.53 9767.38 1584.69 9800.45 1585.91
 9801.14  1585.9 9801.42 1585.94  9801.6 1585.95 9801.74 1585.95  9801.9 1585.96
 9802.03  1585.9 9802.12  1585.9 9802.18  1585.9 9802.24  1585.9  9802.3 1585.98
 9803.11    1586 9803.12    1586 9803.42    1586 9807.85 1586.14 9810.04 1586.17
 9814.25  1586.1 9817.11  1586.1 9821.57 1586.07 9825.61    1586 9826.12 1585.99
 9828.87  1585.9 9831.01 1585.92 9841.38  1585.8 9850.35 1585.77 9855.73 1585.73
 9859.47  1585.7  9937.5 1585.82 9942.43 1585.83  9944.1 1585.85 9947.57 1584.84
 9948.81  1584.4 9950.34    1584 9951.43 1583.65 9957.32    1582 9957.61 1581.89
 9957.81  1581.8 9957.86 1581.84 9958.34 1581.84 9960.84  1581.8 9961.54 1581.88
 9961.98  1581.8 9962.61 1581.88 9969.65    1582 9994.64 1582.64 10005.8 1582.88
10006.98  1582.910011.27 1583.3310018.63    158410022.36 1584.3210025.81 1584.61
10028.97  1585.3 10030.9 1585.7710031.94    158610032.62  1586.110040.61    1588
10047.46  1589.510049.38    159010050.79 1590.32 10058.1    159210071.16 1593.81
10072.45    159410074.61 1594.2510088.12 1595.7410090.45    159610094.34 1596.47
10098.38  1596.910100.05    159710133.44    1598

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9563.97     .06 9701.82    .045  9801.9     .06  9944.1    .04510047.46    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9944.110047.46            178.45  226.63  231.52             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.73

INPUT
Description:
Station Elevation Data    num=     134
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9463.49  1589.9 9484.85 1589.49 9492.23 1589.36    9514 1588.94 9549.49 1588.36
  9555.6  1588.3  9571.4    1588 9574.83 1587.94 9593.73 1587.58 9605.41 1587.34
 9607.99  1587.3 9635.62 1586.73 9669.54    1586 9669.64    1586 9674.65 1585.84
 9679.95  1585.4 9680.78 1585.33 9687.21 1584.79 9690.14 1584.55  9692.1 1584.38
 9692.79  1584.3 9696.66    1584  9696.7 1583.99 9696.77 1583.99 9696.93 1583.99
 9697.49    1584 9698.79 1583.97 9706.84 1583.85 9709.46 1583.79 9713.28 1583.71
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 9718.99  1583.6 9725.83 1583.42 9731.54 1583.27 9732.78 1583.31 9734.69  1583.3
 9735.25  1583.3 9738.23 1583.41 9739.36 1583.42 9740.54 1583.44 9741.54 1583.47
 9743.14  1583.5 9746.63  1583.6 9749.49 1583.68 9751.98 1583.73 9753.19 1583.77
 9753.86  1583.8 9754.45  1583.8 9755.07 1583.81 9755.53 1583.83 9755.91 1583.83
 9756.25  1583.8 9756.48 1583.85 9756.68 1583.85 9757.04 1583.88 9757.34 1583.89
 9757.44  1583.9 9760.88 1583.89 9761.22  1583.9 9778.16 1583.88 9778.55 1583.89
 9785.18  1583.9 9792.64 1583.93 9802.12 1583.99 9802.18 1583.99 9802.98 1583.99
 9805.39    1584 9806.67    1584 9807.03    1584 9814.31 1583.95 9816.21 1583.92
 9817.82  1583.9 9820.75 1583.92 9831.76 1583.86 9850.99 1583.73 9853.61 1583.58
 9854.79  1583.5 9859.21 1583.18 9860.98 1583.05 9862.56 1582.95 9866.62 1582.61
 9870.14  1582.3 9872.98 1582.53  9874.1 1582.61 9876.55  1582.8 9880.01 1583.03
 9885.59  1583.4 9885.92 1583.36 9921.18 1582.35 9925.04 1582.32 9928.88 1582.33
 9940.59  1582.3 9975.04 1582.09 9980.86    1582 9983.02  1581.9 9986.22 1581.61
 9986.57  1581.5 9988.14 1581.13 9992.48    1580 9994.15  1579.6 9994.56  1579.5
 9995.37  1579.3 9995.94 1579.19   10000 1578.910003.56 1578.7710012.49  1578.3
10014.95    157910016.17 1579.32 10018.3    158010021.51 1580.9510024.84    1582
10027.31  1582.910028.721583.31910031.01    158410034.96 1584.91 10039.3    1586
10039.961586.13110045.34  1587.210049.51    158810055.42 1589.1810059.49    1590
10067.87 1591.6410069.65    159210071.85  1592.410076.06 1592.8910076.15 1592.89
10076.66 1592.8110076.83  1592.810077.43  1592.810081.55 1592.6910082.91 1592.64
10084.51 1592.6510095.58 1592.9610098.52    159310103.72 1592.88

Manning's n Values          num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9463.49     .06 9831.76     .06 9983.02    .04510045.34    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9983.0210039.96            128.19  200.52  336.66              .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.69

INPUT
Description:
Station Elevation Data     num=     179
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9470.36    1590 9475.13 1589.88  9480.6 1589.74 9549.68    1588 9566.59  1587.7
  9664.6    1586 9690.07  1585.5 9692.13 1585.45  9693.4 1585.33 9705.98    1584
 9712.18  1583.4 9713.51 1583.29  9716.1 1583.05 9740.12 1583.03 9741.63 1583.02
 9774.21 1582.56  9779.8 1582.54 9781.16 1582.53 9781.96  1582.5 9786.38 1582.47
 9792.34 1582.25 9792.68 1582.25 9792.98 1582.24 9793.93  1582.2 9793.98 1582.23
 9796.45 1582.24 9800.72 1582.33 9802.84 1582.38 9804.21  1582.4    9806 1582.47
 9809.24 1582.53 9809.92 1582.53 9810.71 1582.54 9811.56  1582.6 9813.87 1582.58
  9855.4 1583.18 9858.23 1583.19 9859.83  1583.2 9862.42  1582.9 9868.74    1582
 9871.43 1581.56 9872.07 1581.49    9874  1581.3 9874.93  1581.2 9880.22 1581.74
 9883.14 1581.97 9883.42    1582 9886.31 1582.27 9888.45  1582.5  9888.5 1582.51
 9888.65 1582.48 9891.57 1582.31 9902.07 1582.13 9903.05  1582.1 9903.59 1582.07
 9907.48    1582 9909.54 1581.97 9910.47 1581.95 9913.91  1581.9 9924.29 1581.72
 9925.61 1581.79  9927.5  1581.9 9928.77 1581.96 9929.65    1582 9930.34 1582.02
 9930.83 1582.04 9943.18 1582.34    9957 1582.56  9961.7  1582.6 9965.02 1582.67
 9970.32 1582.74 9973.49  1582.8 9974.39 1582.59 9977.22    1582 9983.48 1580.51
 9985.42    1580 9987.84 1579.43 9988.27 1579.34 9990.32  1578.8  9991.6 1578.54
 9992.12 1578.48 9996.47    1578   10000 1577.2510009.46 1576.610009.65 1576.54
10011.58 1577.1810012.05 1577.3110013.97    157810018.77 1579.710019.75    1580
10020.68 1580.3210020.86  1580.4   10021 1580.4410021.62 1580.710024.12 1581.58
10024.54 1581.7210025.39 1581.69 10034.3  1581.3   10040 1581.110043.53 1580.95
10045.67 1580.8710052.79  1580.610053.32 1580.6110055.56 1580.710055.76 1580.66
10058.03 1580.7310060.44 1580.8910062.85    158110064.71 1581.110066.12 1581.18
10077.33    158210080.62 1582.2810081.66 1582.3110082.66 1582.310090.42 1582.76
10092.89 1582.9210094.77 1582.9610099.61    158310109.32    158310113.56 1583.02
10157.54 1583.5410169.13 1583.5610183.08 1583.6110212.48 1583.510214.86 1583.52
10217.38 1583.52 10217.4 1583.5210217.41 1583.5210222.22 1582.710223.56 1582.43
10224.28 1582.3110225.86    1582 10230.2 1581.1210231.35 1580.910235.99 1580.01
10236.74 1580.0110236.89 1579.9810243.49 1579.8410244.64 1579.810246.53  1579.8
10247.66 1579.7710251.12 1579.7310252.16 1579.7210252.53 1579.710255.02 1579.68
10255.86 1579.7310257.79 1579.8310258.68 1579.8710266.64 1579.810267.48 1579.87
10267.77 1579.8410268.39 1579.8710269.01 1579.8910271.04    158010278.77 1581.42
10280.16 1581.6410282.59    158210286.27 1582.5410290.25 1583.110297.13    1584
10306.46    158510307.53 1585.1110309.53 1585.3610312.68 1585.810314.45 1586.02
10331.78 1585.6610346.27 1585.3310356.46 1585.1110359.79    158510365.08 1584.91
10372.46 1585.1510381.35 1585.4410385.03 1585.5610386.91 1585.610388.52 1585.68
10389.93 1585.71 10398.9    158610423.55  1587.310437.84    1588

Manning's n Values          num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9470.36     .06 9859.83     .06 9973.49    .04510024.54    .05510217.41    .036
10290.25    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9973.4910024.54            210.07  264.16  263.43              .1       .3
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CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 2.64

INPUT
Description:
Station Elevation Data num= 200

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9611.34	1589.9	9621.75	1589.42	9636.96	1588.65	9648.98	1588	9678.44	1586.69
9687.01	1586.3	9688.8	1586.27	9689.67	1586.26	9689.83	1586.26	9692.2	1586.27
9695.94	1586.3	9696.02	1586.27	9702.94	1586.25	9710.88	1586.22	9732.26	1586.13
9759.53	1586	9772.28	1585.88	9773.25	1585.87	9773.85	1585.87	9774.65	1585.85
9776.76	1585.8	9779.12	1585.77	9798.98	1585.53	9811.48	1585.34	9819.12	1585.2
9826.95	1585.1	9833.02	1584.14	9833.49	1584.07	9833.62	1584.05	9833.92	1584
9834.99	1583.8	9847.36	1582	9850.08	1581.56	9850.47	1581.5	9859.84	1581.26
9868.11	1581	9873.52	1580.9	9876.91	1580.81	9879.3	1580.74	9887.63	1580.58
9888.12	1580.6	9888.46	1580.56	9888.72	1580.56	9890.84	1580.52	9894.66	1580.29
9896.32	1580.2	9899.27	1580.03	9899.33	1580.02	9899.66	1580	9905.6	1579.62
9906.99	1579.5	9909.42	1579.67	9912.11	1579.82	9915.67	1580	9916.03	1580.02
9916.11	1580	9916.25	1580.03	9916.49	1580.05	9917.06	1580.08	9920.52	1580.08
9923.5	1580.1	9926.15	1580.07	9928.5	1580.06	9930.74	1580.04	9941.78	1580.17
9968.94	1580.3	9970.25	1580.39	9971.63	1580.42	9972.25	1580.41	9973.16	1580.4
9973.41	1580.4	9974	1580.31	9974.49	1580.27	9974.73	1580.26	9975.18	1580.07
9975.36	1580	9979.32	1578.4	9979.58	1578.3	9980.38	1578	9980.83	1577.8
9980.94	1577.7	9981.78	1577.41	9984.43	1576.35	9986.44	1576.2	9987.8	1576.07
9988.86	1576	9990.25	1576	9994.67	1576	10000	1576	10007.48	1576
10009.62	1576.1	10011.71	1576.29	10016.35	1576.6	10024.23	1577.75	10026.01	1578
10037.17	1579.5	10041.12	1580	10045.39	1580.54	10051.59	1581.33	10052.11	1581.4
10058.41	1580.6	10060.47	1580.32	10063.07	1580	10063.77	1579.92	10063.99	1579.89
10064.19	1579.9	10064.77	1579.8	10065.82	1579.67	10069.34	1579.26	10072.57	1578.88
10075.61	1579.1	10080.25	1579.49	10082.27	1579.65	10086.42	1580	10089.24	1580.25
10093.01	1580.6	10093.05	1580.58	10119.02	1580.51	10160.22	1580.85	10162.49	1580.87
10164.21	1580.9	10165.52	1580.91	10166.72	1580.92	10168.5	1580.99	10170.58	1581.02
10172.85	1581.1	10173.72	1581.1	10174.62	1581.12	10175.89	1581.15	10176.99	1581.17
10178.25	1581.2	10182.83	1581.33	10184.42	1581.36	10187.54	1581.34	10187.8	1581.35
10191.03	1581.4	10191.04	1581.42	10191.38	1581.42	10191.43	1581.43	10195.21	1581.46
10198.58	1581.5	10200.12	1581.46	10226.14	1581.87	10228.27	1582	10230.9	1582.09
10231.5	1582.1	10232.61	1582.11	10233.27	1582.13	10234.93	1582.18	10236.88	1582.21
10239.01	1582.3	10242.84	1582.34	10245.26	1582.45	10245.59	1582.47	10245.89	1582.5
10247.23	1582.6	10249.3	1582.71	10251.22	1582.87	10254.27	1582.95	10256.11	1583.07
10257.97	1583.1	10258.62	1583.17	10259.44	1583.21	10260.75	1583.24	10261.6	1583.27
10263.08	1583.3	10263.73	1583.33	10264.86	1583.36	10266.37	1583.43	10269.61	1583.5
10270.01	1583.5	10270.62	1583.51	10270.89	1583.51	10272.78	1583.58	10273	1583.58
10274.61	1583.6	10274.92	1583.63	10276.44	1583.64	10279.49	1583.69	10281.22	1583.71
10282.61	1583.7	10287.5	1583.8	10291.67	1583.84	10293.45	1583.9	10294.82	1583.93
10295.23	1583.9	10296.05	1583.96	10296.71	1583.98	10297.71	1584	10304.4	1584.18
10308	1584.3	10309.07	1584.29	10310.31	1584.32	10312.31	1584.4	10315.66	1584.49
10318.37	1584.6	10323.78	1584.87	10327.72	1585.15	10341.11	1586	10342.55	1586.09

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9611.34	.06	9973.16	.045	10052.11	.055	10093.01	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9973.16	10052.11	327.74	314.05	284.2	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 2.58

INPUT
Description:
Station Elevation Data num= 145

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9693.43	1588.1	9694.74	1588	9714.4	1586.2	9716.52	1586	9717.07	1585.95
9739.53	1584	9751.16	1583.55	9791.71	1582	9823.44	1580.82	9825.47	1580.75
9825.62	1580.8	9825.94	1580.76	9827.99	1580.73	9840.64	1580.55	9846.34	1580.48
9851.95	1580.4	9856.83	1580.33	9862.81	1580.24	9864.51	1580.21	9865.35	1580.2
9878.21	1580	9891.25	1579.78	9892.32	1579.76	9894.45	1579.71	9895.09	1579.69
9896.99	1579.7	9901.69	1579.52	9902.24	1579.51	9903.44	1579.55	9903.45	1579.55
9931.67	1579.9	9933.44	1579.94	9934.18	1579.95	9934.66	1579.95	9935.34	1579.96
9935.66	1580	9935.83	1579.97	9936.15	1579.97	9936.27	1579.98	9936.36	1579.98
9936.43	1580	9938.42	1580	9939.76	1580	9958.81	1580	9962	1579.91
9962.35	1579.9	9962.89	1579.9	9963.62	1579.89	9964.86	1579.86	9967.25	1579.82
9972.13	1579.7	9972.62	1579.73	9972.68	1579.7	9973.52	1579.36	9976.65	1578
9980.89	1576.2	9981.41	1576	9982.84	1575.42	9986.42	1574	9986.53	1573.89
9986.57	1573.9	9986.71	1573.79	9987.08	1573.65	9994.39	1573.74	10000	1573.8
10003.56	1573.9	10013.86	1574	10015.24	1574.02	10016.03	1574.03	10017.78	1574.05
10019.19	1574.5	10020.6	1574.86	10021.44	1575.11	10022.05	1575.27	10022.49	1575.38
10022.74	1575.4	10024.94	1576	10026.68	1576.49	10031.76	1578	10034.11	1578.73
10034.79	1578.9	10043.08	1578.88	10056.54	1578.75	10058.44	1578.29	10059.03	1578.14
10059.67	1578	10061.46	1577.56	10062.28	1577.37	10068.03	1576	10068.91	1575.77
10069.39	1575.7	10069.56	1575.62	10070.24	1575.7	10071.47	1575.85	10071.96	1575.91

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10072.76    157610079.17 1576.7910087.59 1577.8710090.57 1577.8810092.11 1577.86
10093.18  1577.9 10096.9 1577.8810103.26 1577.9610103.87 1577.9710104.28 1577.98
10104.68    157810106.53    157810158.38 1578.4610160.52 1578.4710165.58 1578.52
10171.82  1578.610175.41 1578.6110202.85 1579.0110202.99 1579.0210203.44 1579.04
10203.52    157910203.99 1579.0510204.83 1579.0710205.22 1579.0910211.79 1579.33
10213.86  1579.410217.85 1579.5810219.97 1579.6610223.64 1579.8310224.79 1579.81
10276.01  1579.810279.47 1579.7610279.73 1579.7610280.47 1579.7410290.41  1579.9
10295.83    158010325.49 1581.0310341.32 1581.6610341.58 1581.6910343.55 1581.93
 10343.8    158210344.34    158210350.33  1582.710361.52    1584 10365.3 1584.43
10368.83  1584.810373.16 1585.2710379.14    158610386.14 1586.8910392.76 1587.67

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9693.43     .06 9972.62    .04510034.79    .05510079.17    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9972.1310034.79           323.76  326.08  295.37             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.52

INPUT
Description:
Station Elevation Data    num=     168
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9765.82  1587.3 9767.18 1587.37 9769.24 1587.41 9769.84 1587.31 9772.84 1586.83
 9778.12    1586 9781.74 1585.44 9784.45 1584.97 9789.64    1584 9798.39 1582.47
 9800.89    1582 9804.31 1581.37 9812.12    1580 9821.23 1578.54 9824.43    1578
 9830.77    1577 9836.32    1576 9837.07 1575.86  9837.1 1575.85 9838.32 1575.86
 9841.19  1575.9 9842.21 1575.92 9842.83 1575.93 9843.42 1575.92 9858.88    1576
 9860.98    1576 9868.52    1576 9869.16    1576 9878.72 1576.56 9879.18 1576.58
  9882.7  1576.6 9885.82 1576.59 9899.54  1576.6 9900.59 1576.61 9902.12 1576.62
 9905.05  1576.6 9906.22 1576.61 9909.45 1576.58 9910.93 1576.58 9915.56 1576.53
 9918.85  1576.5 9919.59 1576.48 9923.33 1576.46 9925.04 1576.46  9925.8 1576.29
  9926.5  1576.1 9926.67 1576.04 9926.88    1576 9929.03 1575.53 9935.68    1574
 9938.13  1573.5 9939.18 1573.39 9939.44 1573.34 9948.08 1573.15 9956.62 1572.98
 9957.17  1573.1 9962.97    1574 9964.01 1574.21 9964.61 1574.31 9965.59 1574.43
 9974.21  1574.6 9982.51 1574.86 9982.69 1574.82 9983.31 1574.69  9983.7 1574.58
  9986.1    1574 9992.12 1572.42 9993.56    1572  9994.1 1571.84 9994.32 1571.78
 9994.82  1571.6 9999.27 1571.87   10000  1571.910000.81 1571.9310003.41    1572
10004.62    157210005.59 1572.0610006.47 1572.0810008.64 1572.61 10011.6 1573.34
10012.67  1573.6 10014.4    157410014.92 1574.1410017.19 1574.6810019.78 1575.21
10023.53    157610028.26 1577.0810028.39 1577.1110030.56 1576.7910030.65 1576.77
10033.05  1576.310034.43    157610037.43 1575.37 10039.3 1574.9810042.94  1574.2
10043.16  1574.210044.64 1574.5610048.56 1575.3910049.98 1575.6810050.57  1575.8
10050.81  1575.910050.94 1575.8810051.59    157610051.76 1576.0510052.15 1576.11
10053.38  1576.310057.26 1576.4910058.97 1576.5710062.24 1576.7310066.71 1576.93
10070.64  1577.110071.26 1577.1110071.33 1577.1110072.16  1577.110072.99  1577.1
10074.22  1577.110074.47 1577.0810090.65 1577.0910092.09 1577.0910134.81 1577.03
10137.66  1577.110139.12 1577.0410141.31 1577.0610142.78 1577.0510147.33 1577.07
10153.37  1577.110155.81 1577.1410156.76 1577.1310159.34 1577.0910160.18 1577.11
10161.24  1577.1 10161.8 1577.1410162.36 1577.1410162.88 1577.1310163.53 1577.12
10164.15  1577.110164.68 1577.1110170.27 1577.1310174.52 1577.1410191.21 1577.11
10191.46  1577.110191.69 1577.14 10193.9 1577.1710196.57 1577.1810198.04 1577.21
10201.01  1577.210203.86 1577.2410206.83 1577.2910208.13 1577.3610211.93 1577.47
10213.68  1577.610215.27  1577.610217.71 1577.6410220.46 1577.6710249.07    1578
10252.74  1578.210253.67 1578.2210253.95 1578.2310256.31 1578.3610261.88 1578.69
   10285    158010287.65 1580.1710288.49 1580.2410289.65 1580.4210293.05 1580.92
10299.45    158210307.44 1583.24 10312.1 1583.98

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9765.82     .06 9925.04    .04510028.39    .05510074.22    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9925.0410028.39           239.22  329.13  394.08             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.46

INPUT
Description:
Station Elevation Data    num=     194
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9710.13    1580 9724.88 1578.02 9725.03    1578 9725.17 1577.98 9743.45    1576
 9747.12  1575.6 9748.23  1575.5 9750.17  1575.3 9752.87    1575 9756.24 1574.63
 9759.55  1574.7 9763.52 1574.75  9770.1 1574.22 9772.24 1574.06 9772.58 1574.03
    9773    1574 9773.13 1573.99 9773.16 1573.99 9773.51 1573.96 9773.95 1573.92
 9774.21  1573.9 9776.35    1574 9779.56  1574.1 9791.96 1574.78 9795.12 1574.96
 9798.17  1575.1 9798.46 1575.14 9799.89 1575.19 9799.92 1575.19 9800.94 1575.21
  9801.1  1575.2 9808.66 1575.37 9810.44 1575.39 9815.49 1575.44 9818.42 1575.48
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9821.92	1575.5	9822.95	1575.51	9829.75	1575.7	9832.05	1575.68	9835.49	1575.67
9836.61	1575.7	9840.61	1575.69	9842.72	1575.7	9845.71	1575.87	9846.88	1575.93
9847.32	1576	9848.19	1576	9849.36	1576.07	9849.92	1576.1	9852.65	1576.24
9857.77	1576.5	9866.12	1576.19	9869.18	1576.07	9871.02	1576	9885.51	1575.43
9889.53	1575.3	9893.3	1575.12	9894.8	1575.16	9901.9	1575.39	9904.5	1575.44
9911.82	1575.5	9915.49	1575.53	9918.05	1575.5	9920.07	1575.31	9922.14	1575.17
9924.35	1575	9927.63	1574.71	9928.16	1574.7	9937.55	1575.47	9939.69	1575.62
9939.93	1575.6	9940.07	1575.63	9940.16	1575.63	9941.8	1575.67	9941.81	1575.67
9941.82	1575.7	9942.08	1575.67	9944.17	1575.67	9946.02	1575.65	9948.26	1575.62
9948.91	1575.6	9953.83	1575.37	9957.83	1575.21	9958.4	1575.19	9959.85	1575.11
9965.3	1574.7	9966.73	1574.63	9967.3	1574.5	9968.6	1574.2	9968.78	1574.14
9968.98	1574.1	9969.19	1574	9970.16	1573.73	9973.73	1572.82	9977.04	1572
9983.83	1570	9983.93	1570	9984.22	1569.91	9985.21	1569.86	9986.2	1569.9
9986.83	1569.93	9987.06	1569.94	9998.59	1569.4	10000	156910008.19		1568.9
10010.1	1568.7610010.25		1568.8310011.13		1569.2610012.45		157010014.89		1571.1
10015.35	1571.3310016.69		157210018.23		1572.8310020.65		157410022.11		1574.7
10022.42	1574.7710023.01		1574.95	10023.2	1575.0410023.27		1575.0410035.21		1575.1
10045.94	1575.1210051.23		1575.1410057.71		1575.1710060.21		1575.3910066.98		1576
10080.73	1577.2610089.12		1578	10090.2	1578.0910090.46		1578.1110091.36		1578.1
10092.68	1578.1410096.11		1578.3710097.24		1578.4110098.61		1578.3810099.81		1578.4
10100.44	1578.3510109.57		1578.410111.69		1578.410113.61		1578.410115.25		1578.4
10116.98	1578.4410118.77		1578.4510120.29		1578.4510121.15		1578.4210170.23		1578
10208.8	1578.6410209.26		1578.6310210.14		1578.6210212.14		1578.6110218.56		1578.7
10222.48	1578.6810272.17		1578.6910273.64		1578.710275.04		1578.6910278.24		1578.7
10281.1	1578.6610281.12		1578.6510282.11		1578.6410285.65		1578.6410286.36		1578.6
10287.18	1578.6210290.36		1578.5910293.07		1578.6610294.82		1578.6310296.23		1578.6
10299	1578.5510299.78		1578.5310300.51		1578.510303.54		1578.4310303.83		1578.4
10305.83	1578.3810306.88		1578.4310306.98		1578.4410307.21		1578.4510310.33		1578.6
10312.27	1578.7310314.87		1578.8610316.77		1578.9910318.83		1579.11	10323.3	1579.4
10323.4	1579.3610323.64		1579.3710324.24		1579.4510327.22		1579.8310327.64		1579.9
10328.68	158010330.45		1580.2210331.41		1580.3610336.43		1581.0710342.58		1581.9
10344.78	1581.9610348.18		158210348.21		158210350.21		1582		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9710.13	.06	9857.77	.06	9941.82	.045	10023.2	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9941.82	10023.2	221.1	275.02	335.08	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 2.41

INPUT
Description:
Station Elevation Data num= 275

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9642.5	1582	9643.88	1582	9659.48	1581.27	9661.08	1581.21	9663.47	1581.13
9666.9	1581	9675.85	1580.67	9675.99	1580.67	9676.04	1580.67	9677.53	1580.38
9679.41	1580	9687.11	1578.52	9689.91	1578	9697.38	1576.57	9698.86	1576.32
9700.6	1576	9702.36	1575.68	9704.51	1575.27	9714.22	1574.59	9717.41	1574.37
9718.62	1574.3	9719.54	1574.22	9720.05	1574.17	9722.04	1574	9724.54	1573.8
9726.02	1573.7	9729.54	1573.4	9735.36	1572.96	9738.74	1573.22	9742.72	1573.5
9750.49	1574	9750.53	1574	9750.58	1574	9750.61	1574	9750.63	1574
9753.69	1574.09	9754.34	1574.1	9759.2	1574.21	9761.28	1574.24	9763.84	1574.3
9765.77	1574.36	9766.24	1574.31	9766.67	1574.26	9769.32	1574	9769.76	1574
9770.6	1573.87	9787.45	1573.92	9787.66	1573.92	9787.81	1573.92	9788.12	1573.9
9793.41	1573.52	9800.72	1572.99	9800.98	1573	9811.75	1573.53	9812.24	1573.5
9822.06	1573.78	9823.78	1573.57	9824.91	1573.44	9829.28	1572.95	9831.01	1572.7
9832.01	1572.63	9837.95	1572.51	9842.31	1572.4	9861.03	1572.22	9861.7	1572.3
9862.41	1572.25	9862.72	1572.23	9862.96	1572.25	9866.22	1572.49	9867.36	1572.5
9870.8	1572.68	9886.65	1573.32	9886.79	1573.32	9886.8	1573.32	9889.78	1573.3
9890.05	1573.26	9893.74	1573.18	9894.41	1573.2	9895.26	1573.22	9899.57	1573.2
9901.52	1573.21	9902.33	1573.21	9904.89	1573.24	9906.93	1573.27	9908.59	1573.3
9910.98	1573.31	9913.24	1573.35	9917.39	1573.4	9919.38	1573.43	9921.36	1573.5
9925.07	1573.52	9926.23	1573.54	9926.86	1573.54	9931.93	1573.6	9932.14	1573.6
9937.01	1573.71	9937.36	1573.73	9938.03	1573.69	9938.14	1573.69	9940.43	1573.6
9940.8	1573.62	9941.15	1573.61	9942.96	1573.53	9943.64	1573.5	9946	1573.4
9948.05	1573.25	9949.77	1573.19	9951.2	1573.12	9951.56	1573.05	9952.12	1573
9953	1572.97	9961.59	1572.85	9962.4	1572.86	9963.73	1572.88	9965.08	1572.9
9968.49	1572.81	9970.64	1572.84	9971.75	1572.54	9972.4	1572.34	9973.31	1572
9974.42	1571.68	9979.99	1570	9983.77	1568.98	9987.08	1568	9990.44	1567.2
9990.58	1567.16	9993.73	1566.86	10000	1566.4	10002.1	1566.0510008.18		1565.5
10011.39	1566.6910015.16		156810018.21		1569.0610020.04		1569.6810020.96		1570
10021.69	1570.2510026.71		157210027.18		1572.1710027.38		1572.2710027.75		1572.4
10029.11	1572.9110032.23		1573.2310034.77		1573.4310036.99		1573.5810046.38		1574
10050.6	1574.210060.64		1574.5310069.18		1574.3510077.42		1574.2310077.51		1574.3
10081.99	1574.2910089.97		1574.3810092.57		1574.3910094.06		1574.410097.67		1574.4
10101.34	1574.4610106.62		1574.5410111.18		1574.5810120.58		1574.6910133.53		1574.9
10136.83	1574.6910145.63		1574.3410148.91		1574.210149.96		1574.1710150.89		1574.1
10154.65	157410157.03		1573.9210157.54		1573.910158.76		1573.8510161.12		1573.8

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10162.14  1573.810168.41    157410177.47 1574.2910198.69 1574.9510202.31  1575.1
10202.51 1575.0810203.16 1575.0910203.53 1575.0910205.41 1575.1410210.54  1575.2
10211.69 1575.1710214.49 1575.18 10217.1 1575.2110221.21 1575.2310224.37  1575.2
10226.74 1575.2510228.44 1575.2510245.56 1575.3410246.31 1575.3210247.22  1575.3
10248.34 1575.2910254.38 1575.26 10256.1 1575.3310257.25  1575.4 10259.6  1575.5
10260.87 1575.5810262.12 1575.5510263.53 1575.5210265.03 1575.4910271.68  1575.5
10273.21  1575.410277.61 1575.2310280.06 1575.1910283.22 1575.1610285.19  1575.2
10287.57 1575.1710290.88 1575.2410292.74 1575.1910293.36 1575.1510294.13    1575
10295.32 1574.94 10296.3 1574.8310305.65    157410308.25 1573.7610308.75  1573.7
10308.98 1573.6810309.32 1573.6510310.09 1573.5710311.24 1573.4310313.55    1573
10314.09 1572.8710316.74 1572.6210319.18 1573.1710320.76 1573.6110322.72    1574
10323.87 1574.2310323.99 1574.2710324.32 1574.3810324.77 1574.4410325.34  1574.5
10326.36 1574.7210330.37 1575.4610330.71 1575.4710333.66  1575.510336.54  1575.6
10338.78 1575.6310340.56 1575.6610343.72 1575.78 10344.8 1575.8110345.58  1575.8
10347.52  1575.910348.17 1575.9210348.55 1575.9310349.84    157610375.26  1576.6
10385.27 1576.8210399.55 1577.1110408.36 1577.2710431.32    157810449.65  1578.3
10459.37 1578.38 10465.3 1578.4310476.98 1578.5410482.94 1578.6110488.38  1578.7
10493.28 1578.75 10497.5 1578.7910501.26 1578.8210504.74 1578.8410507.92  1578.8
10510.86 1578.8410513.61 1578.8410518.41 1578.8410533.75 1578.8610534.17  1578.9
10546.67    157910555.21  1579.110557.43 1579.1310564.25 1579.1710566.62  1579.2
10567.76 1579.2110581.55 1579.3510597.16 1579.5110613.48 1579.7210631.05    1580

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
  9642.5     .06 9970.64    .04510029.11     .0610292.74    .05510330.37     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9970.6410029.11            318.45  326.48  347.74              .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.35

INPUT
Description:
Station Elevation Data     num=      82
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9659.48  1576.1 9673.12    1576 9683.76 1575.67 9692.72  1575.4 9705.89 1575.01
 9712.65 1574.83 9719.43 1574.66 9721.28 1574.62  9767.8  1574.7 9776.68 1574.45
 9787.89    1574 9794.57 1573.89 9805.17 1573.12 9814.68 1572.31 9823.31 1571.46
 9833.13 1570.98  9839.7 1570.53 9850.48 1570.82 9859.77 1570.87 9861.44 1570.82
 9884.01 1570.85 9897.66 1569.98  9898.7  1569.8 9898.78 1569.84    9915    1570
  9920.5 1570.05 9922.22  1570.2  9931.3    1571 9947.41 1570.94 9950.98  1570.9
 9957.41 1570.85 9965.84 1570.85 9966.72  1570.5 9967.26 1570.33 9967.51 1570.26
 9968.29    1570 9969.81 1569.47 9973.56    1568 9977.63 1566.48 9978.67 1566.15
 9978.97 1566.03 9979.74 1566.04 9980.37    1566 9981.42 1565.92 9983.02 1565.84
    9985 1565.79 9985.63 1565.83 9992.93  1565.7 9993.67 1565.65 9994.28 1565.62
 9996.59 1565.4910003.56 1565.3810004.51 1565.210006.21 1564.9210006.35 1564.89
10006.72 1565.0110009.92    1566 10013.1    1567 10016.3 1567.7310017.35    1568
10021.52 1569.1710022.49 1569.4310023.42 1569.610031.61 1569.91 10043.6  1570.1
10057.65    157210068.61 1573.6210071.38    157410076.84 1574.0310097.57  1574.4
10110.87 1574.8410125.59 1575.17 10150.3 1575.8110169.28 1575.7810170.87 1575.76
10196.07 1575.73 10204.6 1575.7310239.93 1575.5610247.66  1575.5 10266.6 1575.29
10270.75  1575.210275.98 1575.13

Manning's n Values         num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9659.48     .06 9884.01     .06 9965.84    .04510071.38    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9965.8410071.38            341.44  328.76  318.53              .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.28

INPUT
Description:
Station Elevation Data     num=      96
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9730.94    1574 9751.71 1573.08  9820.8 1572.03 9832.74 1571.82 9842.62 1571.71
 9853.12 1571.63 9862.51 1571.54 9871.22  1571.5  9882.5  1571.4 9891.45 1571.17
 9904.01 1570.91 9911.32 1570.81 9918.93 1570.64 9928.14  1570.3 9935.66    1570
 9941.42 1569.74 9941.94 1569.72 9942.65 1569.69 9962.96  1568.9 9964.66 1568.92
 9966.07 1568.83 9967.86 1568.64 9968.35  1568.6 9969.47  1568.3 9970.11  1568.2
 9971.15    1568 9974.37 1567.21 9979.36    1566 9980.76  1565.6 9983.29 1565.08
 9987.18 1564.9410009.17 1564.0810010.63 1564.4910011.99  1564.810015.77    1566
10019.23 1567.0310022.64    156810026.45 1569.17 10026.9  1569.310029.71 1569.28
10067.52 1569.0810082.71 1568.9910093.45    156810100.84  1566.810101.15 1566.77
 10101.2 1566.7710101.34 1566.7510104.89 1566.4510107.23  1566.210110.97  1566.2
10111.76  1566.2 10115.9  1566.310118.06 1566.2910119.14  1566.310122.05 1566.34
 10123.2 1566.3410126.98 1566.33 10127.1 1566.3310127.55  1566.3 10127.8 1566.34
10142.77 1567.3910150.53 1567.2910151.33 1567.3110152.41  1567.310153.83 1567.37
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10153.95 1567.3810160.47    156810163.13 1568.26 10166.3  1568.510168.75 1568.83
 10179.6    157010180.62 1570.1110197.49 1571.9710197.86    157210207.98 1573.51
10211.08 1573.8110211.24 1573.82 10213.6    157410218.77  1574.410225.62 1574.89
 10227.2 1575.04 10228.9 1575.15 10231.3 1575.3510233.62  1575.510237.36 1575.64
10237.85 1575.67 10240.4 1575.7510241.53 1575.8110246.93  1575.9 10247.4 1575.96
10247.82 1575.96 10248.1 1575.9710249.99 1575.9810251.34    157610252.17 1576.01
10257.12 1576.13

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9730.94     .06 9966.07    .045 10026.9    .05510082.71    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9966.07 10026.9           507.59  485.85  455.74              .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.19

INPUT
Description:
Station Elevation Data    num=     287
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9723.46  1571.8 9728.95 1571.43 9730.39 1571.31 9730.46  1571.3 9730.76 1571.24
 9731.33  1571.2  9731.9 1571.21 9734.14 1571.21 9736.07 1571.27 9736.49 1571.26
 9775.69  1570.6 9776.52 1570.61 9777.58 1570.56 9778.19 1570.55 9779.19 1570.54
 9804.69    1570 9820.24 1569.56  9847.7  1568.5 9865.32 1568.46 9867.58 1568.44
    9872  1568.4 9880.12 1568.35 9888.89 1568.28 9897.64  1568.2 9915.96    1568
 9931.66  1567.2 9935.12 1567.03 9936.77 1566.96 9936.98 1566.99 9937.25    1567
 9937.68    1567 9952.54 1567.19 9957.19 1567.25 9958.92 1567.24 9963.83  1567.2
 9966.31  1567.2 9968.62 1567.27 9971.44 1567.31 9976.44 1567.47 9982.32 1567.63
 9984.19  1567.7 9985.43 1566.24 9985.51 1566.15 9985.59    1566 9985.76 1565.74
  9987.4    1564 9988.14 1563.54 9988.38 1562.96    9989    1562 9989.73 1560.91
 9990.03  1560.6   10000 1560.6510003.38 1560.7410004.93 1560.7510007.03 1561.19
10010.72    156210016.08 1563.3810018.52    156410020.13 1564.4110026.15  1565.9
10028.45  1565.810035.29 1565.47 10038.6 1565.3610039.66 1565.3110043.43 1565.03
10046.19  1564.910051.22 1564.7210055.79 1564.5710065.63 1564.0610066.56    1564
10067.81  1563.910071.45 1563.7510073.16 1563.8410074.42 1563.7810076.26    1564
10078.62  1564.310079.15 1564.3410080.07 1564.4510080.82 1564.5510083.78 1564.85
10084.85    156510086.23 1565.2410088.49 1565.6910090.16 1566.0610090.56 1566.09
10090.63  1566.110091.73 1565.9910091.86 1565.9810092.64 1565.9410094.22 1565.94
10095.59  1565.910097.33  1565.910097.92 1565.8710164.19 1565.9610167.61    1566
10169.18    156610172.48    1566 10185.3    156610186.83    156610194.43 1565.84
10195.38  1565.810196.81 1565.7410199.03 1565.6910205.54  1565.510215.64 1565.22
10224.13  1564.410226.48  1564.210228.68    156410229.41 1563.94 10232.8 1563.62
10233.71  1563.710235.93    156410244.19 1565.2210250.28    156610251.65 1566.22
10252.18  1566.3 10254.9 1566.1410257.78    156610260.23 1565.8610265.32 1565.62
10266.67  1565.710267.18 1565.66 10267.9 1565.68 10270.9  1565.710271.89 1565.72
10272.64  1565.710274.57 1565.8110280.31    156610281.25 1566.0310281.56 1566.04
 10282.2  1566.1 10299.4 1566.6410304.07 1566.7610308.91 1566.8910310.95 1566.93
10311.54    156710312.39 1567.0710313.83 1567.2310314.54 1567.3110321.28    1568
10328.05  1568.710328.63 1568.7210329.77 1568.7310330.93  1568.810331.76 1568.81
10350.81  1568.910352.55 1568.9110357.01 1569.0910364.88  1569.1 10374.2 1569.26
10384.24  1569.310388.17 1569.3510393.08 1569.3310394.88 1569.3710395.26 1569.38
10396.28  1569.4 10397.3 1569.3910413.07 1569.3510414.47 1569.3110416.56 1569.26
10420.69  1569.210423.14 1569.1110425.38 1569.0610427.02 1569.0410428.94    1569
10431.99  1568.810434.41  1568.810438.95 1568.5810441.34 1568.4710445.85 1568.51
10446.82  1568.510447.99 1568.4810449.14 1568.4610449.78 1568.4810452.12 1568.43
10453.46  1568.410454.32 1568.4110517.94 1569.0310519.17 1569.0410562.03 1569.73
10569.25  1569.810579.39    157010585.27 1570.0110597.85 1570.02 10603.2 1570.02
10609.02    157010615.06 1570.04 10621.1 1570.0510629.75 1570.0610639.96 1570.07
10643.42  1570.110649.88 1570.0810659.07 1570.0910668.08  1570.110685.43 1570.11
10689.48  1570.110691.49 1570.1110694.26 1570.1110697.93 1570.1110700.78  1570.1
10702.72  1570.110703.65  1570.110708.65 1570.0810710.39 1570.0710711.59 1570.06
10712.12  1570.110716.94    157010722.63 1569.8610723.28 1569.8810724.04 1569.91
10727.56  1569.910730.21 1569.7910732.81 1569.71   10740 1569.1610749.87 1568.42
 10756.2  1568.3 10767.4 1568.0110768.02    156810782.07  1567.710791.45 1567.52
10795.64  1567.610795.78 1567.5610802.75  1567.610804.31 1567.6110807.75 1567.64
10815.05  1567.710844.83    156810854.95 1568.1310871.77 1568.1910876.87 1568.44
10897.13  1569.510904.85    157010908.03 1570.16 10908.8 1570.2110913.81  1570.1
10915.08  1570.110922.28 1570.0210922.75 1570.0210922.88 1570.0110922.93 1570.01
10923.03    157010925.24 1570.0210931.13    157010934.47 1569.9910934.54 1569.99
10940.68    157010940.72    157010940.74    157010941.06 1569.9910943.33 1569.98
10943.45    157010943.48 1569.9810943.54 1569.9710951.69  1569.810952.14  1569.8
10952.38  1569.810973.68 1569.4510987.92 1569.2910989.61 1569.2410991.12 1569.22
10994.62  1569.111000.53 1569.0411002.92 1568.96 11004.7 1568.9511008.38 1568.85
11012.06  1568.811016.29 1568.6711017.87 1568.6711027.74 1568.8211036.59 1568.96
11040.65    1569 11041.9 1569.0111042.81 1569.0211043.37 1569.03 11046.7 1569.04
11079.35  1569.711081.26 1569.7311087.33  1569.911095.07    157011104.37 1570.36
11106.87  1570.411115.07 1570.5911118.22 1570.6511138.64 1571.1411153.38 1571.53
11175.16    157211176.22 1572.03
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Manning's n Values          num=        4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9723.46     .06 9984.19    .04510026.15    .05510164.19    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9984.1910026.15           306.52  310.72  225.43             .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev
   1039311176.22    1572

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.13

INPUT
Description:
Station Elevation Data     num=     285
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9606.68    1570 9609.57  1569.7 9625.91    1568 9628.56  1567.8 9633.23 1567.39
 9649.59  1566.4 9671.55 1567.72 9680.17    1568 9700.96 1569.51 9702.89 1569.63
 9776.14  1568.4 9800.11    1568 9801.55 1567.96 9837.69 1566.94 9866.87    1566
 9868.69  1565.9 9888.98 1565.38  9891.8  1565.3  9893.1 1565.26 9893.93  1565.3
 9895.79  1565.4 9897.54 1565.46 9899.29 1565.52 9921.26  1565.8 9922.14 1565.81
  9923.8  1565.8 9924.84 1565.79 9924.98 1565.79 9926.72 1565.78 9928.31 1565.75
  9932.1  1565.7 9935.87 1565.62  9944.1 1565.64 9957.37 1565.59 9969.33 1565.54
 9969.47  1565.5 9972.54 1564.68 9974.46 1564.14  9974.7 1564.07 9974.92    1564
 9975.15  1563.9 9981.46    1562 9985.13 1561.08 9988.42    1560 9989.65 1559.62
 9990.16  1559.4 9999.95 1559.26   10000 1559.1510008.43 1559.08 10009.6 1559.56
10010.19  1559.810010.39 1559.8910010.65    1560 10011.5 1560.3610015.46    1562
10019.83  1563.810020.13  1563.9 10023.4 1563.4710029.68  1562.610036.59 1562.98
10040.19  1563.210046.94 1563.7510049.78    156410050.73 1564.0810051.21 1564.11
 10051.5  1564.110051.78 1564.0410052.03    156410055.21 1563.6210059.77 1563.14
10067.17  1562.310071.09 1561.8310077.62 1562.54 10082.4 1563.1110084.48 1563.36
10089.34    156410090.03 1564.0810090.64 1564.1210091.82 1564.2110093.46 1564.25
10094.34  1564.310102.29 1564.4210108.03 1564.41 10108.2 1564.3910109.51 1564.26
10151.39  1565.510166.56    156610168.03 1566.1310169.21 1566.2610180.05 1567.38
10240.99  1566.310260.29    156610261.84 1565.9910265.68 1565.9710268.71 1565.96
10268.78    156610270.23 1565.9810270.33 1565.9810270.61 1565.9810271.01 1565.98
10282.14    156610284.84    156610288.61    156610288.72    156610288.93    1566
10289.59    156610296.06 1566.0410296.46 1566.04 10297.9 1566.0610298.94 1566.02
10299.44    1566 10299.7 1566.0110299.85 1566.0210299.98 1566.0510300.61 1566.07
10314.64  1566.210315.52  1566.210319.36 1566.2610326.71 1566.3510330.13  1566.4
10332.85  1566.410336.34  1566.510337.24 1566.5110352.27 1566.6310363.29 1566.71
10388.45  1566.910401.09 1566.9810418.79 1567.1210418.89 1567.1210435.02 1567.27
10450.31  1567.410455.23 1567.44 10458.7 1567.4710460.84 1567.4910466.82 1567.54
10474.19  1567.610475.18 1567.5910483.98 1567.6310494.34 1567.6910506.87 1567.78
10522.49  1567.910524.41 1567.9310525.12 1567.9410525.22 1567.9410525.38 1567.94
10525.83  1567.910525.98 1567.9410526.04 1567.95 10526.1 1567.9510526.31 1567.95
10526.79    1568 10526.9 1567.9610526.97 1567.96   10527 1567.9610527.08 1567.96
10527.15    1568 10527.2 1567.9610527.27 1567.9610527.49 1567.9510527.57 1567.95
10527.63  1567.910528.32 1567.9410535.27 1567.9910536.21    156810536.24    1568
10539.79    156810543.86 1568.0110544.73    156810553.05 1567.9510553.19 1567.95
10553.34  1567.910561.29 1567.8610562.51 1567.8310563.32 1567.82 10566.1 1567.76
10574.78  1567.610580.46 1567.4810587.39 1567.3210602.75 1566.9510621.66 1566.49
 10623.8  1566.410628.44 1566.3110632.52 1566.2110635.41 1566.1410637.28  1566.1
10641.06    156610643.96 1566.0210645.62    156610645.92 1565.9910645.96 1565.99
10645.99    156610646.02 1565.9910646.05 1565.9910646.16 1565.9910667.95 1565.51
 10669.3  1565.510671.37 1565.4910675.35 1565.5210676.52 1565.4710677.98 1565.42
 10678.8  1565.410681.28 1565.5510681.57 1565.5610681.74 1565.5710686.54    1566
 10694.8  1566.310700.33 1566.3710707.55 1566.5610708.64 1566.5810708.93 1566.59
   10715  1566.7 10720.9 1566.7610722.43  1566.810724.31 1566.8210724.49 1566.82
10726.66  1566.910726.96 1566.8910727.27 1566.8910728.89 1566.9410729.28 1566.93
10733.76    156710734.83 1566.9810736.54 1566.9510737.57 1566.9510738.87 1566.92
10740.51  1566.910741.91 1566.8310743.23  1566.810745.06 1566.7210747.11 1566.73
10749.14  1566.910751.56  1566.910753.71 1566.91 10754.9  1566.910758.62  1566.9
10760.83  1566.910766.24 1566.9410766.26 1566.9410766.42 1566.9410768.39 1566.94
10769.46  1566.910769.78 1566.9410773.23 1566.9210773.99 1566.9110778.05 1566.88
10779.25  1566.9 10781.3  1566.910783.14  1566.910784.52 1566.9110785.62  1566.9
10787.35  1566.910788.99 1566.8810791.41 1566.8510794.45 1566.8210796.82 1566.79
10802.61  1566.8 10804.5 1566.7510806.08 1566.73 10807.5 1566.7210810.61 1566.69
10811.65  1566.710814.74 1566.6510817.74 1566.6210818.31 1566.6110821.37 1566.58
 10821.7  1566.610821.81 1566.5810824.92 1566.5410824.95 1566.5410828.14 1566.69
10830.38  1566.810835.34 1567.1410839.13 1567.2110841.41 1567.2610843.52 1567.33
10853.08  1567.5 10855.1 1567.5910856.71 1567.6310858.68 1567.7210861.15 1567.77
10873.69    156810889.89 1568.4910930.49    157010952.96 1570.6610994.77 1571.99

Manning's n Values          num=        5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9606.68     .06 9702.89     .06 9969.33    .04510020.13    .05510051.21    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9969.3310020.13           269.34  278.55  369.36             .1       .3
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Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9606.68	9775.45	1570	10544.71	0994.77	1570

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 2.08

INPUT
Description:
Station Elevation Data num= 389

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9471.11	1567.9	9495.49	1567.18	9500.14	1567.16	9502.9	1567.09	9506.51	1567.03
9509.07	1567	9510.22	1566.93	9513.22	1566.82	9515.56	1566.81	9519.08	1566.77
9523.03	1566.7	9526.91	1566.63	9527.24	1566.66	9528.72	1566.61	9530.65	1566.57
9533.57	1566.6	9533.73	1566.57	9535.68	1566.66	9535.91	1566.66	9537.83	1566.53
9546.54	1566.4	9563.92	1566.18	9565.51	1566.17	9565.64	1566.15	9567	1566.17
9574.46	1566.3	9586.74	1566.17	9598.76	1566.07	9602.58	1566.05	9605.93	1566
9613.45	1565.8	9614.08	1565.81	9614.8	1565.79	9615.39	1565.78	9615.78	1565.77
9626.79	1565.5	9627.48	1565.47	9628.83	1565.44	9637.23	1565.26	9638.2	1565.22
9639.16	1565.2	9640.16	1565.16	9646.88	1565.04	9648.09	1565.03	9649.6	1565.01
9651.38	1565	9653.29	1564.95	9654.83	1564.92	9664.37	1564.78	9666.8	1564.73
9668.57	1564.7	9670.41	1564.65	9672.63	1564.6	9674.83	1564.57	9676.98	1564.52
9679.19	1564.5	9681.29	1564.42	9683.25	1564.36	9687.07	1564.21	9688.7	1564.2
9689.74	1564.2	9690.52	1564.19	9691.74	1564.22	9693.94	1564.27	9702.74	1564.13
9705.48	1564.1	9709.19	1564.02	9711.96	1564.01	9712.38	1564	9712.58	1564
9714.87	1563.9	9715.25	1563.92	9715.8	1563.9	9725.27	1563.68	9726.54	1563.62
9727.66	1563.6	9728.6	1563.53	9729.08	1563.51	9731.89	1563.39	9733.37	1563.32
9735.26	1563.2	9736.43	1563.19	9738.77	1563.11	9739.21	1563.1	9742.17	1563.13
9742.46	1563.1	9743.04	1563.11	9743.13	1563.11	9747.45	1563.11	9747.73	1563.12
9749.33	1563.2	9752.47	1563.27	9755.1	1563.29	9756.64	1563.34	9758.72	1563.32
9760.2	1563.3	9761.69	1563.25	9762.74	1563.23	9764.83	1563.27	9766.36	1563.3
9767.85	1563.3	9768.84	1563.38	9770.61	1563.43	9771.53	1563.46	9773.86	1563.54
9774.54	1563.6	9779.22	1563.7	9779.49	1563.7	9780.95	1563.65	9782.33	1563.68
9784.14	1563.7	9788.63	1563.5	9789.24	1563.46	9793.27	1563.37	9796.48	1563.24
9803.06	1563.1	9804.29	1563.07	9805.2	1563.07	9806.1	1563.03	9821.49	1562.33
9827.92	1562	9829.3	1561.93	9840.86	1561.36	9841.45	1561.39	9845.62	1561.62
9847.23	1561.7	9848.45	1561.7	9854.74	1562	9858.97	1562.2	9859.48	1562.23
9860.33	1562.3	9861.43	1562.36	9870.26	1562.55	9871.28	1562.53	9872.21	1562.46
9872.63	1562.4	9873.08	1562.47	9874.24	1562.36	9874.83	1562.43	9875.27	1562.48
9875.66	1562.5	9876.01	1562.51	9876.57	1562.52	9879.32	1562.06	9879.59	1562
9883.75	1561.1	9884.24	1560.96	9885.8	1560.94	9886.01	1560.94	9888.4	1560.96
9889.96	1561	9890.76	1560.96	9891.83	1560.97	9894.87	1561	9896.4	1561.02
9897.89	1561	9901.2	1561.04	9902.35	1561.04	9905.25	1561.04	9906.2	1561.05
9912.67	1561.1	9914.77	1561.08	9916.81	1561.04	9916.92	1561.04	9918.62	1561.03
9918.7	1561	9920.21	1561.03	9920.26	1561.03	9921.75	1561.04	9921.78	1561.04
9923.59	1561	9923.97	1561.04	9926.23	1561.03	9926.45	1561.01	9926.97	1560.99
9931.09	1560.9	9933.09	1560.93	9933.69	1560.98	9935.39	1561.26	9937.33	1561.56
9938.56	1561.7	9939.12	1561.84	9940.16	1562	9943.97	1562.61	9949.44	1563.47
9956.81	1563.4	9965.95	1563.38	9973.16	1563.33	9977.22	1563.35	9978.05	1563.13
9982.23	1562	9987.5	1560.55	9989.47	1560	9992.05	1559.3	9993.94	1558.79
10000	1558.71	0020.22	1558.55	10022.94	1558.52	10023.14	1558.57	10025.61	1559.08
10029.54	1560	10034.82	1561.24	10038.29	1562	10041.95	1562.89	10042.54	1563.02
10056.18	1562.3	10058.9	1562.21	10059.95	1562.15	10064.3	1562	10064.57	1561.99
10064.88	1562	10065.26	1561.97	10065.76	1561.96	10066.71	1561.95	10074.49	1561.93
10075.23	1561.91	0076.16	1561.88	10077.67	1561.91	10091.75	1563.51	10093.46	1563.73
10094.15	1563.81	0094.49	1563.87	10095.68	1564	10096.35	1564.07	10097.87	1564.27
10103.94	1565	10104.09	1565	10111.5	1564.97	10132.16	1564.79	10156.55	1564.62
10165.53	1564.61	0171.17	1564.56	10177.41	1564.53	10208.22	1564.31	0212.03	1564.27
10214.33	1564.31	0215.92	1564.25	10235.54	1564.11	0247.63	1564	10261.74	1563.85
10271.03	1563.81	0271.51	1563.77	10274.06	1563.8	10275.7	1563.82	10276.93	1563.8
10277.21	1563.81	0281.75	1563.81	10283.51	1563.75	10285.39	1563.74	10287	1563.74
10289.14	1563.81	0290.41	1563.78	10291.44	1563.81	0303.53	1563.84	10304.79	1563.84
10306.95	1563.91	0307.38	1563.86	10308.26	1563.87	10309.17	1563.87	10310.02	1563.88
10310.72	1563.9	10311.3	1563.89	10346.1	1563.98	10346.26	1563.98	10346.38	1563.98
10346.49	1564	10346.56	1563.98	10346.62	1563.98	10346.7	1563.98	10346.76	1563.98
10346.83	1564	10346.89	1563.98	10356.86	1564	10360.88	1564.01	10365.95	1564.01
10370.54	1564	10371.05	1564	10371.06	1564	10374.57	1564	10374.61	1563.97
10376.75	1563.97	10382.53	1563.92	10393.87	1563.76	10398.89	1563.7	10403.5	1563.63
10407.79	1563.59	10415.25	1563.51	10416.6	1563.51	0417.67	1563.51	0418.46	1563.53
10419.58	1563.54	10421.02	1563.54	10422.76	1563.54	10425.71	1563.61	0430.07	1563.6
10436.19	1563.68	10442.59	1563.74	10449.04	1563.78	10452.02	1563.81	0452.34	1563.75
10464	1563.79	10475.6	1563.86	10481.88	1563.91	10488.82	1564	10489.21	1563.98
10489.87	1564	10497.62	1564.04	10503.9	1564.06	10508.68	1564.11	0517.32	1564.03
10518.87	1564.01	10520.13	1564	10521.11	1563.98	10524.11	1563.91	0525.42	1563.88
10525.79	1563.87	10526.35	1563.84	10533.75	1563.51	0536.09	1563.41	0541.79	1563.17
10545.02	1563	10546.26	1562.96	10549.6	1562.75	10550.23	1562.81	0550.43	1562.76
10555.97	1562.87	10558.39	1562.87	10563.89	1562.91	10571.52	1562.91	0574.68	1562.85
10580.29	1562.81	10583.32	1562.87	10584.1	1562.89	10584.79	1562.91	0589.78	1563.06
10594.08	1563.18	10595.44	1563.23	10597.46	1563.31	0599.93	1563.41	0601.84	1563.39
10608.9	1563.56	10609.8	1563.61	0610.45	1563.63	10611.54	1563.71	0616.88	1563.78
10619.05	1563.84	10619.41	1563.85	10620.76	1563.93	10622.13	1564	10630.18	1564.35

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10637.89 1564.72 10641.5 1564.8610642.27 1564.8910645.84    156510647.75 1565.14
10648.81 1565.1610650.62 1565.2210651.57 1565.2610661.19  1565.610662.18 1565.63
10662.77 1565.6510663.41 1565.6710671.25    156610678.17  1566.210680.72  1566.3
 10692.8 1566.6810700.29 1566.9310713.24 1567.3110722.84  1567.710730.87    1568
10742.89 1568.1310759.86 1568.3210774.36 1568.4910786.73  1568.610807.48 1568.84
10832.92 1569.0410852.34 1569.1910862.86 1569.2710871.64  1569.310875.58 1569.35
10879.39 1569.3610885.79 1569.3710887.32 1569.37   10890  1569.310891.67 1569.35
10903.38 1569.4410918.99 1569.56 10951.8 1569.9310957.06    1570

Manning's n Values         num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9471.11     .06 9870.26     .06 9977.22    .04510042.54    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9977.2210042.54            498.06  502.15  512.37             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.99

INPUT
Description:
Station Elevation Data    num=     406
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9448.59    1566 9453.98 1565.88 9454.53 1565.87  9455.1 1565.86 9456.01 1565.85
 9467.29  1565.6  9468.3  1565.6 9469.17 1565.59 9469.96 1565.58 9470.64 1565.56
 9478.78  1565.4 9479.81 1565.34 9482.18 1565.18 9483.68 1565.13 9519.17 1564.62
 9524.64  1564.5 9538.66 1564.37 9577.19 1564.02 9578.51    1564 9580.53  1563.9
 9580.82  1563.9 9581.11 1563.88 9582.04 1563.86 9593.11 1563.35 9595.86  1563.3
  9598.7  1563.3  9601.9 1563.19    9606    1563 9616.27 1562.75 9618.88 1562.57
 9618.92  1562.6  9620.8 1562.47 9623.24 1562.53 9623.69 1562.54 9626.37 1562.58
 9628.96  1562.6 9630.96 1562.71 9631.57 1562.75 9638.58 1562.68 9645.27 1563.48
 9646.48  1563.5 9647.52 1563.37 9649.76  1563.3 9649.99 1563.29 9650.35 1563.29
 9650.88  1563.3 9651.28 1563.27 9651.72 1563.25 9655.43 1563.06 9656.91 1563.06
 9657.55  1563.1  9660.5 1562.79 9670.01 1562.59 9672.34 1562.49 9674.38 1562.41
  9675.9  1562.4 9676.79 1562.52 9677.43 1562.54 9679.39 1562.52 9681.06  1562.5
 9681.39  1562.5 9695.31 1562.39 9701.21 1562.31 9706.55  1562.2 9713.19    1562
 9720.82  1561.8 9723.38 1561.77 9725.14 1561.76 9728.02 1561.73  9728.9 1561.73
  9730.1  1561.7 9738.71  1561.9 9744.25    1562 9746.06    1562 9746.36    1562
    9747    1562 9748.04 1561.99 9749.41 1561.97 9750.67 1561.95 9752.83 1561.91
 9756.43  1561.9 9763.71 1561.81 9765.64 1561.78  9771.9 1561.73 9772.89 1561.74
 9776.23  1561.8 9780.23 1561.86 9782.12 1561.88 9783.21 1561.91 9785.43 1561.96
 9786.12    1562 9786.93    1562 9790.04  1562.1 9802.49 1562.27 9805.72 1562.29
 9817.69  1562.4 9819.22 1562.37 9820.74  1562.4 9822.49 1562.41 9832.89 1562.71
 9835.95  1562.7 9838.67 1562.67 9913.07  1563.5  9913.8 1563.51 9914.35 1563.51
 9914.35  1563.5 9914.54 1563.44  9918.6    1562 9923.31 1560.37 9923.41 1560.32
 9923.83  1560.2 9924.29    1560 9925.63 1559.53 9929.96    1558 9933.13  1556.9
 9934.86  1556.3 9951.68 1557.38 9955.66 1557.64  9961.5    1558 9965.93 1558.31
 9969.51  1558.5 9972.38 1558.38 9979.63    1558 9981.27 1557.91 9982.04 1557.87
 9983.18  1557.8 9985.46 1557.72 9993.63 1557.35   10000    155710005.98 1556.79
10006.97 1556.910014.98    1558 10021.9 1558.9110025.95 1559.4910028.35 1559.53
10031.19 1559.6 10050.3    156010061.78    156010064.49    156010069.01    1560
 10074.7    156010079.14    156010083.46    156010088.93    156010093.71    1560
10095.31    156010096.92 1560.0710109.56 1560.0910120.38 1560.2310135.47    1560
10141.53    156010148.98 1559.9410161.89 1559.8710173.68 1559.8310181.72 1559.83
10187.91 1559.810193.37 1559.8710193.93 1559.8810194.61 1559.8810195.13  1559.9
10195.65 1559.910200.91 1559.9410201.33 1559.9610202.04 1559.9910207.61 1559.99
10208.34    156010210.17 1560.0110211.64    156010219.25    156010219.62 1559.99
10220.28    156010222.03  1559.910222.65  1559.910223.16 1559.8610228.51 1559.12
10236.47    155810236.79 1557.9510236.87 1557.9410237.18  1557.910237.82  1557.8
10240.01  1557.5 10242.2 1557.1810242.89 1557.2910244.16 1557.5810247.86    1558
10251.39 1558.510251.95 1558.5610253.37  1558.810254.38 1558.9410256.07  1559.1
10258.88 1559.410260.34 1559.5110262.89 1559.7110263.21 1559.7210264.57 1559.74
10266.49 1559.810266.85 1559.85 10268.2 1559.9210269.84 1559.9610272.87 1559.96
10273.87    156010275.72 1559.9510276.42 1559.9510278.47 1559.8610281.25 1559.74
10283.68 1559.610288.81 1558.9110291.69 1558.5710292.36 1558.4810295.72    1558
10298.07 1557.610299.07 1557.4910299.25 1557.4610302.27 1557.7810303.12 1557.84
10306.16 1557.910306.74 1557.9310307.85 1557.9310308.45 1557.9110309.36 1557.88
10315.63 1557.710316.62 1557.6610317.71 1557.6210318.63 1557.5810318.98 1557.63
 10319.8 1557.810320.76    155810325.69 1558.6710329.04 1559.2610330.74  1559.6
   10331 1559.710332.95    156010336.05 1560.44 10338.5 1560.8310342.46 1560.87
 10352.2 1561.110359.09 1561.2310365.29 1561.33 10369.5 1561.42 10373.9  1561.5
10375.79 1561.510377.95 1561.5510379.85 1561.5810390.03 1561.8910390.73  1561.9
10392.35 1561.9 10392.7 1561.9410394.41    156210396.25 1562.0210403.44 1562.06
10425.29 1562.2 10426.5  1562.210427.66  1562.210429.63  1562.210435.57 1562.21
10437.68 1562.210439.29 1562.2510442.99 1562.2510444.42 1562.2710445.84 1562.31
10447.55 1562.310450.06 1562.3710452.44 1562.3710455.74 1562.3610461.12 1562.38
 10462.9 1562.410464.41 1562.3310465.58 1562.3310466.72 1562.3310467.64 1562.33
10475.18 1562.310477.99 1562.3910479.65 1562.4310481.42 1562.4510486.28  1562.5
   10488 1562.510490.82 1562.5810492.22  1562.6 10493.7 1562.5910495.09 1562.61
10496.37 1562.610497.67 1562.6310499.87 1562.6510507.53 1562.6510508.81 1562.65
 10510.5 1562.710512.89 1562.6610516.07 1562.6610519.22 1562.6610521.73 1562.63
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 10525.6  1562.610527.55 1562.6510529.23 1562.7110532.28 1562.7810533.93 1562.81
10535.41  1562.810536.48 1562.8310537.54 1562.8410541.55 1562.8510542.97 1562.85
10544.46  1562.910546.16 1562.86 10587.1 1563.0410588.67 1563.0510591.41 1563.05
10592.97  1563.1 10594.7 1563.0610596.23 1563.07 10597.7 1563.0710598.94 1563.05
10599.74  1563.110600.39 1563.0510600.77 1563.0610601.18 1563.0610602.91 1563.07
10604.04  1563.110606.63 1562.9910607.84 1562.9810608.51 1562.9810609.21 1562.98
10610.08    156310610.62 1562.9810611.17 1562.9810611.69 1562.9810612.53 1562.98
10613.14    156310637.89 1562.7110642.34 1562.6410649.49 1562.5210652.43 1562.46
10666.35  1562.210679.78    1562 10684.1 1561.7410684.61 1561.7210685.71 1561.65
10688.38  1561.510692.62 1561.16 10694.6 1560.6110695.81 1560.2610696.12 1560.18
 10696.8    156010703.99 1558.0210704.07    155810704.09 1557.9910704.16    1558
10704.99 1557.7510709.18 1557.7710716.48 1557.8710716.86 1557.9510717.27    1558
10724.17 1559.3510727.53    156010736.75 1561.7610737.91    156210738.19  1562.1
10738.31 1562.0810738.55 1562.1210740.12  1562.410743.81 1563.1110750.01  1563.2
10761.58 1563.4610765.59 1563.5510768.04 1563.6210772.18 1563.6910775.26  1563.8
10785.53    156410790.33 1564.1510792.32 1564.1710794.75 1564.1710806.67    1564
10808.36    156410813.09 1563.7910819.48 1563.5510832.35 1563.1110837.18  1563.3
10837.61 1563.3210838.18 1563.3310838.93 1563.3210839.79 1563.2410841.05  1563.3
10842.99 1563.3710848.28 1562.5710849.66 1562.38 10852.5    156210852.85  1561.9
10852.99 1561.9310855.72 1561.8210857.04 1561.7610862.96 1561.47 10865.1  1561.4
10867.55 1561.2710870.31 1561.1110871.59 1561.0610873.86 1560.9410876.28  1560.8
10879.11 1560.7510882.52 1560.6110887.52 1561.0410890.49 1561.2810893.79  1561.5
10896.54 1561.73   10897 1561.7710897.32 1561.8110899.72    156210914.82  1563.2
10924.52    1564

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9448.59     .06  9913.8    .04510025.95    .05510222.03    .05510272.87    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9913.810025.95           403.84  411.33  415.61              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 9448.59  9912.1    1564

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.90

INPUT
Description:
Station Elevation Data    num=     245
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9558.92  1561.8 9559.07 1561.82 9565.85  1561.6  9569.6 1561.49 9618.83    1560
 9627.04  1559.7 9628.01 1559.71 9629.15 1559.65 9630.14 1559.59  9630.8 1559.56
 9632.34  1559.6 9635.15  1559.6 9638.38 1559.58 9638.69 1559.58 9638.71 1559.58
 9641.17  1559.6 9641.41 1559.55 9643.46 1559.52 9643.97 1559.51 9646.53 1559.49
 9646.89  1559.5  9649.4 1559.47 9650.44 1559.47 9653.09 1559.45 9654.07 1559.44
  9655.4  1559.4 9657.56 1559.41 9658.99  1559.4 9660.04 1559.37 9661.27 1559.37
 9661.89  1559.4 9662.36 1559.35 9662.74 1559.33  9663.1 1559.32 9670.76 1559.52
 9671.77  1559.5  9672.6 1559.54 9675.28  1559.5 9676.07  1559.5 9676.87 1559.48
 9678.16  1559.5 9679.18 1559.43 9680.15 1559.44 9746.34 1558.79 9752.35 1558.71
 9761.31  1558.6 9763.95 1558.55 9777.01 1558.36 9779.38 1558.38 9779.57 1558.39
 9793.04  1558.5 9794.93 1558.55 9796.76 1558.57    9810 1558.72 9813.41 1558.77
 9818.57  1558.8  9827.5 1558.92 9832.18 1558.96 9835.69 1558.98  9838.2 1559.01
 9849.57  1559.1 9858.44 1559.23  9859.6 1559.25 9860.93 1559.27 9867.53 1559.35
 9872.97  1559.4  9874.1 1559.34 9877.75 1559.09 9885.02 1558.52 9886.98  1558.5
 9910.67  1558.3 9923.84 1558.14 9927.08 1558.12 9937.93    1558 9940.59 1557.93
 9959.33  1557.4 9967.59 1557.26 9967.92 1557.12 9968.37 1556.91 9970.35    1556
 9973.75  1554.5 9975.11    1554 9977.98 1552.74 9979.79    1552 9980.15 1551.84
 9980.23  1551.8 9980.39 1551.69 9980.81 1551.47 9981.84 1551.03   10000 1550.97
10000.42    155110003.31 1550.9510003.63 1551.0210005.99 1551.6310007.57    1552
10010.09  1552.6 10016.3    155410018.21 1554.4310019.24 1554.6510022.95 1555.52
10033.34  1555.6 10042.5  1555.610047.39 1555.62 10047.5 1555.6210047.92  1555.6
10051.39  1555.710055.55    155610071.33 1556.6210078.83 1556.9710079.72 1557.02
10080.68  1557.1 10083.2 1557.1310084.89 1557.1810087.26 1557.2810089.98 1557.38
 10090.6  1557.410091.07 1557.4110091.22 1557.4110092.38 1557.4410101.38 1557.63
10101.79  1557.610115.83 1557.9710116.96    155810117.07    155810124.84    1558
10125.39    155810125.83    155810126.25    155810130.12    1558 10142.4 1557.88
10147.09  1557.9   10155 1557.9910155.28    155810194.64 1558.4710220.04  1558.8
10232.63    155910245.78 1559.1310265.98 1559.4210283.12 1559.6210305.55  1559.9
10314.14    156010314.79 1559.9810315.42 1559.9810322.06    156010327.04    1560
10343.32    156010358.37    1560 10368.4    156010373.95    156010374.45    1560
10377.91    156010383.05 1559.9910387.11 1559.9910391.19 1559.9910395.32 1559.99
10397.82    156010399.33 1559.97 10399.8 1559.96 10455.8 1558.9210458.82 1558.89
10463.96  1558.710467.96 1558.5310468.94 1558.2410469.26 1558.1710469.42 1558.15
10470.08    155810471.65 1557.5410476.97    155610477.54 1555.8410483.38 1554.29
10483.87  1554.210484.01 1554.1510497.21 1554.13 10499.7 1554.78 10509.3    1556
10510.92  1556.210511.18 1556.2410511.41 1556.25   10512 1556.2910512.33 1556.31
 10514.1  1556.510520.95 1557.1910523.07 1557.3710524.11  1557.510524.88  1557.6
10528.59  1557.710530.98 1557.8110531.21 1557.8310533.77    155810534.52 1558.04
10534.79  1558.1 10536.1 1558.2610538.78 1558.5210539.89 1558.6410541.57 1558.79
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10542.32  1558.810546.18 1559.0410550.35 1559.2310553.18 1559.3810555.71 1559.54
10557.59  1559.710559.52 1559.7310561.77    156010563.15 1560.0910563.77 1560.09
10564.74  1560.110565.83 1560.0910566.22  1560.110566.53 1560.1110566.77 1560.13
10566.98  1560.210567.21 1560.18 10567.5  1560.210567.74 1560.2210571.29 1560.45
10575.57  1560.6 10577.9 1560.7410579.28 1560.7910580.19 1560.8110580.85 1560.82
   10582  1560.810583.66 1560.82   10588 1560.8110591.78 1560.8110593.74 1560.81
10594.01  1560.810594.21  1560.810594.63 1560.7910598.02 1560.8510599.93 1560.87
10601.42  1560.910602.67 1560.9510604.94 1561.0210609.72 1561.0610610.58 1561.07
10612.67  1561.110614.21 1561.0610657.31 1561.3810661.89 1561.44 10674.5 1561.62
10676.21  1561.610691.31  1561.810698.92 1561.97 10712.7 1561.98   10723    1562

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9558.92     .06 9872.97     .06 9967.59    .04510022.95    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9967.5910022.95           350.25  330.65  384.15             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.84

INPUT
Description:
Station Elevation Data    num=     184
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9334.62    1560 9358.87 1559.74 9362.18  1559.7 9371.86  1559.6 9376.17 1559.54
 9381.17  1559.5 9394.12 1559.37  9408.3 1559.18 9422.86 1558.99 9428.39 1558.93
 9432.87  1558.9 9436.68 1558.87 9441.24 1558.84 9446.36 1558.81 9451.84 1558.77
 9457.18  1558.7 9462.47 1558.71 9468.63 1558.68 9473.76 1558.66 9478.75 1558.63
 9482.54  1558.6 9487.25 1558.59 9493.18 1558.54 9500.78 1558.45 9508.45 1558.36
 9516.18  1558.3 9523.95 1558.14 9524.89 1558.14 9533.38 1558.04 9533.56 1558.04
 9533.66    1558 9533.73 1558.04 9533.78 1558.04  9533.9 1558.04 9533.96 1558.04
 9538.17    1558 9544.32 1557.95 9555.52 1557.89 9567.29  1557.8 9573.34  1557.7
  9587.2  1557.6 9640.63 1556.34 9677.89 1556.24  9680.1 1556.23 9684.49 1556.22
 9695.56  1556.2 9698.05 1556.22 9699.41 1556.23 9700.38 1556.24 9763.13 1556.23
 9765.99  1556.2 9815.91 1556.33 9822.55 1556.34 9843.43 1556.45 9850.76 1556.57
 9892.17  1556.9 9894.08 1556.92 9894.75 1556.92 9895.97 1556.92  9900.3 1556.91
 9902.58  1556.9 9904.71 1556.88 9909.36 1556.81 9910.17  1556.8 9910.59  1556.8
 9911.26  1556.8 9912.65 1556.78 9913.61 1556.76 9915.86 1556.73  9916.5 1556.73
 9921.07  1556.7 9933.18 1556.48    9934 1556.45 9934.69 1556.42 9937.16 1556.38
 9953.28  1556.3 9955.91 1556.21 9964.68 1556.07 9967.34 1556.02 9967.77    1556
 9975.82  1555.6 9978.53 1555.45 9981.46 1554.23 9981.94    1554  9982.5 1553.75
 9983.57  1553.3 9985.77  1552.3 9986.59    1552 9988.97 1551.05 9991.39    1550
 9991.89  1549.8 9992.46  1549.6 9992.63 1549.53 9997.48 1549.42   10000 1549.25
10009.11  1549.110010.45 1549.3810012.68 1549.7710013.95    155010022.21 1551.49
 10024.6    155210026.97  1552.510034.02    155410035.07 1554.29 10035.4 1554.33
10036.46  1554.310042.41    155410045.82 1553.8710046.07 1553.8510048.32 1553.91
10050.19    155410088.99 1555.4710096.89 1555.7610099.95 1555.8710101.06 1555.91
 10101.4  1555.910103.34    1556 10104.4 1556.0210115.28 1556.2110136.51 1556.55
10177.94  1556.610206.21 1556.7410207.76 1556.7410209.64  1556.710211.61 1556.63
 10214.8  1556.610224.47 1556.4210238.33 1556.2110243.48 1556.1410252.43    1556
10254.04  1555.910256.74 1555.83 10256.9 1555.8210257.69 1555.5710262.09 1554.19
10262.69    155410263.38 1553.7910269.07    155210271.56 1551.2410271.92 1551.13
10275.12  1550.910280.21 1550.4610285.04 1551.7410285.69 1551.9210285.82 1551.95
 10285.9    155210286.01    155210286.09 1552.0210293.53    155410293.96 1554.12
10294.14  1554.210294.86 1554.3410300.94    155610302.04 1556.17 10302.3 1556.21
10308.24    155610309.68    155610312.55 1555.8910315.16 1555.82   10318 1555.75
10319.77  1555.710322.51 1555.6610328.48  1555.510338.66 1555.2710339.79 1555.37
10347.48    155610357.45 1556.7810368.23 1557.6810368.43  1557.710368.46  1557.7
 10368.5  1557.710371.97 1557.8710376.45    155810377.37 1558.0210377.49 1558.03
10381.36  1558.210383.06 1558.2210386.39 1558.36 10424.1 1559.5410425.13 1559.57
10425.87  1559.6 10440.2    156010453.36 1560.1410454.56 1560.15

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9334.62     .06 9892.17     .06 9978.53    .045 10035.4    .05510256.74    .036
 10302.3     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9978.53 10035.4           217.35  381.23  448.24             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.77

INPUT
Description:
Station Elevation Data    num=     106
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9257.17    1558 9457.17  1555.7    9468  1555.5 9486.99 1555.32 9495.81 1555.17
  9504.6  1555.1 9514.93 1555.11 9518.77  1555.1 9522.54 1554.62  9527.8    1554
 9528.88 1553.89 9534.29 1553.23 9539.91  1553.6 9542.68    1554 9546.02 1554.26
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 9548.03 1554.43 9549.32  1554.6 9551.98 1554.72 9560.28 1554.75 9570.31 1554.83
 9581.06 1554.78 9594.35 1554.72 9609.58 1554.61 9618.98 1554.65 9629.67 1554.72
 9650.43 1554.63 9664.46 1554.56 9677.14 1554.46 9702.14 1554.43 9712.59  1554.4
 9732.91  1554.7 9747.09 1554.78 9759.64 1554.77 9771.16 1554.69 9780.79  1554.6
 9794.12 1554.49 9804.13  1554.4  9815.5  1554.3 9835.15 1554.09 9843.48    1554
  9852.2 1553.92 9861.74 1553.86 9890.55 1553.66 9900.06 1553.86 9911.62  1554.1
 9912.15 1554.08 9912.84    1554 9914.24 1553.83 9917.39  1553.4 9921.37  1552.8
 9928.72 1552.63 9936.19 1552.42 9940.35  1552.3 9944.96 1552.17 9945.19  1552.1
 9945.56 1552.02 9945.72    1552 9953.69 1550.05 9953.89    1550 9954.14  1549.9
 9961.63    1548 9963.06 1547.73  9963.4 1547.68  9973.7 1546.83 9983.65    1546
 9985.12 1545.88 9986.32 1545.79 9988.82 1545.58 9989.04 1545.67 9989.91    1546
 9992.33 1546.89 9995.37    1548 9996.91 1548.5810000.42    155010002.79  1550.8
10006.33    155210008.23 1552.6910011.94    155410012.18 1554.0910013.61  1554.6
10014.28 1554.8510018.54 1554.8410066.23 1554.8810086.76 1554.8810097.53  1554.8
10130.49    155510135.02 1555.0110172.88  1554.310196.21    155410197.82  1553.9
10200.91 1553.8410201.68 1553.8110202.94  1553.710210.03 1553.4510210.94 1553.42
10212.24 1553.4710220.09 1553.8110225.74    155410231.42 1554.1410236.29 1554.28
10295.23    155610361.03 1556.8210380.84    155710387.15 1557.1310397.48 1557.55
10403.36 1557.84

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9257.17     .05 9570.31     .05 9911.62     .0410014.28     .0510135.02     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9911.6210014.28           210.81  279.94  312.97             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.72

INPUT
Description:
Station Elevation Data     num=      79
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9325.95    1556 9336.12 1555.88 9407.34 1554.88 9434.88  1554.2  9460.6 1553.93
  9470.2  1554.1 9481.25  1554.1    9490 1554.11  9513.1    1554 9517.84 1553.96
 9526.45  1553.9 9535.25 1553.86 9544.28 1553.81 9617.55 1553.64 9635.34 1553.57
 9650.94  1553.5 9664.21 1553.45 9674.85 1553.41 9683.75 1553.38 9691.46 1553.35
 9700.51  1553.3 9712.81  1553.3 9721.25  1553.2 9731.03 1553.23  9742.2  1553.2
 9751.44 1553.24 9760.81 1553.25 9846.78  1552.4 9914.09 1552.05 9922.46    1552
 9947.62 1551.22  9961.5 1550.82 9961.73  1550.7 9962.46 1550.43 9963.76    1550
 9968.43 1548.69 9970.82    1548 9975.86  1546.5 9977.77    1546 9979.96 1545.34
 9980.92 1545.06 9984.17 1544.97 9989.21  1544.8  9995.9 1544.7110002.51 1544.57
10004.68 1545.2710005.68 1545.6210006.89    154610012.21 1547.7210013.12    1548
10014.51 1548.3710020.08    155010020.68  1550.210025.84 1551.1310027.38 1551.26
10028.17 1551.3210030.35  1551.410041.02 1551.7710052.02  1551.910059.79    1552
10069.61 1552.0810079.13 1552.1310113.64 1552.7610162.63  1553.810171.74    1554
10172.37    155410184.05 1554.0610194.69 1554.09 10194.9  1554.110203.92 1554.12
10218.98  1554.410315.49 1555.3410324.47  1555.310339.11  1555.310350.57 1555.44
10359.19  1555.510372.16 1555.6910379.93 1555.7810390.38  1555.9

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9325.95     .05 9922.46     .0410025.84     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9922.4610025.84           293.43  329.52  369.98             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.65

INPUT
Description:
Station Elevation Data     num=      86
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9296.38    1556 9328.59 1555.62 9354.05 1555.19    9382 1554.79 9403.83  1554.3
 9423.66    1554 9437.47 1553.54 9450.66 1553.08 9565.97  1552.1 9586.66 1552.05
 9597.46    1552 9625.98 1551.84 9644.23  1551.7 9653.33 1551.65  9681.4 1551.68
 9687.28  1551.7 9696.82  1551.7 9738.78 1551.68 9752.03 1551.61 9760.06 1551.58
 9767.95  1551.5 9782.93 1551.48 9789.44 1551.45 9798.97  1551.4 9809.77  1551.4
 9819.47 1551.41 9826.53 1551.44 9836.41 1551.59 9841.87 1551.61 9943.26 1550.54
  9945.1 1550.51 9947.06 1550.33 9950.49    1550 9951.03 1549.95 9951.28 1549.93
 9951.85 1549.88 9954.53 1549.63 9955.32  1549.4 9961.08    1548  9964.1 1547.32
 9969.44    1546  9972.1  1545.3 9976.78    1544 9979.73 1543.24 9980.67 1542.99
 9991.85 1543.1710003.19 1543.3210003.33  1543.310004.25 1543.6210005.57    1544
10008.75  1545.110011.58    154610016.92  1547.910017.13    154810017.55 1548.15
10023.27    1550 10024.1 1550.3510024.24  1550.410040.84 1550.3410063.98 1550.37
10076.59  1550.410098.09 1550.5810117.89  1550.710137.87 1550.7810158.85 1550.62
10185.48  1550.410191.89 1550.3510223.34 1550.2210245.05 1550.54 10260.4  1550.9
10269.76  1551.110314.77    155210333.57 1552.4210354.57 1552.8110370.47 1553.17
10392.43 1553.0410398.61 1552.94 10408.5 1552.9710422.31 1552.9910431.36 1552.98
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10441.83    155310471.78 1553.3410481.88 1553.4610492.39  1553.6 10503.1  1553.7
10508.62  1553.7

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9296.38     .05 9943.26     .0410024.24     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9943.2610024.24           501.27  499.86  500.22             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.56

INPUT
Description:
Station Elevation Data    num=     195
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9560.1    1552 9586.36  1551.3 9611.39 1550.66 9637.29    1550 9683.16 1548.82
 9716.76    1548 9723.08 1547.87 9729.11 1547.78 9730.55 1547.75  9732.8 1547.72
 9743.77  1547.8 9746.14 1547.77 9753.92 1547.79 9762.09 1547.81 9768.18 1547.78
 9770.81  1547.8 9777.89 1547.79  9777.9 1547.79 9782.32 1547.86 9784.86 1547.86
 9786.69  1547.9 9788.12 1547.88 9789.83 1547.91 9798.42 1547.96 9799.62 1547.96
 9800.92    1548 9808.02    1548 9808.96    1548 9812.98 1548.01 9816.19 1548.02
  9818.6    1548 9823.38 1548.06 9824.86 1548.07 9830.32 1548.07  9840.5 1548.06
 9864.18    1548 9864.86    1548  9865.3 1547.99 9869.55 1547.95 9885.75 1547.86
 9886.51  1547.8 9888.82 1547.78 9893.18 1547.65 9898.54 1547.52 9906.27  1547.2
 9912.68  1546.9 9914.56 1546.89 9914.63 1546.89 9914.69 1546.89 9916.65 1546.94
 9922.32  1547.1 9927.55 1547.29 9936.95 1547.45 9941.47 1547.41 9941.89 1547.41
  9942.9  1547.4 9944.11 1547.42 9946.36 1547.42 9950.78 1547.44 9951.72 1547.45
  9953.7  1547.4 9960.45  1547.9 9968.04 1548.41 9968.65  1548.2 9974.92    1546
 9977.99  1544.9  9980.7    1544 9985.25 1542.49 9985.99  1542.2 9989.19 1542.08
 9990.92    1542 9991.48 1541.99 9995.66    1542   10000 1541.9810011.14 1541.98
10012.42    154210014.13    154210015.75    1542 10016.7 1542.0110020.97 1542.06
10022.85  1542.710026.47    1544 10029.7 1545.1410032.23    154610034.48 1546.86
10037.68    154810039.01 1547.8810041.16 1547.6910042.34 1547.5410043.34 1547.44
10044.09  1547.410044.72 1547.2810045.32 1547.2110045.88 1547.2610046.17 1547.29
10046.42  1547.310086.31 1547.8910087.21 1547.9110096.81    154810098.27 1548.05
10098.68    154810107.55    154810154.66  1547.110164.21 1546.91 10203.9 1546.62
10204.79  1546.610205.72 1546.55 10206.4 1546.5310207.68 1546.5710209.11 1546.61
10210.88  1546.710213.91 1546.71 10219.3 1546.7910225.73 1546.8210235.17 1546.93
10235.85  1546.910248.14 1547.6510253.86 1547.9110254.43 1547.9410256.26    1548
10257.89    154810260.47 1548.0710262.19  1548.110269.98 1548.1910273.64 1548.26
10276.65  1548.310283.82 1548.4610291.15 1548.5910291.47 1548.61 10292.4 1548.61
10298.67  1548.810300.52 1548.8210300.81 1548.8310301.25 1548.8310301.62 1548.83
10304.27  1548.8   10307 1548.7710309.85 1548.7510311.47 1548.7710314.25 1548.76
10316.68  1548.710319.01 1548.71 10320.2 1548.7210321.35 1548.7210322.43 1548.72
10325.24  1548.710326.56 1548.6910330.45 1548.6810331.66 1548.6310336.95 1548.61
 10338.3  1548.610339.66 1548.5710342.14 1548.6310349.68 1548.5910350.99  1548.6
10375.82  1548.710382.22 1548.6410384.72 1548.6410389.72 1548.6310393.15 1548.66
10396.85  1548.710405.26 1548.6810406.49 1548.47 10409.3 1548.4410411.93 1548.44
10414.92  1548.5 10419.1 1548.5510426.06 1548.6910434.76 1548.7410436.79 1548.78
10449.77  1548.910450.42 1548.8910452.76 1548.9210472.08  1548.910472.94 1548.89
 10473.4  1548.910474.91 1548.86 10476.3 1548.8710478.18 1548.8310480.93 1548.81
10484.69  1548.810491.75 1548.7810494.47 1548.8810496.17 1548.9510497.95 1548.98
10501.85    154910504.83 1548.9810509.58 1549.1810512.99 1549.2810514.78 1549.32
10517.37  1549.510524.96 1549.6510534.51    155010549.85  1550.710577.96 1551.89

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
  9560.1     .05 9869.55     .05 9968.04     .0410037.68     .0510283.82     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9968.0410037.68           407.49  424.91  417.75             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.48

INPUT
Description:
Station Elevation Data    num=      79
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9713.54  1548.2 9724.42    1548 9791.21  1546.5 9809.79 1546.08 9814.36 1545.98
 9825.84 1545.96 9826.04 1545.95 9833.31 1545.65 9836.95  1545.2 9845.75 1544.35
 9850.75  1543.8 9850.95  1543.7 9852.22    1544 9855.43 1544.38 9859.23  1544.9
 9863.84 1545.59 9873.98 1545.36 9877.79 1545.27 9913.56  1544.5 9922.12 1544.83
 9945.21 1545.14 9957.24  1545.3 9969.57 1545.48 9970.88  1545.5 9974.75 1544.14
 9980.74    1542 9986.17    1540 9986.88 1539.74 9987.99 1539.46 9993.39 1539.45
10016.72 1539.4310017.58 1539.6710024.57  1541.610026.04    154210034.03 1544.23
10045.11 1546.0410061.71    154610064.14 1545.9910077.21 1545.9810088.39 1545.98
10102.13    154610104.88    154610120.91 1546.0210131.25    154610139.09 1546.04
10168.24 1546.0310176.53 1546.0210193.29    154610201.86    1546 10255.7 1545.19
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10266.73 1545.0310278.24  1544.810294.68 1544.6710324.84 1544.14 10337.8 1544.11
10355.65 1544.0510382.28 1543.8410395.44 1543.9610396.77    154410419.79 1544.07
10433.64  1544.110453.27 1544.5610477.01 1544.7610501.39 1545.1610515.29 1545.36
10550.48    154610574.72 1546.5910604.92 1547.0110619.78 1547.2110630.01 1547.43
10637.54  1547.410654.84 1547.6910680.87    154810694.05  1548.210713.07  1548.3
 10736.9  1549.210754.08  1549.410773.65  1549.710773.97  1549.7

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9713.54     .05 9863.84     .05 9970.88     .0410045.11     .0510201.86     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9970.8810045.11           515.83   509.1  474.96              .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.38

INPUT
Description:
Station Elevation Data    num=     325
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9629.76  1549.9 9634.63 1549.63 9641.45 1549.27 9642.73 1549.11 9642.77  1549.1
  9642.8  1549.1 9642.83 1549.08 9642.88 1549.07    9643 1549.05 9643.11 1549.03
 9643.22    1549 9643.34 1548.99 9643.48 1548.97 9643.64 1548.96 9643.82 1548.94
 9644.05  1548.9 9644.29 1548.89 9644.56 1548.85 9645.36 1548.73 9646.29 1548.64
 9649.94    1548 9650.11 1547.99 9650.33 1547.96 9650.73 1547.87 9651.41 1547.76
 9656.35  1547.6 9658.02 1547.56 9663.09 1547.45 9667.59 1547.35 9671.82 1547.24
  9677.8  1547.1 9680.28 1547.03 9684.94 1546.84 9690.96  1546.7  9709.2 1546.25
 9710.85  1546.1 9711.85 1546.13 9713.26 1546.05 9715.68 1546.12 9748.15 1546.42
 9748.87  1546.4 9749.89 1546.39 9751.85 1546.41  9754.1 1546.43 9755.92 1546.44
 9757.59  1546.4 9760.61  1546.5 9762.42 1546.53 9763.89 1546.56 9767.72 1546.53
 9770.18  1546.6 9773.03 1546.62 9778.45 1546.71 9780.68 1546.68 9788.86 1546.64
 9795.96  1546.7 9796.69 1546.66 9797.46 1546.49 9798.02 1546.35  9798.4 1546.24
 9798.72  1546.2 9798.99 1546.16 9799.18 1546.14 9799.37 1546.09 9799.57    1546
  9801.9  1545.6 9802.55 1545.49 9807.89 1545.26 9810.35 1545.21  9814.5 1545.07
 9818.48  1544.9 9822.83 1544.72 9822.97 1544.71 9823.32 1544.69 9826.26 1544.95
 9829.44  1545.3 9831.94 1545.54 9833.19 1545.68 9836.34 1545.96 9836.64 1545.94
 9838.86  1545.8 9839.44 1545.74 9841.65 1545.48 9842.62 1545.48 9844.96 1545.37
 9846.54  1545.4 9847.17 1545.38  9847.7 1545.39 9848.81 1545.32 9849.76 1545.32
 9852.03  1545.3 9852.57 1545.26 9854.21 1545.24 9856.05 1545.21 9856.66 1545.21
 9858.41  1545.2 9858.87 1545.15  9859.2 1545.15 9861.77    1545 9862.14    1545
  9863.9    1545 9864.17 1544.96 9866.61 1544.93 9866.85 1544.93 9869.64  1544.9
 9869.79  1544.9 9872.02 1544.77 9872.13 1544.77 9874.48 1544.69 9874.58 1544.69
 9876.93  1544.7 9877.12 1544.65 9878.99 1544.59 9880.85 1544.57 9880.98 1544.56
 9882.98  1544.5 9883.88 1544.48 9887.09  1544.5 9889.49 1544.54 9892.45 1544.55
 9894.94  1544.6 9896.62  1544.5 9898.05 1544.47 9899.51 1544.51 9901.17 1544.58
 9903.09  1544.6 9903.29 1544.57 9903.34 1544.57 9903.64 1544.56 9907.27 1544.47
 9919.81    1544 9923.46 1543.89 9927.17 1543.85 9928.07 1543.84  9928.9 1543.84
 9929.41  1543.8 9930.35 1543.82 9934.01 1543.75 9940.03  1543.6 9951.82 1543.31
 9980.15  1542.6 9980.18 1542.61  9981.7    1542 9983.84 1540.92 9984.47 1540.58
 9984.58  1540.5 9984.67 1540.39 9985.56    1540 9987.88  1538.9 9989.92    1538
 9991.29  1537.3 9992.49 1536.67   10000    153710006.31 1537.16 10022.5 1537.64
10022.62  1537.710023.38 1537.8110024.51    153810034.01 1539.9210034.38    1540
10034.72  1540.110036.75 1540.57 10043.7    1542   10044 1542.0810044.26 1542.14
10044.55  1542.110045.86 1542.1510048.96 1542.04 10049.4 1542.0510049.73 1542.05
10049.91    1542 10050.2 1542.0610052.38    154210084.04 1542.1710198.92 1542.45
10199.99  1542.410203.43 1542.4510209.48 1542.4610214.86 1542.4710219.78 1542.48
10228.22  1542.510236.11  1542.510238.47  1542.510240.86  1542.5   10243  1542.5
10244.83  1542.510246.28 1542.5210247.69 1542.5310249.11 1542.54 10252.6 1542.54
10253.65  1542.510258.11 1542.5410260.09 1542.53 10261.4 1542.5210262.03 1542.51
10264.77  1542.510268.24 1542.4810269.89 1542.4710277.62 1542.4410284.56 1542.41
10290.28  1542.410294.29 1542.3510300.34 1542.3110309.18 1542.2510322.18 1542.17
10339.91  1542.110355.66    154210357.41    154210364.27 1541.9910370.28 1541.99
10376.01    154210381.94 1541.9910386.99    154210389.55    154210391.69 1542.01
10402.51  1542.1 10410.8  1542.110420.47 1542.1410429.02 1542.1710436.86 1542.18
10444.28  1542.210450.01 1542.1910454.25 1542.1810465.52 1542.1110474.14 1542.07
10487.48    154210490.36    154210506.07 1541.9210506.45 1541.9110538.18 1541.75
10538.66  1541.810540.21 1541.7510541.14 1541.7510542.15 1541.7510543.29 1541.74
10544.57  1541.710545.91  1541.710547.37 1541.6710548.78 1541.6610569.24 1541.55
10570.68  1541.510572.61 1541.4910577.97  1541.410582.11 1541.3310606.11 1541.17
10609.62  1541.110613.61 1540.9910618.59 1540.9110622.38 1540.8710627.38  1540.8
10633.72  1540.710634.47 1540.6810639.31 1540.57 10697.4 1540.6310718.38 1540.65
10724.85  1540.710725.36 1540.6610737.31 1540.8110742.24 1540.8710745.76  1540.9
10749.92    154110753.06 1541.0510756.39 1541.1210759.89 1541.1810766.99 1541.22
10772.99  1541.3 10777.5 1541.2910788.28 1541.4110797.55  1541.5 10806.8 1541.61
10824.31  1541.810840.61    154210845.77 1542.1210847.62 1542.1510856.53 1542.33
10860.08  1542.410863.82 1542.4410867.34 1542.4910872.74 1542.5910875.42 1542.62
10877.46  1542.710879.75  1542.710884.63 1542.6710885.83 1542.6910889.37  1542.7
10889.47  1542.710889.51  1542.710889.52  1542.710889.54  1542:710889.59  1542.7
10889.61  1542.7 10890.2  1542.710894.31 1542.8510894.96 1542.8810898.42    1543
 10900.6  1543.110902.14 1543.1510903.52  1543.210904.79 1543.2110905.59  1543.2
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10906.68 1543.16 10907.9 1543.1410909.35 1543.1210910.31 1543.0910911.27  1543.1
10912.22 1543.0210913.36 1542.97 10914.4 1542.9310918.44 1542.74 10920.5  1542.7
 10921.1 1542.6210922.21 1542.5310924.48 1542.4510928.68 1542.4810930.51  1542.5
10933.67  1542.610942.06 1542.7910957.74 1543.1110958.89 1543.1610965.68  1543.5
10968.32  1543.610977.85    154410986.21 1544.2711001.96 1544.7711033.86  1545.9

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9629.76     .05 9980.15     .04   10044     .0510444.28     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9980.15   10044           300.39  262.91  127.93             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.33

INPUT
Description:
Station Elevation Data    num=     298
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9563.16  1547.5 9567.65 1547.44 9569.24 1547.42 9574.59 1547.33 9581.57  1547.2
 9583.31  1547.2 9584.14  1547.2  9584.9 1547.18 9585.81 1547.16 9586.19 1547.16
 9586.48  1547.2 9586.72 1547.14 9591.49 1547.08 9598.54 1547.24 9601.96 1547.22
 9604.83  1547.2  9606.9 1547.19 9609.55 1547.15 9610.47 1547.19 9612.31 1547.14
  9613.4  1547.1 9614.75 1547.12 9616.61    1547 9617.92 1546.99 9618.55 1546.98
 9620.12  1546.7 9621.45  1546.7 9623.21 1546.68 9624.38 1546.63  9626.5 1546.55
 9627.22  1546.6 9627.96 1546.55 9628.74 1546.57 9630.65 1546.57  9632.8 1546.35
 9637.22  1546.2 9638.12 1546.16 9638.37 1546.16 9646.73 1546.09 9647.94 1546.13
 9648.77  1546.2 9650.32 1546.18 9650.77 1546.15 9652.85 1546.06 9653.67 1546.02
 9654.53     1546 9658.38    1546 9662.23 1545.96  9663.5  1545.9 9665.08 1545.89
 9675.12  1545.6 9675.35 1545.62  9677.3  1545.6 9677.74  1545.6 9679.57 1545.62
 9681.42  1545.6  9681.7 1545.64 9681.94 1545.64 9683.98 1545.59 9684.21 1545.58
 9684.46  1545.6 9687.12 1545.57 9687.36 1545.57 9690.31 1545.59 9690.74 1545.57
 9695.21  1545.6  9695.8 1545.56 9697.52 1545.57  9697.8 1545.57 9699.29 1545.56
 9699.56  1545.6 9699.83 1545.58 9705.54 1545.51 9705.82  1545.5 9707.49 1545.46
 9707.92  1545.4 9710.92 1545.35 9717.11 1545.22 9718.72 1545.18 9726.82 1545.08
  9730.6  1545.1 9732.55 1545.01 9732.59 1545.01 9732.76 1545.01 9733.23 1545.02
 9739.26  1544.9  9743.8 1544.72  9752.6 1544.41 9755.49  1544.3 9756.94 1544.26
 9758.52  1544.2 9764.39    1544 9805.36 1542.68 9820.05 1542.21 9822.84 1542.13
 9824.36  1542.1 9825.58 1542.05 9826.88 1542.03 9826.94 1542.03    9827 1542.03
 9827.05     1542 9827.11 1542.03 9827.22 1542.03 9827.29 1542.03 9827.37 1542.03
 9827.55     1542 9827.67 1542.03 9827.82 1542.04 9828.02 1542.04 9828.25 1542.04
 9828.73     1542 9829.31 1542.03 9831.11 1542.05 9837.33  1542.1 9850.61 1542.21
 9850.96  1542.1 9851.67    1542 9853.66 1541.65 9855.38  1541.3 9857.73  1540.7
 9859.42  1540.3 9863.98 1540.27 9868.94 1540.25  9879.4 1540.23 9883.81 1540.89
 9890.03     1542 9890.89 1542.12  9891.2 1542.17 9891.47 1542.22 9892.13 1542.21
 9903.61     1542 9906.93 1541.94 9907.09 1541.93 9907.28 1541.93 9910.85 1541.87
 9914.57  1541.8 9914.91 1541.83 9915.26 1541.82 9915.73 1541.81 9916.64 1541.78
 9918.71  1541.7 9920.22 1541.64 9922.04 1541.58 9924.49  1541.5 9928.44 1541.36
    9934  1541.2 9936.84 1541.05 9937.15 1541.06 9937.25 1541.06 9946.16 1541.17
 9951.97  1541.3 9960.52 1541.37 9965.41 1541.44 9975.45 1541.56 9977.43 1541.59
 9978.69  1541.2 9981.25 1540.43  9982.7    1540 9985.25 1539.23 9988.58 1538.24
 9989.22     1538 9989.96 1537.77 9990.94 1537.47 9993.18 1536.78   10000 1536.77
10037.31 1536.810038.75 1536.7610041.27 1537.1810043.35 1537.5210046.25    1538
10054.39 1539.410058.03    154010061.39 1540.5710067.24 1541.6110067.29 1541.61
10104.25 1540.910122.78  1540.910218.03 1541.0810221.32 1541.0610222.52 1541.06
10224.29    154110226.67 1541.0210228.36 1540.9910229.63 1540.9910230.74 1540.99
10231.88    154110233.23 1541.0110234.79 1541.0210238.12 1541.0410241.87 1541.06
10243.13 1541.110244.39 1541.0710245.71 1541.08 10247.2  1541.1   10249 1541.12
10250.92 1541.110252.89 1541.1710253.78  1541.210256.16 1541.1910260.72 1541.17
10262.14 1541.110267.08 1541.1910268.51 1541.1710273.27 1541.0710274.21 1541.03
10275.28     1541 10276.2 1540.98 10278.6    154110279.75 1541.0110282.54 1541.06
10308.84 1541.910312.55 1541.9210314.02 1541.9210314.77 1541.9210314.86 1541.91
10315.97 1541.910317.78 1541.9110320.01  1541.910321.27  1541.910321.83  1541.9
10321.85 1541.9   10322  1541.910322.26  1541.910322.61 1541.8910323.17 1541.89
10323.91 1541.910324.81 1541.8910325.61 1541.8910326.37 1541.8910327.17 1541.89
10327.85 1541.9 10328.4 1541.8910329.59 1541.8910330.83  1541.9 10332.7  1541.9
10334.76 1541.910336.94  1541.910339.12  1541.910343.01 1541.8810432.99 1540.93
 10436.4 1540.910443.36 1540.92 10446.5 1540.9110450.45 1540.9310600.71 1540.11
10606.13  1540.2 10611.1 1540.2210616.22 1540.2210616.42 1540.2210616.57 1540.22
 10616.7 1540.210616.81 1540.2210617.65 1540.2210617.66 1540.2210617.68 1540.22
10617.69  1540.2 10617.7 1540.2210617.71 1540.2210617.99 1540.2310630.73 1540.26
10719.53  1540.5   10734 1540.6910872.22 1541.5710873.77 1541.5710875.92 1541.56
10876.12 1541.610878.73 1541.5710881.19 1541.5610883.78 1541.5310884.56 1541.59
10893.55    154210900.12  1542.210904.66 1542.3710916.83 1542.7710919.74 1542.83
10928.95 1543.110934.94 1543.3110952.49 1543.7710953.15 1543.7510967.03    1544
10969.57  1544.1 10969.7 1544.0610969.87 1544.0710970.09 1544.0810970.34 1544.09
10971.09 1544.110972.42 1544.1510973.67  1544.210975.98 1544.28 10979.6 1544.41
10992.09 1544.811003.84 1545.2311006.41 1545.2911012.07 1545.5111014.97  1545.6
11016.97  1545.7 11017.8 1545.7311023.88    1546
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Manning's n Values          num=        5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9563.16     .05 9906.93     .05 9977.43     .0410067.24     .0510308.84     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9977.4310067.24            216.19  224.01  142.68             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.29

INPUT
Description:
Station Elevation Data     num=     142
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9418.65    1547 9430.99 1546.38  9448.3 1545.08 9452.25 1544.79  9465.4 1544.71
 9473.03  1544.8 9485.79 1544.61 9515.73 1544.17 9526.85    1544 9544.82 1543.75
 9559.88 1543.57    9583 1543.27 9584.36 1543.21 9592.05 1543.09 9612.41 1542.91
 9621.08 1543.15 9628.88 1543.34 9636.09  1541.7 9636.15  1541.7 9637.78    1542
 9645.76 1543.15 9649.06 1543.64 9666.56 1542.99  9693.5    1542 9708.28 1541.46
 9747.36    1540 9767.97 1539.59 9776.89 1539.52 9778.73    1539 9784.52 1537.44
 9793.19 1537.66 9804.94 1537.92 9805.66 1537.99  9805.8    1538 9807.47 1538.16
 9818.77 1539.19 9826.94 1539.27 9842.46 1539.36 9847.79  1539.4  9855.9 1538.94
  9884.1 1539.52 9909.12    1540 9942.77 1540.54 9942.92  1540.5 9943.12  1540.5
 9943.13  1540.5 9943.41  1540.5 9944.91 1540.53 9945.87  1540.5 9946.42  1540.5
 9950.45 1540.41 9965.59 1540.08 9968.95    1540 9969.44    1539 9969.63    1539
 9969.83    1539 9975.05 1538.89 9979.45    1538 9982.49  1537.4 9986.16 1536.63
  9989.2    1536 9991.29  1535.6 9992.19 1535.44 9993.57  1535.1 9997.15 1534.44
 9997.41 1534.39 9998.22 1534.4610017.25    153610017.31    153610017.45 1536.02
10018.78 1536.0210019.78 1536.0210021.01 1536.02 10030.7  1536.110034.98  1536.1
10036.77 1536.1510039.56 1536.2110041.45 1536.49 10047.4  1537.310048.15 1537.41
10051.68    1538   10057 1538.79 10062.1 1539.6710062.23  1539.710062.57 1539.68
10063.45 1539.6610088.75    153910101.97  1539.310110.31  1539.510120.56    1540
10135.75 1540.0910148.38  1540.110165.59 1540.2610187.15  1540.310206.52  1540.3
10219.43  1540.210229.71 1540.1210245.95    154010266.63  1539.410275.59  1539.2
10282.93  1539.510294.62 1539.96 10299.4    154010312.75 1540.2610344.59    1540
10364.44 1539.8210369.43 1539.7610379.33 1539.5410388.91 1539.5210399.62 1539.53
10410.91  1539.610419.73 1539.7810436.73 1539.91 10447.6    154010506.31    1540
10510.55    154010520.92 1539.89 10530.7 1539.7610547.87 1539.58 10557.7 1539.63
10565.13  1539.7 10575.1  1539.810596.96 1539.8610604.97 1539.7510610.37  1539.6
10618.72 1539.6110634.21    154010726.73  1540.610755.06 1540.7810764.82  1540.8
10774.22 1540.9110785.69  1540.910801.46 1541.0310812.34 1541.0710822.56 1541.17
10833.78  1541.710844.03 1542.22 10848.8  1542.410859.42 1542.7410877.49  1543.2
10890.57 1543.6210899.49    1544

Manning's n Values          num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
 9418.65     .05 9944.91     .0410063.45     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9944.9110063.45            228.41  206.07  172.48             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.25

INPUT
Description:
Station Elevation Data     num=     134
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9331.64  1541.9 9343.21  1541.5 9352.21 1541.13 9361.84  1540.4 9371.77 1539.97
 9381.69 1539.94 9391.69 1539.84 9402.07 1539.77 9412.64 1539.71 9422.58 1539.68
 9432.45  1539.6 9447.36 1539.57 9450.91 1539.56 9459.84 1539.54 9469.65 1539.52
 9470.89  1539.5 9480.35 1539.43 9481.73 1539.42 9494.26 1539.37 9502.63 1539.14
 9522.65 1539.03 9529.36 1538.87 9574.53  1538.6 9575.54 1538.64 9586.21    1538
 9590.37 1537.27 9591.48 1537.05 9593.07 1536.72 9593.26  1536.6 9594.37 1536.69
 9596.28  1536.7 9607.58 1536.79 9615.27  1536.8 9621.56  1537.7 9622.53 1537.91
 9625.33 1538.33 9631.57 1538.16 9640.34 1538.01 9645.96  1537.9 9676.43  1537.6
 9687.54 1536.99 9697.44 1536.96 9708.06 1537.16 9717.36 1537.33 9726.67  1537.6
 9734.59  1538.1 9824.91  1539.1 9840.98 1539.07 9862.04 1538.96 9934.67  1538.6
 9937.49    1538 9937.65 1538.03 9937.81    1538  9938.5 1537.87 9944.65  1536.7
 9948.15    1536 9950.16 1535.61  9953.2 1535.03 9974.83 1535.03 9975.38    1535
  9975.7 1534.99 9982.66    1534 9987.18  1533.4 9996.69    1532  9999.5  1531.5
 9999.79 1531.52  9999.8 1531.5210000.79    153210002.61 1532.6910005.51    1534
10007.05 1534.7610008.13 1535.2410009.73    153610013.25 1537.8510013.54    1538
10013.88 1538.1510014.03 1538.2310014.24 1538.3610015.93 1539.2110016.17  1539.2
10016.29 1539.1910016.35 1539.1910022.46  1539.110077.65 1539.0310102.46 1538.81
   10118 1538.5410122.71  1538.410134.86 1538.1710146.01    153810157.34 1537.71
10158.67 1537.7710159.28  1537.810163.27    153810182.69 1538.7310194.77  1539.1
10204.27 1539.3310204.88 1539.3510212.83 1538.96   10217  1538.710218.89 1538.67
10227.41    153810241.34 1537.6110242.33  1537.610258.63 1538.0910285.55 1538.32
10313.03  1538.510316.31 1538.5910349.65 1538.8510386.95 1539.1210396.78  1539.1
10407.14 1539.0210417.69 1538.8810423.16 1538.8910435.26 1538.9410447.23  1538.8
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10460.44 1538.6510470.26  1538.610482.34 1538.4910491.64  1538.410501.87 1538.59
10512.61  1538.610523.56 1538.7410535.37 1538.8210542.81 1538.8910557.04 1539.03
10646.25 1539.8810655.44  1539.910670.26 1540.5310674.92  1540.710682.69 1541.03
10699.98 1541.5710703.23 1541.6910714.88 1541.9310722.42  1542.5

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9331.64     .05 9625.33     .05 9934.67     .0410015.93     .0510204.27     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9934.6710015.93           175.71  212.24  229.28             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 9331.64 9522.65    1542

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.21

INPUT
Description:
Station Elevation Data    num=     273
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9188.91  1543.2 9197.93 1542.74 9198.88 1542.74 9202.07 1542.59 9203.75 1542.52
 9207.05  1542.5 9223.64 1542.87 9228.21 1542.93 9230.35 1542.89  9231.1  1542.8
 9232.02  1542.8 9233.12 1542.78 9234.55 1542.76 9236.61 1542.74 9236.71 1542.74
 9238.22  1542.6 9243.62 1542.19 9244.28 1542.13  9245.1 1542.09 9245.26 1542.08
 9246.08  1542.1 9247.05 1542.17 9248.48 1542.17 9252.85 1542.26 9255.47    1542
 9256.46    1542 9256.97 1541.92 9257.49 1541.89 9257.56 1541.85 9263.87 1541.45
  9269.4  1540.9 9279.53 1540.13 9280.53 1540.04 9281.25    1540 9281.85 1539.97
 9283.17    1540 9286.87 1540.03 9287.06 1540.02 9287.25 1540.01 9287.59    1540
 9295.32    1540 9298.05 1540.01 9298.69 1540.01 9299.87 1540.01 9305.12 1540.01
 9307.97    1540 9311.81    1540 9312.82    1540  9315.3    1540 9317.42    1540
 9322.07  1539.9 9323.42 1539.89 9325.24 1539.87 9329.19 1539.85 9332.18 1539.81
  9337.3  1539.8 9341.56 1539.75 9341.81 1539.75 9345.37 1539.77 9345.95 1539.76
 9348.13  1539.7 9348.41 1539.75 9350.87 1539.73  9352.8 1539.69 9355.94 1539.68
 9357.96  1539.6 9359.92 1539.65  9361.4 1539.67 9362.94 1539.68 9365.91 1539.68
 9369.38  1539.7 9371.04 1539.71 9374.74 1539.72 9377.11 1539.72 9381.34 1539.74
 9383.47  1539.8 9385.07 1539.77 9400.44  1539.8 9404.78 1539.88 9404.88 1539.88
  9407.2    1540 9411.33 1540.23 9413.15 1540.35 9414.42 1540.42    9418 1540.58
 9419.52  1540.8 9420.86 1540.84 9421.54 1540.97 9424.41 1541.31 9424.59 1541.33
 9425.32  1541.4 9428.56 1541.33 9430.44  1541.3 9432.26 1541.24 9433.91 1541.23
 9436.47  1541.2 9438.67 1541.16 9442.58 1541.02 9444.31 1541.02 9445.39 1540.99
 9447.46  1540.9 9456.81 1541.09 9458.06 1541.04 9458.93 1541.04 9460.21    1541
 9461.84    1541 9463.07 1540.92 9480.16  1540.6 9500.31 1540.03  9500.5 1540.02
 9501.24    1540 9502.56 1539.99 9502.73    1540 9502.97    1540 9504.51    1540
 9505.04  1540.1 9507.06    1540 9535.61 1538.48 9542.95    1538 9547.03 1537.79
 9549.28  1537.7 9555.83 1537.08 9562.74 1536.41 9572.16  1536.3 9578.31 1536.22
 9591.96  1537.3 9593.08 1537.44  9598.3 1537.47  9638.9 1537.72 9654.36 1537.82
 9662.24  1537.9 9667.17 1537.91 9683.49 1537.97 9684.54 1537.98 9685.25 1537.98
 9685.69    1538  9686.1 1537.98 9690.99    1538 9698.92 1538.03 9723.46 1538.11
 9734.53  1538.1 9741.36 1538.15 9764.77 1538.16 9777.95 1538.17 9782.56 1538.16
 9783.86  1538.2  9792.9 1538.13 9801.16 1538.09 9809.58 1538.08 9817.57 1538.09
 9824.59  1538.1 9832.47 1538.15 9841.66 1538.14 9852.77 1538.11 9863.02 1538.06
 9868.56    1538 9875.44 1538.01 9884.79    1538 9915.51    1538 9917.21    1538
  9932.6  1538.2 9938.13 1538.06 9942.19  1537.6 9942.21 1537.59 9942.46 1537.52
 9946.35  1536.7 9950.25    1536 9956.76  1534.8 9957.03 1534.77 9958.24 1534.72
 9960.82  1534.6 9968.26    1534 9978.17 1533.26 9995.76    1532 9996.29 1531.96
   10000  1531.6 10004.9 1531.3210005.24 1531.6210005.67    153210006.59  1532.8
10006.64  1532.810006.83 1533.1910007.83    153410010.11 1535.7310010.88 1535.98
10010.91    153610010.93 1536.0210013.53    153810013.83 1538.6810013.83  1538.7
10013.84 1538.6810013.86 1538.68 10014.3  1538.710014.91 1538.7110014.96  1538.7
10015.14 1538.7310015.22 1538.7310015.32 1538.7310015.99 1538.7110023.84  1538.4
10029.14 1538.21 10030.5 1538.1610037.91    153810071.98    153810112.08    1538
 10128.6    1538 10132.1    153810143.29    1538 10157.7    153810166.54    1538
10189.28    153810216.73 1538.3310228.05  1538.310250.04 1538.1310251.36  1538.1
10255.51 1538.0510262.83    153810262.87    153810314.48  1537.610316.06  1537.6
10324.32 1537.4210325.66 1537.3910329.01 1537.3510330.63 1537.3410333.09  1537.4
10336.86 1537.31 10340.6 1537.2510344.34 1537.17 10348.4  1537.110349.29  1537.1
10350.89 1537.0610350.91 1537.0610352.22 1537.0710354.57  1537.110356.86  1537.2
10357.48 1537.1510357.77 1537.14   10358 1537.14 10358.2 1537.13 10358.3  1537.1
10358.51 1537.1310358.84 1537.1410363.13 1537.16 10379.9 1537.26 10413.1  1537.5
 10506.5    1538 10538.9 1538.9110577.52    154010590.36 1540.1810617.89  1540.5
10636.07 1540.7710645.78 1540.8810651.72 1540.9310655.62 1540.9510659.12    1541
10704.67 1541.4710708.49 1541.5710709.15 1541.5810710.23  1541.610711.85  1541.6
10716.76 1541.66 10738.3 1541.8810742.96 1541.8810745.57 1541.8710747.38  1541.8
10748.83 1541.8210748.88 1541.8210749.19 1541.8210749.49 1541.8110750.08  1541.8
10751.03 1541.8210755.98 1541.8310804.67 1541.99

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9188.91     .05 9593.08     .05  9932.6     .0410013.83     .0510216.73     .05
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Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9932.610013.83            316.01  333.28  361.06              .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.15

INPUT
Description:
Station Elevation Data    num=     192
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9457.12  1541.7 9459.82  1541.6 9460.49 1541.61 9461.47  1541.6 9463.91 1541.42
 9472.19  1540.7 9472.86 1540.72 9473.78 1540.58 9481.06 1540.14 9481.26 1540.12
 9481.45  1540.1 9482.65    1540 9486.76 1539.56 9488.86 1539.27 9496.06    1538
 9499.81  1537.4 9500.77 1537.26 9506.25 1537.25  9510.9 1537.23 9517.04 1537.19
 9521.82  1537.2 9536.27 1537.01 9537.69 1537.13 9547.21 1537.97 9550.31 1537.23
 9553.04  1536.6 9553.98 1536.37 9554.37 1536.27 9555.62    1536 9555.78 1535.97
 9555.88    1536 9556.09 1535.91 9556.79 1535.74 9557.04 1535.68 9573.94 1535.47
 9577.86  1535.4 9578.36 1535.42 9578.38 1535.42 9581.77    1536 9586.49 1536.69
 9587.47  1536.9 9594.62 1536.75 9607.49 1536.55 9641.43    1536 9643.88 1535.92
 9643.93  1535.9 9644.53 1535.86 9653.12    1535 9658.95 1534.44 9662.35 1534.94
  9669.3    1536 9670.25 1536.19 9670.73 1536.28 9674.16 1536.14 9676.02 1536.14
 9678.24  1536.1 9679.88 1536.14  9681.6 1536.11 9685.58    1536 9687.69 1535.96
  9688.6    1536 9688.96 1535.98  9689.2 1535.98 9690.39 1535.99 9690.97 1535.98
 9707.48  1535.9 9714.79 1535.92  9726.7 1535.94 9727.18 1535.94 9727.66 1535.95
 9728.31    1536 9734.33 1535.97 9735.13 1535.97 9747.29 1535.75 9747.96 1535.75
 9751.85  1535.7 9753.45  1535.5 9757.57 1535.39 9763.86 1535.31 9778.42 1535.21
 9782.79  1535.2 9788.73 1535.13  9796.2 1535.07 9804.28 1535.02 9808.43    1535
 9812.17    1535 9815.77 1535.03 9819.53 1535.09 9823.88 1535.15 9834.48 1535.27
 9859.34  1535.5 9868.72 1535.64 9879.91 1535.75 9893.19 1535.86  9900.2 1535.92
 9909.03    1536 9909.27    1536  9922.2 1536.02 9929.98 1536.03 9937.93 1536.03
  9938.5    1536 9939.06 1536.03 9939.82 1536.03 9941.49 1536.04  9942.4 1536.04
 9944.85    1536 9948.15 1536.08 9955.29 1536.15 9973.95 1536.31 9974.03 1536.28
 9974.57    1536 9977.68 1534.88 9979.65    1534 9984.55 1532.16 9984.87    1532
 9985.45  1531.7 9985.54 1531.68 9985.66 1531.65 9986.13 1531.47 9989.07 1530.31
 9989.54  1530.3 9989.75 1530.29   10000  1530.310010.84  1530.310017.46 1530.31
10018.94  1530.610019.32 1530.6210019.69 1530.6410025.53 1531.4610029.08    1532
 10030.8  1532.310036.24    153310041.11 1533.7610042.05  1533.910042.57    1534
10042.71    153410042.81 1534.0110063.69 1534.7910090.64 1535.8810091.69 1535.92
10092.09  1535.910092.38  1535.910097.64    153610097.67    1536 10097.7    1536
10097.79    153610098.73    153610100.93    1536 10102.8    1536 10104.1    1536
10104.51    153610116.27    153610124.93    153610129.65    153610161.29 1535.97
10167.93    153610169.27 1535.9710226.93    153610249.25 1535.58 10255.5 1535.48
 10266.5  1535.310291.88 1534.8210312.49 1534.4510314.39 1534.4410317.21 1534.36
10344.51  1535.110354.74 1535.3610359.04 1535.0710367.12  1534.510390.16 1535.12
10390.32  1535.110390.34 1535.1310393.98 1535.3910403.98    153610414.38 1536.69
10417.11  1536.810420.24 1536.9910421.24 1537.0510430.44 1537.2610440.95 1537.45
10448.93  1537.610469.82    1538 10481.6 1538.14 10488.2 1538.23   10491 1538.28
10495.23  1538.310500.73 1538.3910507.36 1538.4410514.54 1538.4810522.36  1538.5
10530.93  1538.510536.44 1538.54

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9457.12     .05 9670.73     .05 9973.95     .0410092.38     .0510226.93     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9973.9510092.38            270.67  320.65  330.52              .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.09

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9424.78  1542.3 9438.03    1540 9444.86 1539.14 9455.87  1537.8  9465.1 1537.77
 9513.96 1536.83  9547.2    1536 9558.25 1535.57 9570.82 1535.53 9571.75 1535.55
 9581.16 1535.81 9588.74    1536 9592.71 1536.34 9597.13  1535.6 9606.69 1534.51
 9616.58 1534.49 9629.39 1534.45 9639.87 1535.75 9656.35 1535.24 9665.25 1534.52
 9672.06 1534.44 9696.32  1533.9 9704.29 1533.69 9727.94 1533.85 9753.78 1531.36
 9765.16  1532.6 9775.54 1533.71 9785.01  1533.9 9795.56  1534.1 9805.09 1533.71
 9814.96 1533.51 9868.69  1533.6 9882.68 1533.56  9892.3  1533.5 9913.24 1533.39
 9922.96 1533.19 9935.11 1532.78 9945.79 1532.84 9954.51  1532.7  9968.8  1533.6
 9972.58    1532  9977.8    1530 9986.13    152810003.17  1526.5 10005.4 1527.52
10011.55    153010014.74 1531.3710016.19    153210019.92 1533.4510021.22    1534
10079.98 1534.0210158.96    153410189.09 1533.3510203.91 1532.9710212.81  1532.7
10259.64  1533.1 10275.9  1533.310292.66 1533.4110362.59    153410371.83 1534.26
10385.76 1534.6510395.26 1534.8210408.74  1535.110415.43 1535.3110436.24 1535.96
10484.56 1537.9610485.32    153810507.37 1538.4210530.64  1538.8 10545.1 1538.99

Manning's n Values        num=       5
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```
     Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val
 9424.78      .05 9795.56      .05  9968.8      .0410021.22      .0510158.96      .05

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
        9968.810021.22            363.02  441.86  501.81              .1        .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.00

INPUT
Description:
Station Elevation Data     num=      63
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
  9609.1     1540 9622.48 1538.14 9635.72     1536 9647.53     1534 9647.65 1533.98
 9654.24   1533.7 9670.53 1533.08 9680.63 1532.84 9690.55   1532.8 9704.07 1532.83
 9710.01 1532.76 9720.07     1532  9733.6  1531.2 9740.25 1531.01 9743.19  1531.3
 9751.03 1532.11 9760.37     1532 9772.86 1531.99 9795.97 1531.97 9824.69 1531.95
 9852.14 1531.94 9883.51 1531.94 9890.84 1530.23 9900.58     1528 9904.98     1527
 9913.27  1527.5 9919.94  1527.9 9921.56     1528 9930.83  1528.1 9963.18 1528.81
 9971.56  1528.4 9980.21     1528 9990.04  1527.510000.85 1527.0210013.35  1529.4
10023.33  1531.110030.32 1531.3210040.14 1531.4610047.82 1531.6210058.85 1531.83
10075.53 1531.4810076.47 1531.4210091.61 1530.1910124.03     153010154.62 1530.06
10220.28     153010249.01     153010263.59 1529.2810269.59  1529.410277.32  1529.7
10301.91 1530.1510331.14  1530.110339.77 1530.1510351.58     153010382.77 1529.73
10399.13 1529.5910430.94 1531.9510439.26 1532.5810450.46  1533.410466.22 1533.65
10476.31  1533.810509.97 1534.1910556.47 1534.57

Manning's n Values         num=       4
     Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val
  9609.1      .08 9751.03      .08 9883.51     .03710058.85      .06

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
       9883.5110058.85            483.41   446.4  348.15              .1        .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 0.92

INPUT
Description:
Station Elevation Data     num=     162
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
 9840.45   1535.9 9841.82  1535.8 9842.18  1535.8 9842.47 1535.79 9842.78 1535.79
 9843.11   1535.8 9843.88 1535.77 9844.62 1535.76 9845.33 1535.75 9852.21 1535.48
 9852.88   1535.5 9854.72 1535.36  9855.9 1535.32  9857.5 1535.25 9859.47 1535.14
 9863.89   1534.9 9865.91 1534.81 9871.08 1534.57 9874.57 1534.33 9877.93 1534.15
 9878.07   1534.1 9878.77 1534.06 9879.07 1534.04 9879.24     1534 9886.65 1532.94
 9888.67   1532.6 9892.03     1532 9896.25 1531.22 9902.73     1530 9910.86 1528.47
 9911.77   1528.3 9912.19 1528.28 9920.18     1528  9920.7 1527.98 9921.24 1527.97
 9924.03   1527.9 9927.14 1527.79  9927.4 1527.81 9927.81 1527.82 9931.41 1527.83
  9933.2   1527.9  9934.3     1528 9937.41 1528.21 9938.17 1528.23 9941.04 1528.38
 9942.13   1528.4 9944.69 1528.56 9946.46 1528.59 9948.32 1528.62 9953.79 1528.77
 9955.77   1528.8 9959.26 1528.62 9960.92 1528.65 9962.82 1528.69 9964.83  1528.7
 9965.45   1528.7 9967.94 1528.74 9968.88 1528.77 9970.14 1528.72 9973.09 1528.62
 9975.28   1528.5 9977.62 1528.35 9980.42 1528.22 9980.58 1528.05  9980.6     1528
 9980.82   1527.8 9981.52 1527.32 9982.54     1526 9984.44 1524.46  9984.9     1524
 9985.04   1523.9  9985.2 1523.71 9985.48 1523.48 9993.75 1523.65   10000  1523.7
10005.87   1523.810007.94 1523.9810008.05 1523.9910008.19     152410012.21 1524.31
10031.44   1525.8 10034.7     1526 10052.9 1526.8310062.68 1527.3210094.14 1527.11
 10115.7     152710121.53 1527.4810127.93     152810139.15 1528.9110144.15 1529.32
 10155.3   1529.210169.41 1529.2310177.47 1529.1810182.09 1528.9110184.05  1528.9
10187.23   1528.910188.32 1528.8910190.67 1528.8710207.82 1528.7310216.47 1528.67
10225.12   1528.610236.78 1528.5310252.86 1528.41 10306.8     152810317.82 1527.59
10319.82   1527.5 10322.9 1527.4610324.31 1527.4210325.11 1527.4310327.37 1527.45
10328.93   1527.410331.19 1527.3510331.47 1527.34 10334.1 1527.3710335.22 1527.39
 10340.2   1527.310342.21 1527.3710345.17 1527.4310346.08 1527.4310394.23 1526.34
10396.44   1526.310398.96 1526.2810418.41     152610424.45 1525.7810426.27 1525.72
10428.42   1525.610430.05 1525.5910431.45 1525.7810433.44     152610436.03  1526.3
10438.76   1526.510448.48 1526.8410451.69 1526.9110451.79 1526.9210465.15 1527.58
10469.88   1527.810471.38  1527.9 10473.5     152810474.24 1528.0410474.75 1528.07
10475.71   1528.210476.58 1528.2310490.79 1529.2910493.97 1529.5310494.46 1529.54
10496.88   1529.610507.12  1529.9 10507.6 1529.9110509.95     153010557.12 1531.31
10577.64     153210580.36 1532.0510582.76 1532.0810585.63 1532.1510594.61 1532.42
10598.59   1532.510598.84 1532.5610600.78 1532.5910602.35  1532.610604.34 1532.61
10606.72   1532.610612.44 1532.64

Manning's n Values         num=       3
     Sta    n Val      Sta    n Val      Sta    n Val
 9840.45      .08 9970.14     .03710144.15      .06
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Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970.1	410144.15	0	0	0	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach 1	0.92	9700.0	1523.5	1532.1	1529.9	1532.4	0.001802	5.3	2850.4	692.1	0.4
Reach 1	0.92	9700.0	1523.5	1532.1	1529.9	1532.4	0.001802	5.3	2850.4	692.1	0.4
Reach 1	1.00	9700.0	1527.0	1533.1	1532.3	1533.7	0.005523	7.5	2023.0	775.6	0.7
Reach 1	1.00	9700.0	1527.0	1533.1	1532.3	1533.7	0.005770	7.7	1888.1	636.0	0.7
Reach 1	1.09	9700.0	1526.5	1535.8	1535.7	1536.5	0.007166	10.5	1884.6	858.7	0.7
Reach 1	1.09	9700.0	1526.5	1535.8	1535.7	1536.6	0.006966	10.4	1812.3	729.6	0.7
Reach 1	1.15	9700.0	1530.3	1537.9	1537.3	1538.3	0.004576	7.1	2283.3	965.1	0.6
Reach 1	1.15	9700.0	1530.3	1537.9	1537.3	1538.3	0.004486	7.1	2275.4	917.3	0.6
Reach 1	1.21	9700.0	1531.3	1539.6	1539.5	1540.3	0.007037	9.1	2066.5	1051.6	0.7
Reach 1	1.21	9700.0	1531.3	1539.6	1539.6	1540.3	0.007543	9.4	1906.6	910.0	0.7
Reach 1	1.25	9700.0	1531.5	1540.9	1540.1	1541.2	0.002807	6.3	2912.3	1323.8	0.5
Reach 1	1.25	9700.0	1531.5	1541.0	1540.1	1541.3	0.002945	6.5	2655.4	940.0	0.5
Reach 1	1.29	9700.0	1534.4	1541.6	1541.4	1542.1	0.007269	8.1	2118.2	1125.1	0.7
Reach 1	1.29	9700.0	1534.4	1541.7	1541.3	1542.2	0.006490	7.8	2042.9	910.0	0.7
Reach 1	1.33	9700.0	1536.8	1542.8	1542.6	1543.3	0.006386	8.4	2193.2	1117.3	0.7
Reach 1	1.33	9700.0	1536.8	1542.8	1542.7	1543.5	0.006865	8.8	1993.1	920.0	0.7
Reach 1	1.38	9700.0	1536.7	1544.0	1543.6	1544.4	0.005586	8.4	2265.3	1055.5	0.6
Reach 1	1.38	9700.0	1536.7	1544.1	1543.7	1544.6	0.005781	8.7	2044.2	852.2	0.6
Reach 1	1.48	9700.0	1539.4	1547.0	1547.0	1547.9	0.008518	10.5	1730.3	840.4	0.8
Reach 1	1.48	9700.0	1539.4	1547.2	1547.1	1548.1	0.008461	10.6	1555.7	625.0	0.8
Reach 1	1.56	9700.0	1542.0	1550.0	1549.8	1550.7	0.005117	9.0	2065.7	900.1	0.6
Reach 1	1.56	9700.0	1542.0	1550.2	1549.8	1551.0	0.005610	9.6	1699.9	540.0	0.7
Reach 1	1.65	9700.0	1543.0	1553.0	1553.0	1554.0	0.005588	9.9	1883.5	956.3	0.7
Reach 1	1.65	9700.0	1543.0	1553.3	1553.3	1554.5	0.006102	10.6	1522.1	546.7	0.7
Reach 1	1.72	9700.0	1544.6	1554.9	1554.8	1555.8	0.005763	9.5	1825.6	864.0	0.7
Reach 1	1.72	9700.0	1544.6	1555.4	1554.8	1556.1	0.004115	8.4	1827.4	585.0	0.6
Reach 1	1.77	9700.0	1545.6	1556.5	1556.2	1557.2	0.004360	8.3	2120.4	951.6	0.6
Reach 1	1.77	9700.0	1545.6	1556.5	1556.3	1557.4	0.005755	9.5	1646.2	615.0	0.7
Reach 1	1.84	9700.0	1549.1	1558.3	1557.8	1558.9	0.005017	8.5	2081.0	869.7	0.6
Reach 1	1.84	9700.0	1549.1	1558.7	1557.8	1559.1	0.003544	7.4	2331.5	801.9	0.5
Reach 1	1.90	9700.0	1550.9	1560.4	1560.4	1561.2	0.006555	10.3	2069.3	963.5	0.6
Reach 1	1.90	9700.0	1550.9	1560.4	1560.4	1561.2	0.006740	10.4	1983.2	865.0	0.7
Reach 1	1.99	9700.0	1556.3	1563.2	1561.8	1563.6	0.004822	6.8	2278.9	1174.8	0.5
Reach 1	1.99	9700.0	1556.3	1563.2	1561.8	1563.6	0.004666	6.7	2307.9	915.6	0.5

Reach 1	2.08	8400.0	1558.5	1565.6	1564.9	1565.9	0.004555	7.0	2352.9	1038.9	0.5
Reach 1	2.08	8400.0	1558.5	1565.7	1565.2	1566.1	0.005534	7.8	1998.4	805.2	0.6
Reach 1	2.13	8400.0	1559.1	1567.2	1567.2	1568.8	0.015243	13.2	1115.0	857.2	0.9
Reach 1	2.13	8400.0	1559.1	1567.5	1567.2	1568.9	0.012934	12.6	1169.7	498.2	0.9
Reach 1	2.19	8400.0	1560.6	1570.1	1568.4	1570.5	0.003213	6.8	2093.9	1295.9	0.4
Reach 1	2.19	8400.0	1560.6	1570.2	1568.4	1570.5	0.003210	6.8	1958.4	502.0	0.4
Reach 1	2.28	8400.0	1564.1	1572.0	1571.4	1573.2	0.009810	10.8	1157.0	376.0	0.8
Reach 1	2.28	8400.0	1564.1	1572.0	1571.4	1573.2	0.009522	10.7	1170.3	375.8	0.8
Reach 1	2.35	8400.0	1564.9	1574.9	1573.5	1575.7	0.006121	8.5	1358.7	401.9	0.6
Reach 1	2.35	8400.0	1564.9	1574.9	1573.6	1575.7	0.006188	8.6	1352.6	400.7	0.6
Reach 1	2.41	8400.0	1565.5	1576.7	1576.0	1577.3	0.003596	7.8	2066.1	685.5	0.5
Reach 1	2.41	8400.0	1565.5	1576.7	1576.0	1577.3	0.003597	7.8	2065.9	685.5	0.5
Reach 1	2.46	8400.0	1568.8	1577.8	1577.8	1579.2	0.012448	11.4	1105.0	360.9	0.8
Reach 1	2.46	8400.0	1568.8	1577.9	1577.9	1579.2	0.011868	11.2	1124.3	361.3	0.8
Reach 1	2.52	8400.0	1571.6	1580.6	1578.8	1581.0	0.002769	6.1	1996.0	482.3	0.4
Reach 1	2.52	8400.0	1571.6	1580.6	1578.8	1581.0	0.002817	6.2	1984.3	482.0	0.4
Reach 1	2.58	8400.0	1573.7	1581.6	1581.4	1582.5	0.008020	10.0	1441.4	538.8	0.7
Reach 1	2.58	8400.0	1573.7	1581.6	1581.4	1582.5	0.008065	10.0	1438.2	538.5	0.7
Reach 1	2.64	8400.0	1576.0	1584.0	1583.0	1584.6	0.005764	8.3	1562.4	461.8	0.6
Reach 1	2.64	8400.0	1576.0	1584.0	1583.0	1584.6	0.005750	8.3	1563.7	461.9	0.6
Reach 1	2.69	8400.0	1576.5	1585.4	1584.3	1585.8	0.003608	6.7	1984.2	654.5	0.5
Reach 1	2.69	8400.0	1576.5	1585.4	1584.3	1585.8	0.003607	6.7	1984.4	654.5	0.5
Reach 1	2.73	6500.0	1578.3	1586.2	1585.6	1586.9	0.007785	8.7	1182.4	380.5	0.7
Reach 1	2.73	6500.0	1578.3	1586.2	1585.6	1586.9	0.007784	8.7	1182.4	380.5	0.7
Reach 1	2.77	6500.0	1581.8	1587.8	1587.6	1588.8	0.010471	9.1	962.8	362.9	0.8
Reach 1	2.77	6500.0	1581.8	1587.8	1587.6	1588.8	0.010471	9.1	962.8	362.8	0.8
Reach 1	2.84	6500.0	1584.1	1590.7	1589.5	1591.3	0.005709	7.5	1142.5	326.8	0.6
Reach 1	2.84	6500.0	1584.1	1590.7	1589.5	1591.3	0.005709	7.5	1142.5	326.8	0.6
Reach 1	2.88	6500.0	1586.8	1592.6	1592.6	1593.7	0.015471	11.4	902.2	365.3	0.9
Reach 1	2.88	6500.0	1586.8	1592.6	1592.6	1593.7	0.015264	11.4	906.5	365.1	0.9
Reach 1	2.93	6500.0	1589.6	1595.6	1594.5	1596.1	0.005655	7.2	1243.0	369.1	0.6
Reach 1	2.93	6500.0	1589.6	1595.6	1594.5	1596.1	0.005685	7.2	1240.7	369.0	0.6
Reach 1	2.97	6500.0	1590.8	1597.4	1597.4	1598.6	0.011569	11.4	962.0	346.7	0.8
Reach 1	2.97	6500.0	1590.8	1597.4	1597.4	1598.6	0.011363	11.3	968.1	346.4	0.8
Reach 1	3.05	6500.0	1591.8	1600.9	1599.5	1601.5	0.004732	8.1	1126.7	271.8	0.5
Reach 1	3.05	6500.0	1591.8	1600.8	1599.5	1601.5	0.004773	8.1	1123.2	271.5	0.5
Reach 1	3.10	6500.0	1594.4	1602.1	1601.6	1603.0	0.008108	9.1	975.7	275.2	0.7
Reach 1	3.10	6500.0	1594.4	1602.1	1601.5	1603.0	0.008127	9.1	974.8	275.1	0.7
Reach 1	3.15	6500.0	1596.0	1604.1	1603.1	1604.8	0.005738	8.7	1124.2	291.3	0.6
Reach 1	3.15	6500.0	1596.0	1604.1	1603.1	1604.8	0.005734	8.7	1124.4	291.2	0.6

Reach 1	3.24	6500.0	1598.8	1607.2	1606.7	1608.1	0.008618	9.5	1025.4	292.1	0.7
Reach 1	3.24	6500.0	1598.8	1607.2	1606.7	1608.1	0.008557	9.4	1010.2	275.4	0.7
Reach 1	3.31	6500.0	1601.9	1610.2	1609.1	1610.8	0.005723	7.8	1232.6	342.0	0.6
Reach 1	3.31	6500.0	1601.9	1610.3	1609.3	1611.0	0.006605	8.5	1094.6	283.6	0.6
Reach 1	3.40	6500.0	1604.1	1612.7	1611.7	1613.6	0.006172	9.3	1073.4	283.5	0.6
Reach 1	3.40	6500.0	1604.1	1612.9	1611.7	1613.7	0.005331	8.8	1085.0	244.7	0.6
Reach 1	3.46	6500.0	1605.3	1614.5	1613.8	1615.7	0.007447	10.8	891.3	228.9	0.7
Reach 1	3.46	6500.0	1605.3	1614.4	1613.8	1615.7	0.007514	10.8	888.0	228.4	0.7
Reach 1	3.54	6500.0	1609.9	1617.9	1616.6	1618.6	0.005383	7.7	1115.3	292.4	0.6
Reach 1	3.54	6500.0	1609.9	1617.9	1616.6	1618.6	0.005367	7.7	1116.6	292.5	0.6
Reach 1	3.61	6500.0	1611.3	1620.2	1620.0	1621.5	0.009605	11.4	925.1	293.0	0.8
Reach 1	3.61	6500.0	1611.3	1620.2	1619.9	1621.5	0.009607	11.4	924.7	292.6	0.8
Reach 1	3.65	6500.0	1613.9	1622.3	1620.6	1622.7	0.003825	7.1	1440.1	407.6	0.5
Reach 1	3.65	6500.0	1613.9	1622.3	1620.6	1622.7	0.003827	7.1	1439.6	407.3	0.5
Reach 1	3.70	3300.0	1615.5	1623.3	1621.5	1623.5	0.002866	4.9	911.6	268.9	0.4
Reach 1	3.70	3300.0	1615.5	1623.3	1621.5	1623.5	0.002867	4.9	911.4	268.8	0.4
Reach 1	3.73	3300.0	1618.9	1624.0	1622.6	1624.2	0.004238	5.0	881.6	328.0	0.5
Reach 1	3.73	3300.0	1618.9	1624.0	1622.6	1624.2	0.004213	5.0	880.6	321.5	0.5
Reach 1	3.76	3300.0	1620.2	1624.8	1624.3	1625.2	0.008771	6.7	776.0	394.9	0.7
Reach 1	3.76	3300.0	1620.2	1624.8	1624.3	1625.2	0.008801	6.7	774.0	393.2	0.7
Reach 1	3.79	3300.0	1621.1	1626.2	1625.8	1626.6	0.008559	7.6	764.9	409.5	0.7
Reach 1	3.79	3300.0	1621.1	1626.2	1625.8	1626.6	0.008536	7.6	762.8	404.3	0.7
Reach 1	3.84	3300.0	1621.6	1628.2	1628.0	1629.0	0.008224	8.8	623.6	303.3	0.7
Reach 1	3.84	3300.0	1621.6	1628.2	1628.0	1629.0	0.008260	8.8	622.4	303.0	0.7

ERRORS WARNINGS AND NOTES
Errors Warnings and Notes for Plan : Low Imp 100E

River: Unnamed Trib Reach: Reach 1 RS: 3.84 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.84 Profile: Encr Ex 100
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.79 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.79 Profile: Encr Ex 100
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.76 Profile: Existing-100yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.76 Profile: Encr Ex 100
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.70 Profile: Existing-100yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.70 Profile: Encr Ex 100
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.65 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.65 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.61 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.61 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.54 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.54 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.46 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.46 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.40 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.40 Profile: Encr Ex 100
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.31 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.31 Profile: Encr Ex 100
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.24 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.24 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.15 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.15 Profile: Encr Ex 100
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.10 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.10 Profile: Encr Ex 100
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.05 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.05 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.97 Profile: Existing-100yr
Warning:The energy equation could not 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.
River: Unnamed Trib Reach: Reach 1 RS: 2.97 Profile: Encr Ex 100
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 2.93 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.93 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.88 Profile: Existing-100yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The 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.
River: Unnamed Trib Reach: Reach 1 RS: 2.88 Profile: Encr Ex 100
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The 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.
River: Unnamed Trib Reach: Reach 1 RS: 2.84 Profile: Existing-100yr

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.84 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.77 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.77 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.73 Profile: Existing-100yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.73 Profile: Encr Ex 100
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.69 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 2.69 Profile: Encr Ex 100
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.
River: Unnamed Trib Reach: Reach 1 RS: 2.64 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.64 Profile: Encr Ex 100
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.58 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.58 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.52 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.52 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.46 Profile: Existing-100yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The 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.
River: Unnamed Trib Reach: Reach 1 RS: 2.46 Profile: Encr Ex 100
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 2.41 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.41 Profile: Encr Ex 100
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.35 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.35 Profile: Encr Ex 100
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.28 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.28 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.19 Profile: Existing-100yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: Unnamed Trib Reach: Reach 1 RS: 2.19 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.13 Profile: Existing-100yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The 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.
River: Unnamed Trib Reach: Reach 1 RS: 2.13 Profile: Encr Ex 100
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: Unnamed Trib Reach: Reach 1 RS: 2.08 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.08 Profile: Encr Ex 100
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.99 Profile: Existing-100yr
Warning:Divided flow computed for this cross-section.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: Unnamed Trib Reach: Reach 1 RS: 1.99 Profile: Encr Ex 100
Warning:Divided flow computed for this cross-section.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: Unnamed Trib Reach: Reach 1 RS: 1.90 Profile: Existing-100yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.

Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 1.90 Profile: Encr Ex 100
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 1.84 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.84 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.77 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.77 Profile: Encr Ex 100
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.72 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.72 Profile: Encr Ex 100
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.65 Profile: Existing-100yr
Warning:The energy equation could not 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.
River: Unnamed Trib Reach: Reach 1 RS: 1.65 Profile: Encr Ex 100
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 1.56 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.56 Profile: Encr Ex 100

Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.48 Profile: Existing-100yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 1.48 Profile: Encr Ex 100
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.38 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.38 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.33 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.33 Profile: Encr Ex 100
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.29 Profile: Existing-100yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.29 Profile: Encr Ex 100
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
River: Unnamed Trib Reach: Reach 1 RS: 1.25 Profile: Existing-100yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: Unnamed Trib Reach: Reach 1 RS: 1.25 Profile: Encr Ex 100
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.21 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.21 Profile: Encr Ex 100
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.15 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.15 Profile: Encr Ex 100
Warning:Divided flow computed for this cross-section.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.09 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.09 Profile: Encr Ex 100
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.00 Profile: Existing-100yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.00 Profile: Encr Ex 100
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

HEC-RAS STAKEHOLDER ALTERNATIVE MODEL

HEC-RAS September 1998 Version 2.2
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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

PROJECT DATA
Project Title: Watercourse Master Plan - Sonoran Wash
Project File : Wmp_UT.prj
Run Date and Time: 7/1/01 1:21:52 PM

Project in English units

Project Description:
Skunk Creek Watercourse Master Plan, Sonoran Wash Model

by Stantec
Consulting Inc. for the ASL Consulting and the Flood Control District of
Maricopa County
FCD: 99-23

Project Start Date: September 1999

PLAN DATA

Plan Title: Stakeholder Alt Existing 100yr
Plan File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SW WMP\Wmp_UT.p01

Geometry Title: Stakeholder Alternative Geo for 100yr
Geometry File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SW WMP\Wmp_UT.g05

Flow Title : Stakeholder Existing Cond 100yr
Flow File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SW WMP\Wmp_UT.f03

Plan Description:
This plan incorporates CVL geometry between cross sections 1.15 and 1.699. The geometry includes a parallel channel to the natural channel. The encroachment between 0.52 and 1.00 is the floodplain from the WMP Model for Ex. Cond. Discharges. The encroachment is left blank between cross sections 1.09 and 1.699. The encroachment from 1.72 and up is the floodway from WMP Model for Ex Cond. Discharges.

Plan Summary Information:

Number of:	Cross Sections	= 57	Mulitple Openings	=	0
	Culverts	= 0	Inline Weirs	=	0
	Bridges	= 0			

Computational Information

Water surface calculation tolerance	=	0.01
Critical depth calculaton tolerance	=	0.01
Maximum number of interations	=	20
Maximum difference tolerance	=	0.3
Flow tolerance factor	=	0.001

Computation Options

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

Encroachment Data
Equal Conveyance = True
Left Offset = 0

Right Offset = 0

River = Unnamed Trib Reach = Reach 1

RS	Profile	Method	Value1	Value2
3.84	Encr Ex 100	1	9819.6410	126.17
3.79	Encr Ex 100	1	9733.8410	138.13
3.76	Encr Ex 100	1	9834.3110	227.54
3.73	Encr Ex 100	1	9916.6610	238.12
3.70	Encr Ex 100	1	9797.910	066.71
3.65	Encr Ex 100	1	9769.5110	176.82
3.61	Encr Ex 100	1	9878.310	170.91
3.54	Encr Ex 100	1	9927.67	10220.3
3.46	Encr Ex 100	1	9918.2710	146.97
3.40	Encr Ex 100	1	9881.1610	164.67
3.31	Encr Ex 100	1	9736.610	078.61
3.24	Encr Ex 100	1	9743.310	035.44
3.15	Encr Ex 100	1	9855.0410	146.22
3.10	Encr Ex 100	1	9959.5610	234.68
3.05	Encr Ex 100	1	9940.2110	212.65
2.97	Encr Ex 100	1	9753.4710	099.13
2.93	Encr Ex 100	1	9740.78	10110.5
2.88	Encr Ex 100	1	9704.6110	069.56
2.84	Encr Ex 100	1	9744.3410	071.14
2.77	Encr Ex 100	1	9677.1310	039.95
2.73	Encr Ex 100	1	9659.7210	040.36
2.69	Encr Ex 100	1	9692.610	380.28
2.64	Encr Ex 100	1	9834.1110	295.76
2.58	Encr Ex 100	1	9801.88	10180
2.52	Encr Ex 100	1	9808.710	182.67
2.46	Encr Ex 100	1	976	210028.43
2.41	Encr Ex 100	1	9845	10135
2.35	Encr Ex 100	1	9906.210	112.41
2.28	Encr Ex 100	1	9966.0710	129.75
2.19	Encr Ex 100	1	9984.19	10238.5
2.13	Encr Ex 100	1	9840	10240
2.08	Encr Ex 100	1	9852.8810	334.75
1.99	Encr Ex 100	1	9913.3510	276.96
1.90	Encr Ex 100	1	9946.1110	566.05
1.84	Encr Ex 100	1	997	010386.92
1.77	Encr Ex 100	1	971	710062.21
1.72	Encr Ex 100	1	9738.01	10070
1.09	Encr Ex 100	1	9552.2410	431.25

FLOW DATA

Flow Title: Stakeholder Existing Cond 100yr
Flow File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SW WMP\Wmp_UT.f03

Flow Data (cfs)

River	Reach	RS	Existing-100yr	Encr Ex 100
Unnamed Trib	Reach 1	3.84	3300	3300
Unnamed Trib	Reach 1	3.65	6500	6500
Unnamed Trib	Reach 1	2.69	8400	8400
Unnamed Trib	Reach 1	1.99	9700	9700

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Unnamed Trib	Reach 1	Existing-100yr		Known WS = 1532.1
Unnamed Trib	Reach 1	Encr Ex 100		Known WS = 1532.1

GEOMETRY DATA

Geometry Title: Stakeholder Alternative Geo for 100yr
Geometry File : p:\82000141\Design Calculations\Hec-Ras\Phase 2\SW WMP\Wmp_UT.g05

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 3.84

INPUT
Description: Using topo added stations 9546.24, 9646.24, and 10346.29.
Station Elevation Data num= 134

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9547.62	1632	9553.35	1631.83	9575.75	1631.15	9580.03	1631.02	9581.49	1630.99
9596.35	1630.8	9601.38	1630.78	9605.66	1630.72	9640.94	1630.1	9641.66	1630.09
9645.57	1630	9648.99	1629.98	9649.33	1629.97	9649.83	1629.96	9650.36	1629.94
9650.92	1629.9	9651.68	1629.91	9654.59	1629.85	9656.59	1629.84	9705.05	1629.11
9710.53	1629.1	9713.24	1629.1	9714.01	1629.09	9715.07	1629.07	9718	1629.06
9721.33	1629	9724.03	1629.04	9724.6	1629.03	9726.16	1629.01	9726.22	1629.01
9726.29	1629	9728.04	1628.95	9729.54	1628.92	9730.04	1628.9	9731.77	1628.82
9732.79	1628.8	9733.11	1628.84	9735.34	1628.74	9737.83	1628.7	9739.64	1628.72
9740.21	1628.7	9742.5	1628.76	9746.82	1628.85	9747.76	1628.85	9752.39	1628.9
9754.89	1628.8	9756.14	1628.82	9757.47	1628.81	9776.96	1628.72	9778.11	1628.71
9779.25	1628.7	9779.46	1628.74	9781.55	1628.85	9783.39	1628.88	9786.22	1628.88
9793.09	1628.8	9795.13	1628.83	9802.11	1628.67	9810.66	1628.48	9821.08	1628.2
9827.94	1628	9838.5	1627.71	9884.12	1626.7	9885.02	1626.68	9886.31	1626.7
9887.55	1626.7	9888.66	1626.73	9890.64	1626.68	9892.03	1626.67	9892.85	1626.6
9894.31	1626.6	9895.79	1626.54	9908.25	1626.34	9920.43	1626.14	9921.69	1626.1
9926.77	1626	9928.9	1626	9930.36	1625.95	9932.06	1625.87	9970.95	1625.45
9978.04	1625.4	9980.97	1624.77	9984.1	1624	9988.54	1622.84	9990.86	1622.31
9991.24	1622.2	9992.08	1622	9992.12	1621.98	9992.19	1621.96	9992.32	1621.93
9992.66	1621.8	9993.14	1621.71	9996.1	1621.71	10000	1621.7	10000.03	1621.69
10008.18	1621.6	10008.47	1621.68	10009.24	1622	10011.12	1622.79	10013.77	1624
10018.17	1625.8	10019.37	1626.11	10037.26	1625.29	10047.9	1624.96	10049.44	1624.92
10051.35	1625.2	10059.96	1626	10067.24	1626.72	10073.87	1627.44	10080.74	1627.6
10094.49	1627.7	10100.26	1627.79	10101.32	1627.8	10105.66	1627.84	10109.98	1627.91
10110.32	1627.9	10110.93	1627.92	10115.06	1628	10120.43	1628.15	10123.11	1628.16
10132.44	1628.4	10168.68	1629.08	10170.63	1629.09	10172.51	1629.1	10174.4	1629.11
10176.49	1629.1	10183.65	1629.25	10201.66	1629.61	10221.63	1630	10263.62	1630.84
10276.28	1631	10282.65	1631.07	10291.14	1631.18	10347.2	1632		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9547.62	.06	9978.04	.045	10019.37	.055	10073.87	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.04	10019.37	285.32	272.62	229.06	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 3.79

INPUT
Description: Using topo added station 9614.73
Station Elevation Data num= 104

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9590.27	1628.3	9602.9	1628	9604.16	1627.98	9620.36	1627.76	9624.4	1627.7
9665.5	1627.2	9684.24	1626.88	9698.29	1626.67	9709.3	1626.5	9721.48	1626.33
9738.26	1626	9769.44	1625.62	9776.29	1625.54	9778.56	1625.52	9784.03	1625.48
9789.61	1625.4	9795.37	1625.37	9836.76	1624.88	9868.14	1624.54	9880.82	1624.39
9886.25	1624.3	9895.46	1624.23	9908.67	1624.12	9918.2	1624	9933.29	1623.72
9945.92	1623.5	9946.84	1623.52	9949.22	1623.61	9953.71	1623.69	9956.7	1623.75
9974.88	1624	9978.6	1624	9978.8	1624	9980.05	1624	9981.73	1624
9982.48	1624	9983.25	1623.99	9983.71	1623.99	9991.13	1622.6	9994.01	1622.06
9994.35	1622	9995.06	1621.86	9996.25	1621.64	9996.4	1621.65	9997.57	1621.82
10000	1621.5	10012.17	1621.19	10014.72	1621.05	10018.99	1622	10027.25	1623.8
10027.65	1623.88	10028.31	1624	10029.5	1624.23	10029.62	1624.3	10030.41	1624.23
10033.95	1624.17	10038.65	1624.02	10043.77	1624	10044.76	1624	10048	1624
10049.51	1624	10049.59	1624	10050	1624	10057.25	1624	10061.47	1624
10061.84	1624	10063.95	1623.99	10065.32	1623.97	10065.69	1624	10065.82	1623.96
10069.25	1623.55	10074.63	1622.97	10079.66	1623.69	10081.88	1624	10082.28	1624.07
10083.24	1624.2	10084.33	1624.01	10084.4	1624	10085.07	1624	10102.87	1623.77
10104.08	1623.78	10104.98	1623.8	10105.83	1623.8	10107.51	1623.9	10108.72	1624
10116.25	1624.48	10121.37	1624.89	10127.22	1625.32	10134.88	1625.9	10136.79	1625.99
10139	1626.15	10139.5	1626.17	10140.3	1626.2	10141.38	1626.2	10146.87	1626.22
10169.18	1626.52	10175.02	1626.66	10181.3	1626.82	10188.18	1627	10201.25	1627.32
10225.71	1628	10261.38	1629.3	10280.67	1630	10281.16	1630		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9590.27	.06	9983.71	.045	10029.62	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.71	10029.62	184.88	180.77	123.11	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 3.76

INPUT
Description: Using topo added station 9499.97.
Station Elevation Data num= 121

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9481.34	1626.9	9484.55	1626.93	9487.74	1626.92	9489.59	1626.91	9490.07	1626.91
9490.31	1626.9	9491.64	1626.9	9492.64	1626.9	9493.46	1626.89	9494.1	1626.89

```
 9519.07  1626.7 9523.06 1626.65  9528.4 1626.63 9535.47  1626.6 9540.35 1626.59
 9541.28  1626.6  9687.7    1626 9705.14    1626 9711.12    1626 9734.19    1626
 9741.38    1626 9744.75    1626 9767.63    1626 9770.85    1626 9771.24    1626
 9772.51    1626 9772.92    1626 9779.47 1625.89 9792.03  1625.7 9800.72 1625.58
 9814.95  1625.3 9820.17 1625.25  9824.5 1625.17 9830.17 1624.97 9835.05 1624.79
 9837.91  1624.7 9840.16  1624.6 9857.01    1624 9885.39 1622.83 9885.89 1622.81
  9885.9  1622.8 9886.69  1622.8 9896.59 1622.73 9900.58 1622.68 9922.74 1622.61
 9943.75  1622.5 9962.49  1622.4 9962.54 1622.38 9965.43 1622.46 9967.81 1622.57
 9970.42  1622.6 9973.45 1622.72 9977.47 1622.79 9978.33 1622.81 9981.25 1622.86
 9981.36  1622.8 9982.03 1622.79 9982.58 1622.73 9987.12    1622 9997.13 1620.49
  9997.9  1620.4 9999.17  1620.2  9999.5 1620.15   10000  1620.410003.52 1620.64
10004.82  1620.810007.48 1621.1310014.38    162210015.32 1622.12 10015.7 1622.16
10016.45  1622.310018.57 1622.5110024.03 1623.1710024.64 1623.1710027.96 1623.19
10030.03  1623.210031.92 1623.1610033.79 1623.1510035.09 1623.1610036.49 1623.15
10037.98  1623.110039.52 1623.0710084.38 1623.6910086.07 1623.6910094.76 1623.57
10094.95  1623.610094.97 1623.5410096.42 1623.3110104.61    162210107.02 1621.63
10107.67  1621.510108.93 1621.3310111.22 1621.6910112.24 1621.8610113.25    1622
10119.93  1623.110121.86 1623.3510129.04 1623.3210152.87 1623.1610162.89 1622.01
10163.04    162210163.08 1621.9910166.37 1621.6110173.52 1621.9610174.54    1622
10183.96  1622.410184.87 1622.4810186.03 1622.54   10188 1622.6510191.13 1622.65
10194.32  1622.610202.68 1622.6210208.96  1623.210217.57    162410221.14 1624.33
10227.03  1624.810240.39 1625.2510263.15    162610276.76 1626.5110316.03    1628
10317.87  1628.1

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9481.34     .06 9981.25    .04510024.03     .0610094.97    .04510121.86    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9981.2510024.03           161.68  172.64  149.88             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 3.73

INPUT
Description: Using topo added station 9718.78.
Station Elevation Data     num=      131
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9675.66  1625.9 9681.38 1625.93 9686.88  1625.9 9690.76 1625.83 9705.38    1626
 9708.82    1626 9715.78    1626 9718.92    1626 9721.46    1626 9740.16    1626
 9742.37    1626 9747.58    1626 9750.02    1626  9752.7    1626  9756.1    1626
 9775.89    1626 9778.51    1626 9780.26    1626 9817.55 1625.48    9828 1625.42
 9833.79  1625.4 9840.61 1625.29 9906.56 1624.49 9906.62 1624.49 9906.74 1624.48
 9908.68  1624.3 9915.06    1624 9919.71 1623.68 9919.77 1623.67  9923.4 1623.34
  9927.8  1622.9 9929.09 1622.82 9930.83 1622.74 9938.25    1622 9947.01 1621.03
  9957.4    1620 9960.71 1619.66  9960.9 1619.64 9961.62 1619.75 9963.53    1620
 9967.01  1620.5 9970.21 1620.98  9972.1 1621.24 9973.52 1621.46 9980.55 1621.67
 9986.19  1621.8 9990.94 1620.75 9992.11 1620.47 9994.03    1620  9995.4 1619.68
 9998.78  1618.9   10000 1619.1110000.85 1619.3410002.13  1619.510002.99 1619.63
10005.65    162010010.78  1620.710011.71 1620.8410014.25 1621.2810017.34 1621.81
10020.12  1621.810020.47 1621.8310021.25 1621.8310025.98 1621.8710028.12 1621.85
10032.44  1621.810037.65 1621.7910043.68 1621.6610046.05 1621.6310051.89 1621.57
10052.45  1621.610056.95 1621.4810058.94 1621.3710059.12 1621.3510059.27 1621.34
10059.44  1621.310062.48 1621.2110063.22 1621.1810064.18 1621.1410064.98  1621.1
10069.41  1620.910071.32 1620.8310075.12 1620.6710079.93 1620.4210081.33 1620.36
10082.65  1620.310088.69 1619.9410089.18 1619.9410090.07 1620.0510092.89 1620.27
10106.65  1621.210106.94 1621.2910107.41 1621.2810108.77 1621.4110110.32 1621.55
10111.43  1621.610112.53  1621.610113.35 1621.6210113.97 1621.6310114.62 1621.64
10135.94  1621.610142.25 1621.4610146.16 1621.37 10154.5  1620.510160.76    1620
10162.65  1619.810163.42 1619.7810164.78 1619.8610165.38 1619.96 10165.7 1619.95
10172.18  1619.510175.11 1619.31   10181 1619.0210181.12 1619.0110181.27    1619
10181.38    161910188.17    162010190.13 1620.3410192.94  1620.910195.23  1620.9
10205.45    162210205.88    162210206.86 1622.1110210.98  1622.510222.39 1623.46
10238.49  1623.910243.06    162410249.27 1624.3210256.25 1624.5910287.51    1626
10300.75  1626.4

Manning's n Values         num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9675.66     .06 9986.19    .04510017.34     .0610111.43    .0610146.16    .045
10192.94    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9986.1910017.34           177.18  267.76  153.48             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 3.70

INPUT
Description:
Station Elevation Data     num=       78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
 9655.33  1624.4 9669.94 1624.32 9672.79 1624.31 9674.01 1624.31  9681.2 1624.29
 9696.22  1624.3 9701.69 1624.25 9705.42 1624.24 9714.58 1624.21    9739 1624.15
 9785.01    1624 9785.03    1624 9785.05    1624 9785.09    1624 9785.28    1624
 9786.59    1624 9787.43 1623.94 9792.42 1623.59 9801.24 1623.11 9807.49 1622.75
 9820.35    1622 9823.02 1621.83 9845.62    1620 9850.17 1619.54 9851.38  1619.4
 9864.06  1619.6 9876.28 1619.82 9879.85 1619.88 9881.47 1619.91 9882.01 1619.93
 9886.21    1620 9900.86 1620.02 9900.87 1620.02 9902.51 1620.03 9903.23 1620.03
  9904.8    1620 9923.72    1620 9929.04 1619.89 9929.34 1619.88 9929.69 1619.87
 9930.05  1619.9 9930.74 1619.84 9931.36 1619.83 9932.25 1619.81 9933.29 1619.78
 9934.54  1619.8 9940.84 1619.59 9964.99    1619 9969.09 1618.87 9977.45 1618.61
 9979.89  1618.5 9980.22 1618.47 9980.88 1618.37 9982.69    1618 9988.63 1616.72
  9992.2    1616 9994.05 1615.65 9994.63 1615.54   10000  1615.6 10001.9 1615.71
10005.12  1615.810005.34 1615.8710005.55    161610012.52 1617.5310014.51    1618
10015.25  1618.210027.24 1619.7610029.42    162010032.77 1620.38 10040.9 1621.22
10047.39    162210051.06 1622.4110053.68  1622.710062.22 1623.0810081.72    1624
10127.18  1625.510136.11 1625.81 10141.1 1625.97

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9655.33     .06 9923.72     .06 9979.89    .04510053.68    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9979.8910053.68            195.28  254.18  297.16             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.65

INPUT
Description: Using topo added 10242.93.
Station Elevation Data    num=      87
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9713.47  1623.9 9731.48 1623.46 9738.83 1623.26 9744.52 1623.11 9776.96    1622
  9787.4  1621.6 9792.39 1621.47 9793.97 1621.41 9794.59 1621.36 9797.03 1621.12
 9810.45    1620 9815.51 1619.37 9821.56 1618.62 9826.34    1618 9832.98 1617.19
 9833.66  1617.1 9835.59 1617.27 9850.19 1617.89 9851.47 1617.95 9851.91 1617.97
 9852.08    1618  9852.2 1617.98 9852.31 1617.98 9852.95    1618 9866.35 1618.11
  9872.5  1618.1 9890.58    1618 9904.88 1617.73 9905.67 1617.72 9906.66 1617.71
 9907.83  1617.7 9909.12 1617.67 9911.04 1617.64 9912.27 1617.63 9913.33 1617.61
 9925.81  1617.4 9927.77 1617.38 9929.08 1617.35 9932.79 1617.27 9940.27 1617.09
 9945.35    1617 9945.57 1616.97 9947.32 1617.11 9960.13    1618  9962.1 1618.14
 9965.17  1618.3 9965.28 1618.31 9965.62 1618.23 9966.77    1618 9974.72  1616.3
 9976.01    1616 9976.38 1615.92  9980.5 1615.07 9981.24  1615.1 9986.72 1615.32
  9991.3  1614.9 9992.81 1614.65 9993.77 1614.48   10000 1614.2610000.48 1614.26
10007.75    161410008.25 1613.9810009.22 1613.9710009.36 1613.95 10009.4 1613.95
10009.88  1614.110017.21    161610022.28 1617.2410025.26    161810026.93 1618.42
10028.42  1618.610028.68 1618.6110029.36 1618.6510032.71 1618.5710034.18 1618.54
10093.87  1619.810101.48    162010104.01 1620.09 10157.3 1621.89 10157.4 1621.89
10157.65  1621.910163.65    162210164.22    162210167.89 1622.0210213.54 1623.22
10226.53  1623.5   10242    1624

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9713.47     .06 9866.35     .06 9965.28    .04510029.36    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9965.2810029.36            198.65  205.64  187.36             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.61

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9825.74    1622 9880.74  1620.1 9882.83 1620.01 9883.22    1620 9904.72 1618.89
  9909.6 1618.74 9912.48  1618.3 9913.69 1618.22 9914.26 1618.17 9917.09    1618
  9948.8 1616.23 9953.45    1616    9959 1615.67 9962.52 1615.48 9967.86 1615.64
 9979.07 1615.95 9981.37  1615.2  9985.3    1614 9988.92 1612.84 9991.59    1612
 9993.25 1611.42 9993.66  1611.310001.69 1611.9210002.35 1611.9710002.49 1611.98
10002.56 1611.9910002.72    161210002.79 1612.0110002.84 1612.01 10002.9 1612.01
10006.32 1612.28   10007  1612.310007.06 1612.3410010.84 1613.0410015.61    1614
10021.56 1615.1410023.82  1615.510024.19 1615.6210025.84    161610026.77 1616.17
10028.21 1616.4510034.05  1616.310093.37 1617.51 10094.6 1617.5110101.45 1617.79
10107.32    1618 10119.8  1618.3 10126.4 1618.5110129.49 1618.5910164.86    1620
10189.14 1620.7410198.98    162110219.07 1621.6910222.91 1621.81

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9825.74     .06 9979.07    .04510028.21    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
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       9979.0710028.21            390.89   389.3  386.91              .1        .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 3.54

INPUT
Description:
Station Elevation Data     num=      87
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
 9832.04     1622 9832.05     1622 9866.89 1620.82 9892.47     1620 9912.33 1618.81
 9926.26     1618 9939.21   1617.1  9941.3 1616.94 9943.94 1616.75 9946.26 1616.57
 9954.21     1616 9955.05 1615.99 9955.06 1615.99 9955.11 1615.99 9959.09 1615.46
 9971.85     1614 9977.15 1613.02 9979.33 1612.45 9979.81 1612.37 9981.48     1612
 9991.46   1610.2 9992.52     1610 9992.92 1609.94 9993.18 1609.89 9999.18     1610
 9999.42     1610 9999.45     1610   10000     161010003.75     161010004.36     1610
10005.93     1610 10007.7     161010008.63 1610.0610012.15 1610.2210012.65 1610.25
10020.81   1611.310027.35     161210033.89     161310035.57 1613.2910038.15 1613.68
 10038.3   1613.710040.99 1613.9210041.29 1613.9410042.62     161410043.84     1614
10046.26   1613.910048.79 1613.7710052.42 1613.8310053.62 1613.8210054.17   1613.8
10054.86   1613.810075.39 1613.7710084.07 1613.7810099.34     161410102.85     1614
 10105.8     1614 10114.6 1613.8610115.52 1613.8510122.68 1613.8210133.95 1613.68
10134.27   1613.710134.44 1613.6810134.51 1613.6810134.56 1613.6810140.57     1614
10144.52   1614.210149.28 1614.5210158.52 1614.6410160.18 1614.6510162.26 1614.67
10165.31   1614.710169.11 1614.8110175.79 1614.9710189.17 1615.2810189.19 1615.28
10193.93   1615.810195.26 1615.9610195.63     161610201.93 1616.5710221.65     1618
10221.69     161810221.74     161810239.22 1618.9410244.72 1619.1910257.25 1619.59
10260.81   1619.710268.12 1619.99

Manning's n Values         num=        3
     Sta   n Val      Sta   n Val      Sta   n Val
 9832.04     .06 9955.05    .04510042.62    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9955.0510042.62            435.96  440.05  442.16              .1        .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 3.46

INPUT
Description:
Station Elevation Data     num=      67
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
 9842.22   1617.9 9861.63 1617.15 9889.72     1616 9925.71 1614.04 9926.49     1614
 9931.41   1613.7 9946.39 1612.61  9948.8 1612.35 9950.56 1612.16 9952.02     1612
 9959.18   1611.2 9964.66 1610.64 9969.13 1610.23 9971.96     1610 9976.94 1609.61
 9979.06   1609.4 9980.67 1608.81 9982.76     1608 9986.86  1606.4 9987.92     1606
 9988.43   1605.8 9989.12 1605.57 9989.96 1605.47 9990.94 1605.26    10000 1605.37
10005.42   1605.510009.65  1605.610010.06  1605.710010.85 1605.8810011.07 1605.94
10011.17     160610011.21 1605.9710011.23 1605.98 10011.3     160610012.09 1606.19
10019.54     1608 10021.1  1608.410027.91     161010029.48 1610.4210030.23 1610.66
 10030.3   1610.710030.36 1610.6610030.46 1610.6710030.55 1610.6510034.43 1610.81
10035.73   1610.8 10106.9 1610.54 10110.9 1610.5810110.91 1610.5810110.96 1610.58
10110.98   1610.610112.79 1610.9710113.98 1611.1910119.67     161210134.56   1613.4
10141.54     161410153.74     161510165.85     161610171.58 1616.4210181.15   1617.1
 10192.5     161810196.91 1618.2710198.61 1618.35 10200.7 1618.4610211.23 1619.16
10228.12     162010229.27 1620.03

Manning's n Values         num=        3
     Sta   n Val      Sta   n Val      Sta   n Val
 9842.22     .06 9979.06    .045 10030.3    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9979.06 10030.3            267.6  296.32  322.93              .1        .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 3.40

INPUT
Description:
Station Elevation Data     num=      63
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
 9781.06     1616 9822.91 1614.86 9854.08     1614 9869.67 1613.19 9872.55 1613.09
 9877.05   1612.9  9883.4 1612.62 9896.85     1612 9912.11 1611.34 9913.25 1611.29
 9914.75   1611.1 9916.06 1610.91 9917.43 1610.67 9918.22 1610.54 9918.76 1610.47
 9922.45     1610 9926.53 1609.41 9930.32 1608.89 9939.23 1609.09 9968.21 1608.92
 9970.35   1608.8 9970.57 1608.76 9971.46 1608.56 9973.61     1608 9981.86 1606.16
 9982.41     1606 9983.01 1605.84 9983.21   1605.8 9984.73 1605.47  9987.2 1604.93
 9994.96   1604.6    10000 1604.3510003.63  1604.110006.33 1604.7110012.22     1606
10019.07   1607.510020.95 1607.9610021.82 1607.9810022.45     160810032.47 1608.15
10043.27   1608.310060.77 1608.5310064.37 1608.5810069.85 1608.6610076.75 1608.75
10085.89   1608.910096.09 1609.0310107.37 1609.1610118.92 1609.3110133.36 1609.51
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10142.19  1609.610143.27 1609.8110144.07 1609.9110144.74    161010154.75 1611.41
10159.23    161210162.87 1612.4810174.31    161410182.95 1615.0910191.93    1616
10213.93  1617.910215.48    161810216.09 1618.04

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9781.06     .06 9970.35    .04510020.95    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9970.3510020.95           401.74  459.84  480.49             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.31

INPUT
Description:
Station Elevation Data    num=      99
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9676.2    1614 9680.19 1613.76 9709.76    1612 9736.92 1610.19  9739.8    1610
 9742.92  1609.7 9764.99    1608 9768.82 1607.67 9770.17 1607.55 9772.58 1607.34
 9773.04  1607.3 9775.74 1606.88 9779.73 1606.25 9780.45 1606.13 9781.38    1606
 9782.88  1605.8  9783.5 1605.71 9787.85 1605.11 9791.87 1604.52 9793.53 1604.67
 9796.81  1604.9 9810.28    1606 9811.65 1606.11 9819.15 1606.68 9821.55 1606.85
 9824.44  1607.1 9835.38 1606.93 9840.19 1606.88 9850.46 1606.78 9856.89  1606.7
 9869.42  1606.6 9869.77 1606.61 9871.18 1606.67  9872.8 1606.73 9880.81 1607.04
 9895.41  1607.6 9899.08 1607.74 9901.23 1607.83 9902.48 1607.88 9905.63 1607.99
 9906.41    1608  9908.4 1608.08 9909.55 1608.12 9910.37 1608.06 9911.46    1608
 9924.21    1607 9928.31 1606.68 9931.42 1606.87 9948.97 1607.99 9959.39  1607.3
 9973.52  1606.3 9973.89 1606.25  9974.8    1606 9977.21 1605.38 9983.02    1604
 9984.35  1603.7 9991.03 1602.03 9991.36 1602.02 9994.22    1602 9994.47    1602
 9994.64    1602 9995.28    1602 9998.94 1601.99 9999.14 1601.98 9999.48 1601.98
   10000    160210001.81 1601.9710002.81 1601.95 10005.6 1601.9310007.24 1601.91
 10007.3  1601.910007.44 1601.9510007.49 1601.9710007.51 1601.97 10007.6    1602
10011.16  1602.810013.02 1603.2810013.89 1603.4810015.73    160410017.05 1604.35
10018.49  1604.710021.06 1605.27 10023.7 1605.4310026.04 1605.5410030.24 1605.79
10034.49    160610039.47 1606.3110041.37 1606.3910044.87 1606.5510054.05 1607.04
10054.74  1607.210060.93    160810075.76 1609.8710076.85    161010077.71 1610.11
 10086.5  1611.110093.46    161210111.83 1613.3910117.39 1613.82

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
  9676.2     .06 9824.44     .06 9948.97    .04510021.06    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9948.9710021.06           366.29  396.52  408.42             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 3.24

INPUT
Description:
Station Elevation Data    num=     103
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9673.96  1611.8 9678.05 1611.57 9692.16 1610.84 9699.23 1610.46 9703.12 1610.25
 9708.57    1610 9712.93 1609.78 9714.11 1609.72 9717.62 1609.42 9723.36 1608.95
 9726.71  1608.7 9729.48 1608.48 9734.86    1608 9750.09 1606.62 9758.23    1606
 9766.89  1605.3 9776.95 1604.62 9783.83 1604.51 9797.28 1604.37 9803.88 1604.29
 9808.36  1604.2 9811.41  1604.2 9813.04 1604.18 9829.43 1604.11 9830.32  1604.1
  9831.2  1604.1 9843.48    1604 9843.89    1604 9844.27    1604 9844.51    1604
 9844.71    1604 9845.24 1604.01 9853.85    1604 9854.05 1604.01 9854.31 1604.01
 9854.61    1604    9855 1604.01 9863.17 1604.01 9863.54 1604.01 9864.07 1604.01
 9864.97    1604 9866.17 1604.03  9872.5 1604.04  9873.7 1604.05 9876.09 1604.07
 9878.41  1604.1 9879.64 1604.08 9881.25 1604.06 9881.32 1604.06 9881.97 1604.06
 9883.98  1604.1 9887.35 1604.05    9890 1604.04  9891.9 1604.03 9893.38 1604.03
 9893.98    1604  9899.8 1604.04 9904.24 1604.03 9910.18 1604.03 9928.59    1604
 9928.85    1604 9933.04 1603.91 9938.01 1603.83 9939.58  1603.8 9941.29 1603.78
  9943.9  1603.7 9948.55 1603.66 9959.88 1603.48 9973.11 1603.28 9973.99 1603.11
 9975.75  1602.8 9979.71    1602 9987.59 1600.51 9988.71 1600.29  9990.2    1600
 9990.23    1600 9990.28    1600 9990.31    1600 9990.36    1600 9990.39 1599.99
   10000  1599.510001.57 1599.1910007.25 1598.77 10010.5 1599.7510011.11 1599.93
 10011.2    160010011.36    160010011.59 1600.0710018.18    160210022.16 1603.22
10024.71    160410031.27 1605.9710031.38    160610031.67 1606.0910037.96    1608
10039.98  1608.610040.75 1608.78 10042.5 1608.9210045.83 1609.2910051.54    1610
10064.92    161110066.63 1611.0610082.61 1611.91

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9673.96     .06 9973.11    .04510037.96    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9973.1110037.96           445.59  479.85  469.13             .1       .3
```

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 3.15

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9820.3	1608	9820.79	1607.94	9821.15	1607.92	9822.35	1607.87	9839.11	1607.07
9844.55	1606.1	9844.88	1606	9845.28	1605.93	9855.6	1604	9862.8	1602.65
9866.24	1602	9868.49	1601.62	9870.18	1601.27	9872.04	1600.93	9887.02	1600.67
9910.46	1600.3	9918.28	1600.12	9920.44	1600.09	9921.42	1600.08	9922.06	1600.07
9922.61	1600.1	9923.08	1600.04	9925.55	1600	9927.02	1599.92	9928.01	1599.86
9929.86	1599.8	9938.74	1599.28	9955.09	1598.41	9964.39	1599.14	9968.9	1599.49
9973.61	1598.9	9980.11	1598	9982.26	1597.73	9982.89	1597.65	9984.32	1597.45
9989.37	1596.8	9994.68	1596.49	9997.69	1596.35	9997.77	1596.35	9998.95	1596.29
10000	1596.2	10004.74	1596.08	10006.72	1596.02	10006.76	1596.01	10006.79	1596.02
10009.7	1596.8	10012.15	1597.41	10013	1597.62	10013.35	1597.71	10014.43	1598
10015.54	1598.3	10021.82	1600	10022.74	1600.17	10022.97	1600.25	10028.6	1600.29
10031.38	1600.3	10038.87	1600.35	10046.79	1600.41	10048.54	1600.43	10054.87	1600.48
10069.19	1601.2	10076.5	1601.54	10084.17	1601.92	10097.2	1601.52	10105.26	1601.28
10113.95	1601	10121.18	1601.76	10123.51	1602	10124.89	1602.14	10144.88	1604
10167.81	1605.8	10171.27	1606	10171.58	1606.02				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9820.3	.06	9925.55	.06	9968.9	.045	10022.97	.055	10084.17	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.9	10022.97	273.66	262.05	262.19	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 3.10

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9880.28	1606.7	9895.92	1606	9917.66	1604.89	9936.16	1604	9948.43	1603.09
9953.69	1602.8	9955.79	1602.75	9957.62	1602.49	9960.25	1602	9967.79	1600.37
9969.79	1600	9977.62	1598.33	9978.58	1598.13	9979.22	1598	9981.06	1597.66
9988.42	1596	9993.95	1594.82	9995.65	1594.45	10000	1594.47	10002.27	1594.5
10019.23	1594.6	10019.43	1594.65	10025.76	1596	10034.26	1597.87	10035.08	1598
10035.44	1598.1	10035.56	1598.09	10051.35	1598.56	10052.61	1598.6	10053.19	1598.63
10092.88	1599	10110.75	1599.17	10110.87	1599.17	10111.06	1599.15	10116.13	1599.29
10119.98	1599.3	10160.06	1599.58	10161.97	1599.55	10164.26	1599.53	10166.12	1599.5
10167.8	1599.5	10169.82	1599.44	10171.8	1599.38	10174.38	1599.33	10177.04	1599.3
10182.78	1599.2	10194.36	1599.03	10204.43	1598.86	10211.11	1599.62	10213.2	1599.85
10214.54	1600	10220.38	1600.63	10232.75	1602	10255.08	1603.49	10262.58	1604
10295.06	1606	10295.23	1606	10295.49	1606.01	10296.1	1606.04	10308.93	1606.65

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9880.28	.06	9955.79	.045	10035.44	.055	10160.06	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9955.79	10035.44	253.81	246.77	218.34	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 3.05

INPUT
Description:
Station Elevation Data num= 87

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9849.61	1606	9850.27	1606	9861.43	1605.45	9891.18	1604	9904.39	1603.23
9924.58	1602	9938.23	1601.02	9953.54	1600	9954.65	1599.92	9955.97	1599.83
9957.53	1599.7	9964.22	1599.08	9974.23	1598.18	9974.43	1598.12	9974.98	1598
9982.07	1596.1	9982.37	1596	9982.62	1595.93	9990.08	1594	9992.28	1593.42
9997.43	1592	9997.52	1591.95	9998.05	1591.79	9998.27	1591.8	9998.35	1591.8
9998.5	1591.8	10000	1591.91	10009.58	1592	10011.48	1592.03	10013.48	1592.07
10021.26	1593.8	10021.92	1594	10022.27	1594.08	10030.95	1596	10031.32	1596.34
10032.48	1596.4	10033.45	1596.35	10042.55	1596	10048.3	1595.75	10052.63	1595.59
10058.63	1595.7	10073.06	1596	10081.34	1596.17	10085.38	1596.26	10091.67	1596.37
10092.53	1596.4	10097.91	1596.66	10102.31	1596.9	10103.49	1596.94	10119.44	1597.36
10121.09	1597.3	10123.29	1597.31	10126.39	1597.25	10129.35	1597.22	10133.19	1597.14
10137.53	1597.1	10140.94	1597.11	10144.71	1597.15	10149.62	1597.24	10151.84	1597.26
10153.28	1597.3	10159.47	1597.46	10163.13	1597.4	10166.31	1597.34	10173.12	1597.24
10175.49	1597.2	10182.56	1597.06	10182.82	1597.09	10183.16	1597.14	10187.19	1597.63
10188.31	1597.8	10188.92	1597.86	10189.22	1597.88	10189.34	1597.9	10189.53	1597.92
10190.17	1598	10197.29	1598.95	10200.64	1599.4	10202.83	1599.7	10205.25	1600

```
 10206.1  1600.110215.66 1601.2510222.02    160210224.05 1602.2410238.91    1604
10259.04  1605.410263.88 1605.79

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9849.61     .06 9974.23    .04510032.48    .05510119.44    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9974.2310032.48           462.57  427.28  371.63             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.97

INPUT
Description:
Station Elevation Data    num=      77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9714.04    1600 9716.35 1599.79 9719.13 1599.65 9727.11 1599.15 9735.06 1598.88
 9736.58  1598.8 9736.73 1598.82 9739.55  1598.6 9740.84  1598.5 9742.52 1598.34
 9743.71  1598.2 9746.07    1598 9760.52 1596.66 9767.82    1596 9771.97 1595.63
 9772.68  1595.6 9776.59 1595.61 9783.09 1595.68 9789.38 1595.72 9789.86 1595.72
 9794.24  1595.8 9797.25 1595.77 9799.42 1595.79 9799.93 1595.78 9859.86 1595.38
 9860.94  1595.4 9863.09 1595.36  9865.5 1595.34 9865.88 1595.34 9866.37 1595.34
 9878.95  1595.2 9880.14 1595.17 9881.22 1595.15  9885.3 1595.08 9890.82 1595.02
 9942.98  1594.4 9943.75 1594.35 9944.25 1594.35 9944.94 1594.34 9945.23 1594.34
 9945.69  1594.3 9945.91  1594.3 9946.11  1594.3 9955.14 1594.34 9969.97 1594.35
 9972.53  1594.4 9975.61 1594.35 9976.14 1594.22 9977.07    1594 9983.59 1592.18
 9984.19    1592 9984.71 1591.87 9985.11 1591.76 9988.58 1590.82   10000 1590.87
10001.75  1590.910008.75 1591.0210016.26 1591.0810016.67 1591.1510021.18    1592
10025.73  1592.910026.12 1592.9910039.09 1593.3710057.28 1593.8810057.36 1593.88
10058.06    1594 10058.1 1593.9610058.62    159410068.47  1594.810075.85 1595.38
10084.12    1596 10092.7 1596.7910107.53    159810123.03 1599.4410128.94    1600
10132.03  1600.210151.91    1602

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9714.04     .06 9975.61    .04510026.12    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9975.6110026.12           258.19  218.23  157.54             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.93

INPUT
Description:
Station Elevation Data    num=     121
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9624.57    1600 9636.55 1599.38 9664.53 1598.02 9665.18 1598.01 9665.67 1598.01
  9675.5    1598 9675.63    1598 9675.81    1598 9676.82 1598.01 9678.81    1598
 9679.31    1598 9680.21 1597.96 9683.21 1597.84 9703.33 1596.98 9719.13 1596.22
 9719.52  1596.2 9720.93 1596.21 9721.86 1596.21  9722.2 1596.21 9724.54 1596.14
 9728.67    1596 9733.41 1595.85 9733.96 1595.84 9734.06 1595.83 9734.66 1595.79
 9734.67  1595.8 9735.12 1595.76 9737.83 1595.82 9738.69 1595.74 9741.24 1595.62
 9744.38  1595.4    9748 1595.02 9749.76 1594.86 9750.66 1594.77 9752.52 1594.64
 9753.89  1594.6 9762.35 1594.21 9762.68  1594.2 9767.04    1594 9769.79 1593.84
 9770.34  1593.8 9770.92  1593.8 9772.39 1593.69 9790.42 1593.42 9790.61 1593.44
  9792.3  1593.4    9816 1593.36 9825.21 1593.31 9825.89 1593.31 9827.96 1593.29
 9829.09  1593.3 9830.92 1593.26 9831.87 1593.26 9843.02 1593.09 9850.52 1592.03
 9850.73    1592 9851.86 1591.84 9854.95 1591.42 9859.56 1590.79 9859.75 1590.79
 9878.33  1591.9 9879.42 1591.94 9879.66 1591.96 9880.64    1592 9880.85 1592.01
 9881.21    1592 9883.08 1592.23 9887.88 1592.68 9888.13  1592.7 9888.32 1592.71
 9888.77  1592.7 9913.68 1592.56 9913.93 1592.57  9914.1 1592.54 9916.69    1592
 9917.55  1591.8 9919.49 1591.32 9922.63 1590.76 9947.72 1591.15 9954.32 1591.25
 9963.42  1591.4 9968.22 1591.19 9992.93    1590 9999.27 1589.69   10000 1589.62
10001.36  1589.6 10006.3 1589.9210007.36    1590 10014.9 1590.5710016.79  1590.7
10018.89  1590.810021.72 1591.0310031.05 1591.76 10031.8 1591.8210033.19 1591.93
10033.22  1591.910034.94    1592 10035.7 1592.03   10036 1592.0310036.15 1592.03
10036.24    159210037.58    159210057.78 1592.0910084.83 1592.25 10088.4 1592.27
10089.12  1592.410094.67 1593.2410099.68    159410106.59 1595.0410112.82    1596
10117.63  1596.710125.96    159810136.76 1599.3510142.36    160010159.03 1601.57
10163.57    160210166.91 1602.2910174.84 1603.0710184.63    160410185.87 1604.11
10186.86  1604.2

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9624.57     .06 9719.13     .06 9843.02    .045 9888.32     .06 9963.42    .045
   10036    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9963.42   10036           297.95  238.37  236.36             .1       .3
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CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 2.88

INPUT
Description:
Station Elevation Data num= 103

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9647.56	1595.8	9667.46	1594.43	9674.61	1594	9685.39	1593.48	9694.21	1593.07
9717.79	1592	9718.09	1592.01	9718.41	1592.02	9718.42	1592.01	9718.55	1591.99
9727.93	1590	9733.13	1588.9	9737.45	1588	9739.98	1587.44	9740.63	1587.28
9743.2	1587.5	9746.06	1587.77	9746.4	1587.81	9746.61	1587.83	9747	1587.91
9747.2	1588	9747.28	1588	9755.61	1589.96	9755.8	1590	9755.88	1590.02
9756.96	1590.3	9777.19	1590.61	9797.64	1590.92	9802.16	1590.48	9806.84	1590
9811.92	1589.5	9814.02	1589.28	9821.62	1589.43	9830.99	1589.6	9835.58	1589.96
9836.07	1590	9836.73	1590.05	9837.18	1590.08	9839.83	1590.3	9849.87	1591.13
9852.33	1591.1	9853.05	1591.11	9861.56	1591.09	9867.72	1591.08	9875.99	1591.01
9876.42	1591	9877.04	1591.01	9907.24	1591.09	9907.29	1591.1	9911.68	1590.78
9919.93	1590.2	9920.7	1590.1	9921.28	1590.06	9936.68	1591.47	9937.06	1591.5
9937.93	1591.5	9973.79	1590	9977.85	1589.81	9981.34	1589.62	9985.07	1589.13
9991.77	1588.3	9993.92	1588	9997.72	1587.5	10000	1587.15	10003.19	1586.76
10007.84	1586.8	10013.24	1586.88	10014.17	1587.05	10015.23	1587.29	10019.11	1588
10024.53	1589.1	10027.03	1589.55	10027.56	1589.67	10027.78	1589.67	10028.69	1589.67
10032.94	1589.7	10035.01	1589.79	10035.92	1589.8	10044.64	1589.89	10047.56	1589.86
10051.64	1589.9	10053.46	1589.82	10053.78	1589.82	10054.53	1589.96	10054.66	1589.99
10054.75	1590	10056.17	1590.23	10064.04	1591.68	10065.8	1592	10066.29	1592.08
10078.42	1594	10080.64	1594.33	10091.97	1596	10104.98	1597.88	10105.78	1598
10106.73	1598.1	10108.08	1598.18	10109.41	1598.26	10109.52	1598.27	10111.4	1598.63
10120.7	1599.2	10123.8	1599.53	10130.44	1600				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9647.56	.06	9717.79	.045	9756.96	.06	9849.87	.06	9981.34	.045
10027.56	.055								

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.34	10027.56	237.82	234.26	230.56	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 2.84

INPUT
Description:
Station Elevation Data num= 127

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9636.75	1594	9648.26	1593.68	9649.08	1593.67	9650	1593.65	9665.67	1593.3
9677.27	1593	9684.09	1592.87	9717.64	1592.09	9720.99	1592	9754.36	1590.16
9756.7	1590	9757.43	1590	9758.91	1589.81	9763.93	1589.09	9767.23	1588.69
9770.22	1588.4	9774.99	1588	9777.07	1587.81	9777.84	1587.75	9783.73	1587.43
9784.71	1587.4	9787.56	1587.23	9790.24	1587	9795.92	1586.51	9798.98	1586.27
9800.3	1586.2	9801.37	1586.17	9802.15	1586.17	9802.99	1586.17	9803.27	1586.16
9803.61	1586.2	9804.24	1586.14	9806.64	1586.18	9807.8	1586.17	9810.38	1586.16
9811.44	1586.1	9812.71	1586.08	9814.62	1586	9816.72	1585.9	9818.33	1585.85
9820.05	1585.8	9823.22	1585.62	9828.18	1585.44	9832.24	1585.25	9835.88	1585.09
9837.34	1585	9840.21	1584.99	9841.86	1584.95	9845.15	1584.84	9846.49	1584.8
9848.8	1584.7	9850.37	1584.95	9852.49	1585.19	9858.06	1586	9859.01	1586.16
9864.07	1586.8	9874.47	1588	9877.45	1588.38	9877.59	1588.39	9884.14	1588.36
9887.92	1588.3	9888.94	1588.33	9889.85	1588.33	9909.35	1588.23	9911.21	1588.24
9914.4	1588.2	9919.85	1588.27	9923.44	1588.27	9925.08	1588.1	9925.97	1588
9929.34	1587.7	9932.78	1587.31	9935.71	1587.42	9940.12	1587.61	9951.11	1587.95
9952.2	1587.9	9954.05	1587.97	9954.81	1587.99	9954.94	1588	9955.42	1588.01
9955.59	1588	9956.66	1587.99	9957.24	1587.98	9960.27	1587.96	9969.89	1587.87
9971.16	1587.8	9972.8	1587.8	9974.37	1587.78	9976.84	1587.7	9979.24	1587.64
9980.38	1587.4	9986.6	1586	9992.31	1584.77	9993.38	1584.5	9996.14	1584.39
10000	1584.2	10006.63	1584.05	10006.99	1584.05	10008.03	1584.28	10010.3	1584.7
10011.7	1585	10012.27	1585.13	10013.79	1585.46	10016.21	1586	10020.64	1587.01
10022.77	1587.6	10023.52	1587.73	10030.45	1587.62	10058.12	1587.03	10059.61	1587.45
10061.73	1588	10064.03	1588.81	10068.42	1590	10074.25	1591.53	10075.77	1592
10080.63	1593.4	10082.82	1594	10087	1595.18	10089.73	1596	10091	1596.37
10096.63	1598	10096.73	1598.03	10096.86	1598.02	10096.87	1598.02	10099.05	1598.17
10127	1600	10127.28	1600.01						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9636.75	.06	9774.99	.045	9874.47	.06	9979.24	.04	10023.52	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.24	10023.52	330.86	324.24	320.86	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 2.77

```
INPUT
Description:
Station Elevation Data     num=       93
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
 9563.97     1590 9585.44 1589.67 9588.18 1589.61 9604.75 1589.36 9607.79 1589.32
 9611.94   1589.2 9616.25 1589.17 9621.38 1589.08 9627.73 1588.96 9636.04 1588.78
 9651.99   1588.4 9655.75 1588.36 9671.49     1588 9701.82 1587.15 9709.13 1586.96
 9715.01   1586.8 9722.74 1586.18     9725     1586 9737.34 1585.02  9748.8 1584.14
 9751.06   1584.2 9757.76 1584.45  9761.4 1584.53 9767.38 1584.69 9800.45 1585.91
 9801.14   1585.9 9801.42 1585.94  9801.6 1585.95 9801.74 1585.95  9801.9 1585.96
 9802.03   1585.9 9802.12  1585.9 9802.18  1585.9 9802.24  1585.9  9802.3 1585.98
 9803.11     1586 9803.12     1586 9803.42     1586 9807.85 1586.14 9810.04 1586.17
 9814.25   1586.1 9817.11  1586.1 9821.57 1586.07 9825.61     1586 9826.12 1585.99
 9828.87   1585.9 9831.01 1585.92 9841.38  1585.8 9850.35 1585.77 9855.73 1585.73
 9859.47   1585.7  9937.5 1585.82 9942.43 1585.83  9944.1 1585.85 9947.57 1584.84
 9948.81   1584.4 9950.34     1584 9951.43 1583.65 9957.32     1582 9957.61 1581.89
 9957.81   1581.8 9957.86 1581.84 9958.34 1581.84 9960.84  1581.8 9961.54 1581.88
 9961.98   1581.8 9962.61 1581.88 9969.65     1582 9994.64 1582.64 10005.8 1582.88
10006.98  1582.910011.27 1583.3310018.63     158410022.36 1584.3210025.81 1584.61
10028.97  1585.3 10030.9 1585.7710031.94     158610032.62  1586.110040.61     1588
10047.46  1589.510049.38     159010050.79 1590.32 10058.1     159210071.16 1593.81
10072.45     159410074.61 1594.2510088.12 1595.7410090.45     159610094.34 1596.47
10098.38  1596.910100.05     159710133.44     1598

Manning's n Values         num=        5
     Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val
 9563.97      .06 9701.82     .045  9801.9      .06  9944.1     .04510047.46     .055

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
        9944.110047.46            178.45  226.63  231.52              .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.73

INPUT
Description:
Station Elevation Data     num=      132
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
 9463.49   1589.9 9484.85 1589.49 9492.23 1589.36     9514 1588.94 9549.49 1588.36
  9555.6   1588.3  9571.4     1588 9574.83 1587.94 9593.73 1587.58 9605.41 1587.34
 9607.99   1587.3 9635.62 1586.73 9669.54     1586 9669.64     1586 9674.65 1585.84
 9679.95   1585.4 9680.78 1585.33 9687.21 1584.79 9690.14 1584.55  9692.1 1584.38
 9692.79   1584.3 9696.66     1584  9696.7 1583.99 9696.77 1583.99 9696.93 1583.99
 9697.49     1584 9698.79 1583.97 9706.84 1583.85 9709.46 1583.79 9713.28 1583.71
 9718.99   1583.6 9725.83 1583.42 9731.54 1583.27 9732.78 1583.31 9734.69  1583.3
 9735.25   1583.3 9738.23 1583.41 9739.36 1583.42 9740.54 1583.44 9741.54 1583.47
 9743.14   1583.5 9746.63  1583.6 9749.49 1583.68 9751.98 1583.73 9753.19 1583.77
 9753.86   1583.8 9754.45  1583.8 9755.07 1583.81 9755.53 1583.83 9755.91 1583.83
 9756.25   1583.8 9756.48 1583.85 9756.68 1583.85 9757.04 1583.88 9757.34 1583.89
 9757.44   1583.9 9760.88 1583.89 9761.22  1583.9 9778.16 1583.88 9778.55 1583.89
 9785.18   1583.9 9792.64 1583.93 9802.12 1583.99 9802.18 1583.99 9802.98 1583.99
 9805.39     1584 9806.67     1584 9807.03     1584 9814.31 1583.95 9816.21 1583.92
 9817.82   1583.9 9820.75 1583.92 9831.76 1583.86 9850.99 1583.73 9853.61 1583.58
 9854.79   1583.5 9859.21 1583.18 9860.98 1583.05 9862.56 1582.95 9866.62 1582.61
 9870.14   1582.3 9872.98 1582.53  9874.1 1582.61 9876.55  1582.8 9880.01 1583.03
 9885.59   1583.4 9885.92 1583.36 9921.18 1582.35 9925.04 1582.32 9928.88 1582.33
 9940.59   1582.3 9975.04 1582.09 9980.86     1582 9983.02  1581.9 9986.22 1581.61
 9986.57   1581.5 9988.14 1581.13 9992.48     1580 9994.15  1579.6 9994.56  1579.5
 9995.37   1579.3 9995.94 1579.19   10000  1578.910003.56 1578.7710012.49  1578.3
10014.95     157910016.17 1579.32 10018.3     158010021.51 1580.9510024.84     1582
10027.31  1582.910031.01     158410034.96 1584.91 10039.3     158610045.34  1587.2
10049.51     158810055.42 1589.1810059.49     159010067.87 1591.6410069.65     1592
10071.85  1592.410076.06 1592.8910076.15 1592.8910076.66 1592.8110076.83  1592.8
10077.43  1592.810081.55 1592.6910082.91 1592.6410084.51 1592.6510095.58 1592.96
10098.52     159310103.72 1592.88

Manning's n Values         num=        4
     Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val
 9463.49      .06 9831.76     .06 9983.02     .04510045.34     .055

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
        9983.0210045.34            128.19  200.52  336.66              .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.69

INPUT
Description:
Station Elevation Data     num=      179
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
```

```
 9470.36    1590 9475.13 1589.88  9480.6 1589.74 9549.68    1588 9566.59  1587.7
  9664.6    1586 9690.07  1585.5 9692.13 1585.45  9693.4 1585.33 9705.98    1584
 9712.18  1583.4 9713.51 1583.29  9716.1 1583.05 9740.12 1583.03 9741.63 1583.02
 9774.21 1582.56  9779.8 1582.54 9781.16 1582.53 9781.96  1582.5 9786.38 1582.47
 9792.34 1582.25 9792.68 1582.25 9792.98 1582.24 9793.93  1582.2 9793.98 1582.23
 9796.45 1582.24 9800.72 1582.33 9802.84 1582.38 9804.21  1582.4    9806 1582.47
 9809.24 1582.53 9809.92 1582.53 9810.71 1582.54 9811.56  1582.6 9813.87 1582.58
  9855.4 1583.18 9858.23 1583.19 9859.83  1583.2 9862.42  1582.9 9868.74    1582
 9871.43 1581.56 9872.07 1581.49    9874  1581.3 9874.93  1581.2 9880.22 1581.74
 9883.14 1581.97 9883.42    1582 9886.31 1582.27 9888.45  1582.5  9888.5 1582.51
 9888.65 1582.48 9891.57 1582.31 9902.07 1582.13 9903.05  1582.1 9903.59 1582.07
 9907.48    1582 9909.54 1581.97 9910.47 1581.95 9913.91  1581.9 9924.29 1581.72
 9925.61 1581.79  9927.5  1581.9 9928.77 1581.96 9929.65    1582 9930.34 1582.02
 9930.83 1582.04 9943.18 1582.34    9957 1582.56  9961.7  1582.6 9965.02 1582.67
 9970.32 1582.74 9973.49  1582.8 9974.39 1582.59 9977.22    1582 9983.48 1580.51
 9985.42    1580 9987.84 1579.43 9988.27 1579.34 9990.32  1578.8  9991.6 1578.54
 9992.12 1578.48 9996.47    1578   10000 1577.2510009.46 1576.610009.65 1576.54
10011.58 1577.1810012.05 1577.3110013.97    157810018.77 1579.710019.75    1580
10020.68 1580.3210020.86  1580.4   10021 1580.4410021.62 1580.710024.12 1581.58
10024.54 1581.7210025.39 1581.69 10034.3  1581.3   10040 1581.110043.53 1580.95
10045.67 1580.8710052.79  1580.610053.32 1580.6110055.56 1580.710055.76 1580.66
10058.03 1580.7310060.44 1580.8910062.85    158110064.71 1581.110066.12 1581.18
10077.33    158210080.62 1582.2810081.66 1582.3110082.66 1582.310090.42 1582.76
10092.89 1582.9210094.77 1582.9610099.61    158310109.32    158310113.56 1583.02
10157.54 1583.5410169.13 1583.5610183.08 1583.6110212.48 1583.510214.86 1583.52
10217.38 1583.52 10217.4 1583.5210217.41 1583.5210222.22 1582.710223.56 1582.43
10224.28 1582.3110225.86    1582 10230.2 1581.1210231.35 1580.910235.99 1580.01
10236.74 1580.0110236.89 1579.9810243.49 1579.8410244.64 1579.810246.53  1579.8
10247.66 1579.7710251.12 1579.7310252.16 1579.7210252.53 1579.710255.02 1579.68
10255.86 1579.7310257.79 1579.8310258.68 1579.8710266.64 1579.810267.48 1579.87
10267.77 1579.8410268.39 1579.8710269.01 1579.8910271.04    158010278.77 1581.42
10280.16 1581.6410282.59    158210286.27 1582.5410290.25 1583.110297.13    1584
10306.46    158510307.53 1585.1110309.53 1585.3610312.68 1585.810314.45 1586.02
10331.78 1585.6610346.27 1585.3310356.46 1585.1110359.79    158510365.08 1584.91
10372.46 1585.1510381.35 1585.4410385.03 1585.5610386.91 1585.610388.52 1585.68
10389.93 1585.71 10398.9    158610423.55  1587.310437.84    1588

Manning's n Values         num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9470.36     .06 9859.83     .06 9973.49    .04510024.54    .05510217.41    .036
10290.25    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9973.4910024.54            210.07  264.16  263.43              .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.64

INPUT
Description:
Station Elevation Data     num=     200
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9611.34  1589.9 9621.75 1589.42 9636.96 1588.65 9648.98    1588 9678.44 1586.69
 9687.01  1586.3  9688.8 1586.27 9689.67 1586.26 9689.83 1586.26  9692.2 1586.27
 9695.94  1586.3 9696.02 1586.27 9702.94 1586.25 9710.88 1586.22 9732.26 1586.13
 9759.53    1586 9772.28 1585.88 9773.25 1585.87 9773.85 1585.87 9774.65 1585.85
 9776.76  1585.8 9779.12 1585.77 9798.98 1585.53 9811.48 1585.34 9819.12  1585.2
 9826.95  1585.1 9833.02 1584.14 9833.49 1584.07 9833.62 1584.05 9833.92    1584
 9834.99  1583.8 9847.36    1582 9850.08 1581.56 9850.47  1581.5 9859.84 1581.26
 9868.11    1581 9873.52  1580.9 9876.91 1580.81  9879.3 1580.74 9887.63 1580.58
 9888.12  1580.6 9888.46 1580.56 9888.72 1580.56 9890.84 1580.52 9894.66 1580.29
 9896.32  1580.2 9899.27 1580.03 9899.33 1580.02 9899.66    1580  9905.6 1579.62
 9906.99  1579.5 9909.42 1579.67 9912.11 1579.82 9915.67    1580 9916.03 1580.02
 9916.11    1580 9916.25 1580.03 9916.49 1580.05 9917.06 1580.08 9920.52 1580.08
  9923.5  1580.1 9926.15 1580.07  9928.5 1580.06 9930.74 1580.04 9941.78 1580.17
 9968.94  1580.3 9970.25 1580.39 9971.63 1580.42 9972.25 1580.41 9973.16  1580.4
 9973.41  1580.4    9974 1580.31 9974.49 1580.27 9974.73 1580.26 9975.18 1580.07
 9975.36    1580 9979.32  1578.4 9979.58  1578.3 9980.38    1578 9980.83  1577.8
 9980.94  1577.7 9981.78 1577.41 9984.43 1576.35 9986.44  1576.2  9987.8 1576.07
 9988.86    1576 9990.25    1576 9994.67    1576   10000    157610007.48    1576
10009.62 1576.110011.71 1576.2910016.35  1576.610024.23 1577.7510026.01    1578
10037.17 1579.510041.12    158010045.39 1580.5410051.59 1581.3310052.11  1581.4
10058.41 1580.610060.47 1580.3210063.07    158010063.77 1579.9210063.99 1579.89
10064.19 1579.910064.77  1579.810065.82 1579.6710069.34 1579.2610072.57 1578.88
10075.61 1579.110080.25 1579.4910082.27 1579.6510086.42    158010089.24 1580.25
10093.01 1580.610093.05 1580.5810119.02 1580.5110160.22 1580.8510162.49 1580.87
10164.21 1580.910165.52 1580.9110166.72 1580.92 10168.5 1580.9910170.58 1581.02
10172.85 1581.110173.72  1581.110174.62 1581.1210175.89 1581.1510176.99 1581.17
10178.25 1581.210182.83 1581.3310184.42 1581.3610187.54 1581.34 10187.8 1581.35
10191.03 1581.410191.04 1581.4210191.38 1581.4210191.43 1581.4310195.21 1581.46
10198.58 1581.510200.12 1581.4610226.14 1581.8710228.27    1582 10230.9 1582.09
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 10231.5  1582.110232.61 1582.1110233.27 1582.1310234.93 1582.1810236.88 1582.21
10239.01  1582.310242.84 1582.3410245.26 1582.4510245.59 1582.4710245.89  1582.5
10247.23  1582.6 10249.3 1582.7110251.22 1582.8710254.27 1582.9510256.11 1583.07
10257.97  1583.110258.62 1583.1710259.44 1583.2110260.75 1583.24 10261.6 1583.27
10263.08  1583.310263.73 1583.3310264.86 1583.3610266.37 1583.4310269.61  1583.5
10270.01  1583.510270.62 1583.5110270.89 1583.5110272.78 1583.58   10273 1583.58
10274.61  1583.610274.92 1583.6310276.44 1583.6410279.49 1583.6910281.22 1583.71
10282.61  1583.7 10287.5  1583.810291.67 1583.8410293.45  1583.910294.82 1583.93
10295.23  1583.910296.05 1583.9610296.71 1583.9810297.71    1584 10304.4 1584.18
   10308  1584.310309.07 1584.2910310.31 1584.3210312.31  1584.410315.66 1584.49
10318.37  1584.610323.78 1584.8710327.72 1585.1510341.11    158610342.55 1586.09

Manning's n Values         num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9611.34     .06 9973.16    .04510052.11    .05510093.01    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9973.1610052.11            327.74  314.05   284.2             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.58

INPUT
Description:
Station Elevation Data     num=     145
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9693.43  1588.1 9694.74    1588  9714.4  1586.2 9716.52    1586 9717.07 1585.95
 9739.53    1584 9751.16 1583.55 9791.71    1582 9823.44 1580.82 9825.47 1580.75
 9825.62  1580.8 9825.94 1580.76 9827.99 1580.73 9840.64 1580.55 9846.34 1580.48
 9851.95  1580.4 9856.83 1580.33 9862.81 1580.24 9864.51 1580.21 9865.35  1580.2
 9878.21    1580 9891.25 1579.78 9892.32 1579.76 9894.45 1579.71 9895.09 1579.69
 9896.99  1579.7 9901.69 1579.52 9902.24 1579.51 9903.44 1579.55 9903.45 1579.55
 9931.67  1579.9 9933.44 1579.94 9934.18 1579.95 9934.66 1579.95 9935.34 1579.96
 9935.66    1580 9935.83 1579.97 9936.15 1579.97 9936.27 1579.98 9936.36 1579.98
 9936.43    1580 9938.42    1580 9939.76    1580 9958.81    1580    9962 1579.91
 9962.35  1579.9 9962.89  1579.9 9963.62 1579.89 9964.86 1579.86 9967.25 1579.82
 9972.13  1579.7 9972.62 1579.73 9972.68  1579.7 9973.52 1579.36 9976.65    1578
 9980.89  1576.2 9981.41    1576 9982.84 1575.42 9986.42    1574 9986.53 1573.89
 9986.57  1573.9 9986.71 1573.79 9987.08 1573.65 9994.39 1573.74   10000  1573.8
10003.56  1573.910013.86    157410015.24 1574.0210016.03 1574.0310017.78 1574.05
10019.19  1574.5 10020.6 1574.8610021.44  1575.110022.05 1575.2710022.49 1575.38
10022.74  1575.410024.94    157610026.68 1576.4910031.76    157810034.11 1578.73
10034.79  1578.910043.08 1578.8810056.54 1578.7510058.44 1578.2910059.03 1578.14
10059.67    157810061.46 1577.5610062.28 1577.3710068.03    157610068.91 1575.77
10069.39  1575.710069.56 1575.6210070.24  1575.710071.47 1575.8510071.96 1575.91
10072.76    157610079.17 1576.7910087.59 1577.8710090.57 1577.8810092.11 1577.86
10093.18  1577.9 10096.9 1577.8810103.26 1577.9610103.87 1577.9710104.28 1577.98
10104.68    157810106.53    157810158.38 1578.4610160.52 1578.4710165.58 1578.52
10171.82  1578.610175.41 1578.6110202.85 1579.0110202.99 1579.0210203.44 1579.04
10203.52    157910203.99 1579.0510204.83 1579.0710205.22 1579.0910211.79 1579.33
10213.86  1579.410217.85 1579.5810219.97 1579.6610223.64 1579.8310224.79 1579.81
10276.01  1579.810279.47 1579.7610279.73 1579.7610280.47 1579.7410290.41  1579.9
10295.83    158010325.49 1581.0310341.32 1581.6610341.58 1581.6910343.55 1581.93
 10343.8    158210344.34    158210350.33  1582.710361.52    1584 10365.3 1584.43
10368.83  1584.810373.16 1585.2710379.14    158610386.14 1586.8910392.76 1587.67

Manning's n Values         num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9693.43     .06 9972.62    .04510034.79    .05510079.17    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9972.1310034.79            323.76  326.08  295.37             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.52

INPUT
Description:
Station Elevation Data     num=     168
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9765.82  1587.3 9767.18 1587.37 9769.24 1587.41 9769.84 1587.31 9772.84 1586.83
 9778.12    1586 9781.74 1585.44 9784.45 1584.97 9789.64    1584 9798.39 1582.47
 9800.89    1582 9804.31 1581.37 9812.12    1580 9821.23 1578.54 9824.43    1578
 9830.77    1577 9836.32    1576 9837.07 1575.86  9837.1 1575.85 9838.32 1575.86
 9841.19  1575.9 9842.21 1575.92 9842.83 1575.93 9843.42 1575.92 9858.88    1576
 9860.98    1576 9868.52    1576 9869.16    1576 9878.72 1576.56 9879.18 1576.58
  9882.7  1576.6 9885.82 1576.59 9899.54  1576.6 9900.59 1576.61 9902.12 1576.62
 9905.05  1576.6 9906.22 1576.61 9909.45 1576.58 9910.93 1576.58 9915.56 1576.53
 9918.85  1576.5 9919.59 1576.48 9923.33 1576.46 9925.04 1576.46  9925.8 1576.29
  9926.5  1576.1 9926.67 1576.04 9926.88    1576 9929.03 1575.53 9935.68    1574
 9938.13  1573.5 9939.18 1573.39 9939.44 1573.34 9948.08 1573.15 9956.62 1572.98
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 9957.17  1573.1 9962.97    1574 9964.01 1574.21 9964.61 1574.31 9965.59 1574.43
 9974.21  1574.6 9982.51 1574.86 9982.69 1574.82 9983.31 1574.69  9983.7 1574.58
  9986.1    1574 9992.12 1572.42 9993.56    1572  9994.1 1571.84 9994.32 1571.78
 9994.82  1571.6 9999.27 1571.87   10000  1571.910000.81 1571.9310003.41    1572
10004.62    157210005.59 1572.0610006.47 1572.0810008.64 1572.61 10011.6 1573.34
10012.67  1573.6 10014.4    157410014.92 1574.1410017.19 1574.6810019.78 1575.21
10023.53    157610028.26 1577.0810028.39 1577.1110030.56 1576.7910030.65 1576.77
10033.05  1576.310034.43    157610037.43 1575.37 10039.3 1574.9810042.94  1574.2
10043.16  1574.210044.64 1574.5610048.56 1575.3910049.98 1575.6810050.57  1575.8
10050.81  1575.910050.94 1575.8810051.59    157610051.76 1576.0510052.15 1576.11
10053.38  1576.310057.26 1576.4910058.97 1576.5710062.24 1576.7310066.71 1576.93
10070.64  1577.110071.26 1577.1110071.33 1577.1110072.16  1577.110072.99  1577.1
10074.22  1577.110074.47 1577.0810090.65 1577.0910092.09 1577.0910134.81 1577.03
10137.66  1577.110139.12 1577.0410141.31 1577.0610142.78 1577.0510147.33 1577.07
10153.37  1577.110155.81 1577.1410156.76 1577.1310159.34 1577.0910160.18 1577.11
10161.24  1577.1 10161.8 1577.1410162.36 1577.1410162.88 1577.1310163.53 1577.12
10164.15  1577.110164.68 1577.1110170.27 1577.1310174.52 1577.1410191.21 1577.11
10191.46  1577.110191.69 1577.14 10193.9 1577.1710196.57 1577.1810198.04 1577.21
10201.01  1577.210203.86 1577.2410206.83 1577.2910208.13 1577.3610211.93 1577.47
10213.68  1577.610215.27  1577.610217.71 1577.6410220.46 1577.6710249.07    1578
10252.74  1578.210253.67 1578.2210253.95 1578.2310256.31 1578.3610261.88 1578.69
   10285    158010287.65 1580.1710288.49 1580.2410289.65 1580.4210293.05 1580.92
10299.45    158210307.44 1583.24 10312.1 1583.98

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9765.82     .06 9925.04    .04510028.39    .05510074.22    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9925.0410028.39            239.22  329.13  394.08             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.46

INPUT
Description:
Station Elevation Data    num=     194
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9710.13    1580 9724.88 1578.02 9725.03    1578 9725.17 1577.98 9743.45    1576
 9747.12  1575.6 9748.23  1575.5 9750.17  1575.3 9752.87    1575 9756.24 1574.63
 9759.55  1574.7 9763.52 1574.75  9770.1 1574.22 9772.24 1574.06 9772.58 1574.03
    9773    1574 9773.13 1573.99 9773.16 1573.99 9773.51 1573.96 9773.95 1573.92
 9774.21  1573.9 9776.35    1574 9779.56  1574.1 9791.96 1574.78 9795.12 1574.96
 9798.17  1575.1 9798.46 1575.14 9799.89 1575.19 9799.92 1575.19 9800.94 1575.21
  9801.1  1575.2 9808.66 1575.37 9810.44 1575.39 9815.49 1575.44 9818.42 1575.48
 9821.92  1575.5 9822.95 1575.51 9829.75  1575.7 9832.05 1575.68 9835.49 1575.67
 9836.61  1575.7 9840.61 1575.69 9842.72  1575.7 9845.71 1575.87 9846.88 1575.93
 9847.32    1576 9848.19    1576 9849.36 1576.07 9849.92  1576.1 9852.65 1576.24
 9857.77  1576.5 9866.12 1576.19 9869.18 1576.07 9871.02    1576 9885.51 1575.43
 9889.53  1575.3  9893.3 1575.12  9894.8 1575.16  9901.9 1575.39  9904.5 1575.44
 9911.82  1575.5 9915.49 1575.53 9918.05  1575.5 9920.07 1575.31 9922.14 1575.17
 9924.35    1575 9927.63 1574.71 9928.16  1574.7 9937.55 1575.47 9939.69 1575.62
 9939.93  1575.6 9940.07 1575.63 9940.16 1575.63  9941.8 1575.67 9941.81 1575.67
 9941.82  1575.7 9942.08 1575.67 9944.17 1575.67 9946.02 1575.65 9948.26 1575.62
 9948.91  1575.6 9953.83 1575.37 9957.83 1575.21  9958.4 1575.19 9959.85 1575.11
  9965.3  1574.7 9966.73 1574.63  9967.3  1574.5  9968.6  1574.2 9968.78 1574.14
 9968.98  1574.1 9969.19    1574 9970.16 1573.73 9973.73 1572.82 9977.04    1572
 9983.83    1570 9983.93    1570 9984.22 1569.91 9985.21 1569.86  9986.2  1569.9
 9986.83 1569.93 9987.06 1569.94 9998.59  1569.4   10000    156910008.19  1568.9
 10010.1 1568.7610010.25 1568.8310011.13 1569.2610012.45    157010014.89  1571.1
10015.35 1571.3310016.69    157210018.23 1572.8310020.65    157410022.11  1574.7
10022.42 1574.7710023.01 1574.95 10023.2 1575.0410023.27 1575.0410035.21  1575.1
10045.94 1575.1210051.23 1575.1410057.71 1575.1710060.21 1575.3910066.98    1576
10080.73 1577.2610089.12    1578 10090.2 1578.0910090.46 1578.1110091.36  1578.1
10092.68 1578.1410096.11 1578.3710097.24 1578.4110098.61 1578.3810099.81  1578.4
10100.44 1578.3510109.57  1578.410111.69  1578.410113.61  1578.410115.25  1578.4
10116.98 1578.4410118.77 1578.4510120.29 1578.4510121.15 1578.4210170.23    1578
 10208.8 1578.6410209.26 1578.6310210.14 1578.6210212.14 1578.6110218.56  1578.7
10222.48 1578.6810272.17 1578.6910273.64  1578.710275.04 1578.6910278.24  1578.7
 10281.1 1578.6610281.12 1578.6510282.11 1578.6410285.65 1578.6410286.36  1578.6
10287.18 1578.6210290.36 1578.5910293.07 1578.6610294.82 1578.6310296.23  1578.6
   10299 1578.5510299.78 1578.5310300.51  1578.510303.54 1578.4310303.83  1578.4
10305.83 1578.3810306.88 1578.4310306.98 1578.4410307.21 1578.4510310.33  1578.6
10312.27 1578.7310314.87 1578.8610316.77 1578.9910318.83 1579.11 10323.3  1579.4
 10323.4 1579.3610323.64 1579.3710324.24 1579.4510327.22 1579.8310327.64  1579.9
10328.68    158010330.45 1580.2210331.41 1580.3610336.43 1581.0710342.58  1581.9
10344.78 1581.9610348.18    158210348.21    158210350.21    1582

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9710.13     .06 9857.77     .06 9941.82    .045 10023.2    .055
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Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
       9941.82 10023.2             221.1  275.02  335.08              .1        .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.41

INPUT
Description: Realigned cross section using topo.
Station Elevation Data     num=      275
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9642.5    1582 9643.88    1582 9659.48 1581.27 9661.08 1581.21 9663.47 1581.13
  9666.9    1581 9675.85 1580.67 9675.99 1580.67 9676.04 1580.67 9677.53 1580.38
 9679.41    1580 9687.11 1578.52 9689.91    1578 9697.38 1576.57 9698.86 1576.32
  9700.6    1576 9702.36 1575.68 9704.51 1575.27 9714.22 1574.59 9717.41 1574.37
 9718.62  1574.3 9719.54 1574.22 9720.05 1574.17 9722.04    1574 9724.54  1573.8
 9726.02  1573.7 9729.54  1573.4 9735.36 1572.96 9738.74 1573.22 9742.72  1573.5
 9750.49    1574 9750.53    1574 9750.58    1574 9750.61    1574 9750.63    1574
 9753.69 1574.09 9754.34  1574.1  9759.2 1574.21 9761.28 1574.24 9763.84  1574.3
 9765.77 1574.36 9766.24 1574.31 9766.67 1574.26 9769.32    1574 9769.76    1574
  9770.6 1573.87 9787.45 1573.92 9787.66 1573.92 9787.81 1573.92 9788.12  1573.9
 9793.41 1573.52 9800.72 1572.99 9800.98    1573 9811.75 1573.53 9812.24  1573.5
 9822.06 1573.78 9823.78 1573.57 9824.91 1573.44 9829.28 1572.95 9831.01  1572.7
 9832.01 1572.63 9837.95 1572.51 9842.31  1572.4 9861.03 1572.22  9861.7  1572.3
 9862.41 1572.25 9862.72 1572.23 9862.96 1572.25 9866.22 1572.49 9867.36  1572.5
  9870.8 1572.68 9886.65 1573.32 9886.79 1573.32  9886.8 1573.32 9889.78  1573.3
 9890.05 1573.26 9893.74 1573.18 9894.41  1573.2 9895.26 1573.22 9899.57  1573.2
 9901.52 1573.21 9902.33 1573.21 9904.89 1573.24 9906.93 1573.27 9908.59  1573.3
 9910.98 1573.31 9913.24 1573.35 9917.39  1573.4 9919.38 1573.43 9921.36  1573.5
 9925.07 1573.52 9926.23 1573.54 9926.86 1573.54 9931.93  1573.6 9932.14  1573.6
 9937.01 1573.71 9937.36 1573.73 9938.03 1573.69 9938.14 1573.69 9940.43  1573.6
  9940.8 1573.62 9941.15 1573.61 9942.96 1573.53 9943.64  1573.5    9946  1573.4
 9948.05 1573.25 9949.77 1573.19  9951.2 1573.12 9951.56 1573.05 9952.12    1573
    9953 1572.97 9961.59 1572.85  9962.4 1572.86 9963.73 1572.88 9965.08  1572.9
 9968.49 1572.81 9970.64 1572.84 9971.75 1572.54  9972.4 1572.34 9973.31    1572
 9974.42 1571.68 9979.99    1570 9983.77 1568.98 9987.08    1568 9990.44  1567.2
 9990.58 1567.16 9993.73 1566.86   10000  1566.4 10002.1 1566.0510008.18  1565.5
10011.39 1566.6910015.16    156810018.21 1569.0610020.04 1569.6810020.96    1570
10021.69 1570.2510026.71    157210027.18 1572.1710027.38 1572.2710027.75  1572.4
10029.11 1572.9110032.23 1573.2310034.77 1573.4310036.99 1573.5810046.38    1574
 10050.6  1574.210060.64 1574.5310069.18 1574.3510077.42 1574.2310077.51  1574.3
10081.99 1574.2910089.97 1574.3810092.57 1574.3910094.06  1574.410097.67  1574.4
10101.34 1574.4610106.62 1574.5410111.18 1574.5810120.58 1574.6910133.53  1574.9
10136.83 1574.6910145.63 1574.3410148.91  1574.210149.96 1574.1710150.89  1574.1
10154.65    157410157.03 1573.9210157.54  1573.910158.76 1573.8510161.12  1573.8
10162.14  1573.810168.41    157410177.47 1574.2910198.69 1574.9510202.31  1575.1
10202.51 1575.0810203.16 1575.0910203.53 1575.0910205.41 1575.1410210.54  1575.2
10211.69 1575.1710214.49 1575.18 10217.1 1575.2110221.21 1575.2310224.37  1575.2
10226.74 1575.2510228.44 1575.2510245.56 1575.3410246.31 1575.3210247.22  1575.3
10248.34 1575.2910254.38 1575.26 10256.1 1575.3310257.25  1575.4 10259.6  1575.5
10260.87 1575.5810262.12 1575.5510263.53 1575.5210265.03 1575.4910271.68  1575.5
10273.21  1575.410277.61 1575.2310280.06 1575.1910283.22 1575.1610285.19  1575.2
10287.57 1575.1710290.88 1575.2410292.74 1575.1910293.36 1575.1510294.13    1575
10295.32 1574.94 10296.3 1574.8310305.65    157410308.25 1573.7610308.75  1573.7
10308.98 1573.6810309.32 1573.6510310.09 1573.5710311.24 1573.4310313.55    1573
10314.09 1572.8710316.74 1572.6210319.18 1573.1710320.76 1573.6110322.72    1574
10323.87 1574.2310323.99 1574.2710324.32 1574.3810324.77 1574.4410325.34  1574.5
10326.36 1574.7210330.37 1575.4610330.71 1575.4710333.66  1575.510336.54  1575.6
10338.78 1575.6310340.56 1575.6610343.72 1575.78 10344.8 1575.8110345.58  1575.8
10347.52  1575.910348.17 1575.9210348.55 1575.9310349.84    157610375.26  1576.6
10385.27 1576.8210399.55 1577.1110408.36 1577.2710431.32    157810449.65  1578.3
10459.37 1578.38 10465.3 1578.4310476.98 1578.5410482.94 1578.6110488.38  1578.7
10493.28 1578.75 10497.5 1578.7910501.26 1578.8210504.74 1578.8410507.92  1578.8
10510.86 1578.8410513.61 1578.8410518.41 1578.8410533.75 1578.8610534.17  1578.9
10546.67    157910555.21  1579.110557.43 1579.1310564.25 1579.1710566.62  1579.2
10567.76 1579.2110581.55 1579.3510597.16 1579.5110613.48 1579.7210631.05    1580

Manning's n Values         num=        5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
  9642.5     .06 9970.64    .04510029.11     .0610292.74    .05510330.37     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
       9970.6410029.11             318.45  326.48  347.74              .1        .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 2.35

INPUT
Description:
Station Elevation Data     num=       82
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
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 9659.48  1576.1 9673.12    1576 9683.76 1575.67 9692.72  1575.4 9705.89 1575.01
 9712.65 1574.83 9719.43 1574.66 9721.28 1574.62  9767.8  1574.7 9776.68 1574.45
 9787.89    1574 9794.57 1573.89 9805.17 1573.12 9814.68 1572.31 9823.31 1571.46
 9833.13 1570.98  9839.7 1570.53 9850.48 1570.82 9859.77 1570.87 9861.44 1570.82
 9884.01 1570.85 9897.66 1569.98  9898.7  1569.8 9898.78 1569.84    9915    1570
  9920.5 1570.05 9922.22  1570.2  9931.3    1571 9947.41 1570.94 9950.98  1570.9
 9957.41 1570.85 9965.84 1570.85 9966.72  1570.5 9967.26 1570.33 9967.51 1570.26
 9968.29    1570 9969.81 1569.47 9973.56    1568 9977.63 1566.48 9978.67 1566.15
 9978.97 1566.03 9979.74 1566.04 9980.37    1566 9981.42 1565.92 9983.02 1565.84
    9985 1565.79 9985.63 1565.83 9992.93  1565.7 9993.67 1565.65 9994.28 1565.62
 9996.59 1565.4910003.56 1565.3810004.51  1565.210006.21 1564.9210006.35 1564.89
10006.72 1565.0110009.92    1566 10013.1    1567 10016.3 1567.7310017.35    1568
10021.52 1569.1710022.49 1569.4310023.42  1569.610031.61 1569.91 10043.6  1570.1
10057.65    157210068.61 1573.6210071.38    157410076.84 1574.0310097.57  1574.4
10110.87 1574.8410125.59 1575.17 10150.3 1575.8110169.28 1575.7810170.87 1575.76
10196.07 1575.73 10204.6 1575.7310239.93 1575.5610247.66  1575.5 10266.6 1575.29
10270.75  1575.210275.98 1575.13

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9659.48     .06 9884.01     .06 9965.84    .04510071.38    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9965.8410071.38           341.44  328.76  318.53             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.28

INPUT
Description:
Station Elevation Data    num=      96
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9730.94    1574 9751.71 1573.08  9820.8 1572.03 9832.74 1571.82 9842.62 1571.71
 9853.12 1571.63 9862.51 1571.54 9871.22  1571.5  9882.5  1571.4 9891.45 1571.17
 9904.01 1570.91 9911.32 1570.81 9918.93 1570.64 9928.14  1570.3 9935.66    1570
 9941.42 1569.74 9941.94 1569.72 9942.65 1569.69 9962.96  1568.9 9964.66 1568.92
 9966.07 1568.83 9967.86 1568.64 9968.35  1568.6 9969.47  1568.3 9970.11  1568.2
 9971.15    1568 9974.37 1567.21 9979.36    1566 9980.76  1565.6 9983.29 1565.08
 9987.18 1564.9410009.17 1564.0810010.63 1564.4910011.99 1564.810015.77    1566
10019.23 1567.0310022.64    156810026.45 1569.17 10026.9 1569.310029.71 1569.28
10067.52 1569.0810082.71 1568.9910093.45    156810100.84 1566.810101.15 1566.77
 10101.2 1566.7710101.34 1566.7510104.89 1566.4510107.23 1566.210110.97  1566.2
10111.76  1566.2 10115.9  1566.310118.06 1566.2910119.14 1566.310122.05 1566.34
 10123.2 1566.3410126.98 1566.33 10127.1 1566.3310127.55 1566.3 10127.8 1566.34
10142.77 1567.3910150.53 1567.2910151.33 1567.3110152.41 1567.310153.83 1567.37
10153.95 1567.3810160.47    156810163.13 1568.26 10166.3 1568.510168.75 1568.83
 10179.6    157010180.62 1570.1110197.49 1571.9710197.86    157210207.98 1573.51
10211.08 1573.8110211.24 1573.82 10213.6    157410218.77 1574.410225.62 1574.89
 10227.2 1575.04 10228.9 1575.15 10231.3 1575.3510233.62 1575.510237.36 1575.64
10237.85 1575.67 10240.4 1575.7510241.53 1575.8110246.93  1575.9 10247.4 1575.96
10247.82 1575.96 10248.1 1575.9710249.99 1575.9810251.34    157610252.17 1576.01
10257.12 1576.13

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9730.94     .06 9966.07    .045 10026.9    .05510082.71    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9966.07 10026.9           507.59  485.85  455.74             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.19

INPUT
Description:
Station Elevation Data    num=     287
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9723.46  1571.8 9728.95 1571.43 9730.39 1571.31 9730.46  1571.3 9730.76 1571.24
 9731.33  1571.2  9731.9 1571.21 9734.14 1571.21 9736.07 1571.27 9736.49 1571.26
 9775.69  1570.6 9776.52 1570.61 9777.58 1570.56 9778.19 1570.55 9779.19 1570.54
 9804.69    1570 9820.24 1569.56  9847.7  1568.5 9865.32 1568.46 9867.58 1568.44
    9872  1568.4 9880.12 1568.35 9888.89 1568.28 9897.64  1568.2 9915.96    1568
 9931.66  1567.2 9935.12 1567.03 9936.77 1566.96 9936.98 1566.99 9937.25    1567
 9937.68    1567 9952.54 1567.19 9957.19 1567.25 9958.92 1567.24 9963.83  1567.2
 9966.31  1567.2 9968.62 1567.27 9971.44 1567.31 9976.44 1567.47 9982.32 1567.63
 9984.19  1567.7 9985.43 1566.24 9985.51 1566.15 9985.59    1566 9985.76 1565.74
  9987.4    1564 9988.14 1563.54 9988.38 1562.96    9989    1562 9989.73 1560.91
 9990.03  1560.6   10000 1560.6510003.38 1560.7410004.93 1560.7510007.03 1561.19
10010.72    156210016.08 1563.3810018.52    156410020.13 1564.4110026.15  1565.9
10028.45  1565.810035.29 1565.47 10038.6 1565.3610039.66 1565.3110043.43 1565.03
10046.19  1564.910051.22 1564.7210055.79 1564.5710065.63 1564.0610066.56    1564
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10067.81  1563.910071.45 1563.7510073.16 1563.8410074.42 1563.7810076.26    1564
10078.62  1564.310079.15 1564.3410080.07 1564.4510080.82 1564.5510083.78 1564.85
10084.85    156510086.23 1565.2410088.49 1565.6910090.16 1566.0610090.56 1566.09
10090.63  1566.110091.73 1565.9910091.86 1565.9810092.64 1565.9410094.22 1565.94
10095.59  1565.910097.33  1565.910097.92 1565.8710164.19 1565.9610167.61    1566
10169.18    156610172.48    1566 10185.3    156610186.83    156610194.43 1565.84
10195.38  1565.810196.81 1565.7410199.03 1565.6910205.54  1565.510215.64 1565.22
10224.13  1564.410226.48  1564.210228.68    156410229.41 1563.94 10232.8 1563.62
10233.71  1563.710235.93    156410244.19 1565.2210250.28    156610251.65 1566.22
10252.18  1566.3 10254.9 1566.1410257.78    156610260.23 1565.8610265.32 1565.62
10266.67  1565.710267.18 1565.66 10267.9 1565.68 10270.9  1565.710271.89 1565.72
10272.64  1565.710274.57 1565.8110280.31    156610281.25 1566.0310281.56 1566.04
 10282.2  1566.1 10299.4 1566.6410304.07 1566.7610308.91 1566.8910310.95 1566.93
10311.54    156710312.39 1567.0710313.83 1567.2310314.54 1567.3110321.28    1568
10328.05  1568.710328.63 1568.7210329.77 1568.7310330.93  1568.810331.76 1568.81
10350.81  1568.910352.55 1568.9110357.01 1569.0910364.88  1569.1 10374.2 1569.26
10384.24  1569.310388.17 1569.3510393.08 1569.3310394.88 1569.3710395.26 1569.38
10396.28  1569.4 10397.3 1569.3910413.07 1569.3510414.47 1569.3110416.56 1569.26
10420.69  1569.210423.14 1569.1110425.38 1569.0610427.02 1569.0410428.94    1569
10431.99  1568.810434.41  1568.810438.95 1568.5810441.34 1568.4710445.85 1568.51
10446.82  1568.510447.99 1568.4810449.14 1568.4610449.78 1568.4810452.12 1568.43
10453.46  1568.410454.32 1568.4110517.94 1569.0310519.17 1569.0410562.03 1569.73
10569.25  1569.810579.39    157010585.27 1570.0110597.85 1570.02 10603.2 1570.02
10609.02    157010615.06 1570.04 10621.1 1570.0510629.75 1570.0610639.96 1570.07
10643.42  1570.110649.88 1570.0810659.07 1570.0910668.08  1570.110685.43 1570.11
10689.48  1570.110691.49 1570.1110694.26 1570.1110697.93 1570.1110700.78  1570.1
10702.72  1570.110703.65  1570.110708.65 1570.0810710.39 1570.0710711.59 1570.06
10712.12  1570.110716.94    157010722.63 1569.8610723.28 1569.8810724.04 1569.91
10727.56  1569.910730.21 1569.7910732.81 1569.71   10740 1569.1610749.87 1568.42
 10756.2  1568.3 10767.4 1568.0110768.02    156810782.07  1567.710791.45 1567.52
10795.64  1567.610795.78 1567.5610802.75  1567.610804.31 1567.6110807.75 1567.64
10815.05  1567.710844.83    156810854.95 1568.1310871.77 1568.1910876.87 1568.44
10897.13  1569.510904.85    157010908.03 1570.16 10908.8 1570.2110913.81  1570.1
10915.08  1570.110922.28 1570.0210922.75 1570.0210922.88 1570.0110922.93 1570.01
10923.03    157010925.24 1570.0210931.13    157010934.47 1569.9910934.54 1569.99
10940.68    157010940.72    157010940.74    157010941.06 1569.9910943.33 1569.98
10943.45    157010943.48 1569.9810943.54 1569.9710951.69  1569.810952.14  1569.8
10952.38  1569.810973.68 1569.4510987.92 1569.2910989.61 1569.2410991.12 1569.22
10994.62  1569.111000.53 1569.0411002.92 1568.96 11004.7 1568.9511008.38 1568.85
11012.06  1568.811016.29 1568.6711017.87 1568.6711027.74 1568.8211036.59 1568.96
11040.65    1569 11041.9 1569.0111042.81 1569.0211043.37 1569.03 11046.7 1569.04
11079.35  1569.711081.26 1569.7311087.33  1569.911095.07    157011104.37 1570.36
11106.87  1570.411115.07 1570.5911118.22 1570.6511138.64 1571.1411153.38 1571.53
11175.16    157211176.22 1572.03

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9723.46     .06 9984.19    .04510026.15    .05510164.19    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9984.1910026.15           306.52  310.72  225.43              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   1039311176.22    1572

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.13

INPUT
Description: Using topo extended cross section.  Additional stations are
             9630.45, 9410.45, 9340.45,  10667.44, and 10687.44.
Station Elevation Data    num=     285
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9606.68    1570 9609.57  1569.7 9625.91    1568 9628.56  1567.8 9633.23 1567.39
 9649.59  1566.4 9671.55 1567.72 9680.17    1568 9700.96 1569.51 9702.89 1569.63
 9776.14  1568.4 9800.11    1568 9801.55 1567.96 9837.69 1566.94 9866.87    1566
 9868.69  1565.9 9888.98 1565.38  9891.8  1565.3  9893.1 1565.26 9893.93  1565.3
 9895.79  1565.4 9897.54 1565.46 9899.29 1565.52 9921.26  1565.8 9922.14 1565.81
  9923.8  1565.8 9924.84 1565.79 9924.98 1565.79 9926.72 1565.78 9928.31 1565.75
  9932.1  1565.7 9935.87 1565.62  9944.1 1565.64 9957.37 1565.59 9969.33 1565.54
 9969.47  1565.5 9972.54 1564.68 9974.46 1564.14  9974.7 1564.07 9974.92    1564
 9975.15  1563.9 9981.46    1562 9985.13 1561.08 9988.42    1560 9989.65 1559.62
 9990.16  1559.4 9999.95 1559.26   10000 1559.1510008.43 1559.08 10009.6 1559.56
10010.19  1559.810010.39 1559.8910010.65    1560 10011.5 1560.3610015.46    1562
10019.83  1563.810020.13  1563.9 10023.4 1563.4710029.68  1562.610036.59 1562.98
10040.19  1563.210046.94 1563.7510049.78    156410050.73 1564.0810051.21 1564.11
 10051.5  1564.110051.78 1564.0410052.03    156410055.21 1563.6210059.77 1563.14
10067.17  1562.310071.09 1561.8310077.62 1562.54 10082.4 1563.1110084.48 1563.36
10089.34    156410090.03 1564.0810090.64 1564.1210091.82 1564.2110093.46 1564.25
10094.34  1564.310102.29 1564.4210108.03 1564.41 10108.2 1564.3910109.51 1564.26
10151.39  1565.510166.56    156610168.03 1566.1310169.21 1566.2610180.05 1567.38
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10240.99  1566.310260.29    156610261.84 1565.9910265.68 1565.9710268.71 1565.96
10268.78    156610270.23 1565.9810270.33 1565.9810270.61 1565.9810271.01 1565.98
10282.14    156610284.84    156610288.61    156610288.72    156610288.93    1566
10289.59    156610296.06 1566.0410296.46 1566.04 10297.9 1566.0610298.94 1566.02
10299.44    1566 10299.7 1566.0110299.85 1566.0210299.98 1566.0510300.61 1566.07
10314.64  1566.210315.52  1566.210319.36 1566.2610326.71 1566.3510330.13  1566.4
10332.85  1566.410336.34  1566.510337.24 1566.5110352.27 1566.6310363.29 1566.71
10388.45  1566.910401.09 1566.9810418.79 1567.1210418.89 1567.1210435.02 1567.27
10450.31  1567.410455.23 1567.44 10458.7 1567.4710460.84 1567.4910466.82 1567.54
10474.19  1567.610475.18 1567.5910483.98 1567.6310494.34 1567.6910506.87 1567.78
10522.49  1567.910524.41 1567.9310525.12 1567.9410525.22 1567.9410525.38 1567.94
10525.83  1567.910525.98 1567.9410526.04 1567.95 10526.1 1567.9510526.31 1567.95
10526.79    1568 10526.9 1567.9610526.97 1567.96   10527 1567.9610527.08 1567.96
10527.15    1568 10527.2 1567.9610527.27 1567.9610527.49 1567.9510527.57 1567.95
10527.63  1567.910528.32 1567.9410535.27 1567.9910536.21    156810536.24    1568
10539.79    156810543.86 1568.0110544.73    156810553.05 1567.9510553.19 1567.95
10553.34  1567.910561.29 1567.8610562.51 1567.8310563.32 1567.82 10566.1 1567.76
10574.78  1567.610580.46 1567.4810587.39 1567.3210602.75 1566.9510621.66 1566.49
 10623.8  1566.410628.44 1566.3110632.52 1566.2110635.41 1566.1410637.28  1566.1
10641.06    156610643.96 1566.0210645.62    156610645.92 1565.9910645.96 1565.99
10645.99    156610646.02 1565.9910646.05 1565.9910646.16 1565.9910667.95 1565.51
 10669.3  1565.510671.37 1565.4910675.35 1565.5210676.52 1565.4710677.98 1565.42
 10678.8  1565.410681.28 1565.5510681.57 1565.5610681.74 1565.5710686.54    1566
 10694.8  1566.310700.33 1566.3710707.55 1566.5610708.64 1566.5810708.93 1566.59
   10715  1566.7 10720.9 1566.7610722.43  1566.810724.31 1566.8210724.49 1566.82
10726.66  1566.910726.96 1566.8910727.27 1566.8910728.89 1566.9410729.28 1566.93
10733.76    156710734.83 1566.9810736.54 1566.9510737.57 1566.9510738.87 1566.92
10740.51  1566.910741.91 1566.8310743.23  1566.810745.06 1566.7210747.11 1566.73
10749.14  1566.910751.56  1566.910753.71 1566.91 10754.9  1566.910758.62  1566.9
10760.83  1566.910766.24 1566.9410766.26 1566.9410766.42 1566.9410768.39 1566.94
10769.46  1566.910769.78 1566.9410773.23 1566.9210773.99 1566.9110778.05 1566.88
10779.25  1566.9 10781.3  1566.910783.14  1566.910784.52 1566.9110785.62  1566.9
10787.35  1566.910788.99 1566.8810791.41 1566.8510794.45 1566.8210796.82 1566.79
10802.61  1566.8 10804.5 1566.7510806.08 1566.73 10807.5 1566.7210810.61 1566.69
10811.65  1566.710814.74 1566.6510817.74 1566.6210818.31 1566.6110821.37 1566.58
 10821.7  1566.610821.81 1566.5810824.92 1566.5410824.95 1566.5410828.14 1566.69
10830.38  1566.810835.34 1567.1410839.13 1567.2110841.41 1567.2610843.52 1567.33
10853.08  1567.5 10855.1 1567.5910856.71 1567.6310858.68 1567.7210861.15 1567.77
10873.69    156810889.89 1568.4910930.49    157010952.96 1570.6610994.77 1571.99

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9606.68     .06 9702.89     .06 9969.33    .04510020.13    .05510051.21    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9969.3310020.13           269.34  278.55  369.36             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9606.68 9775.45    1570 10544.710994.77    1570

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 2.08

INPUT
Description: Extend cross section using topo for station 10699.03
Station Elevation Data    num=     389
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9471.11  1567.9 9495.49 1567.18 9500.14 1567.16  9502.9 1567.09 9506.51 1567.03
 9509.07    1567 9510.22 1566.93 9513.22 1566.82 9515.56 1566.81 9519.08 1566.77
 9523.03  1566.7 9526.91 1566.63 9527.24 1566.66 9528.72 1566.61 9530.65 1566.57
 9533.57  1566.6 9533.73 1566.57 9535.68 1566.66 9535.91 1566.66 9537.83 1566.53
 9546.54  1566.4 9563.92 1566.18 9565.51 1566.17 9565.64 1566.15    9567 1566.17
 9574.46  1566.3 9586.74 1566.17 9598.76 1566.07 9602.58 1566.05 9605.93    1566
 9613.45  1565.8 9614.08 1565.81  9614.8 1565.79 9615.39 1565.78 9615.78 1565.77
 9626.79  1565.5 9627.48 1565.47 9628.83 1565.44 9637.23 1565.26  9638.2 1565.22
 9639.16  1565.2 9640.16 1565.16 9646.88 1565.04 9648.09 1565.03  9649.6 1565.01
 9651.38    1565 9653.29 1564.95 9654.83 1564.92 9664.37 1564.78  9666.8 1564.73
 9668.57  1564.7 9670.41 1564.65 9672.63  1564.6 9674.83 1564.57 9676.98 1564.52
 9679.19  1564.5 9681.29 1564.42 9683.25 1564.36 9687.07 1564.21  9688.7  1564.2
 9689.74  1564.2 9690.52 1564.19 9691.74 1564.22 9693.94 1564.27 9702.74 1564.13
 9705.48  1564.1 9709.19 1564.02 9711.96 1564.01 9712.38    1564 9712.58    1564
 9714.87  1563.9 9715.25 1563.92  9715.8  1563.9 9725.27 1563.68 9726.54 1563.62
 9727.66  1563.6  9728.6 1563.53 9729.08 1563.51 9731.89 1563.39 9733.37 1563.32
 9735.26  1563.2 9736.43 1563.19 9738.77 1563.11 9739.21  1563.1 9742.17 1563.13
 9742.46  1563.1 9743.04 1563.11 9743.13 1563.11 9747.45 1563.11 9747.73 1563.12
 9749.33  1563.2 9752.47 1563.27  9755.1 1563.29 9756.64 1563.34 9758.72 1563.32
  9760.2  1563.3 9761.69 1563.25 9762.74 1563.23 9764.83 1563.27 9766.36  1563.3
 9767.85  1563.3 9768.84 1563.38 9770.61 1563.43 9771.53 1563.46 9773.86 1563.54
 9774.54  1563.6 9779.22  1563.7 9779.49  1563.7 9780.95 1563.65 9782.33 1563.68
 9784.14  1563.7 9788.63  1563.5 9789.24 1563.46 9793.27 1563.37 9796.48 1563.24
 9803.06  1563.1 9804.29 1563.07  9805.2 1563.07  9806.1 1563.03 9821.49 1562.33
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 9827.92    1562  9829.3 1561.93 9840.86 1561.36 9841.45 1561.39 9845.62 1561.62
 9847.23  1561.7 9848.45  1561.7 9854.74    1562 9858.97  1562.2 9859.48 1562.23
 9860.33  1562.3 9861.43 1562.36 9870.26 1562.55 9871.28 1562.53 9872.21 1562.46
 9872.63  1562.4 9873.08 1562.47 9874.24 1562.36 9874.83 1562.43 9875.27 1562.48
 9875.66  1562.5 9876.01 1562.51 9876.57 1562.52 9879.32 1562.06 9879.59    1562
 9883.75  1561.1 9884.24 1560.96  9885.8 1560.94 9886.01 1560.94  9888.4 1560.96
 9889.96    1561 9890.76 1560.96 9891.83 1560.97 9894.87    1561  9896.4 1561.02
 9897.89    1561  9901.2 1561.04 9902.35 1561.04 9905.25 1561.04  9906.2 1561.05
 9912.67  1561.1 9914.77 1561.08 9916.81 1561.04 9916.92 1561.04 9918.62 1561.03
  9918.7    1561 9920.21 1561.03 9920.26 1561.03 9921.75 1561.04 9921.78 1561.04
 9923.59    1561 9923.97 1561.04 9926.23 1561.03 9926.45 1561.01 9926.97 1560.99
 9931.09  1560.9 9933.09 1560.93 9933.69 1560.98 9935.39 1561.26 9937.33 1561.56
 9938.56  1561.7 9939.12 1561.84 9940.16    1562 9943.97 1562.61 9949.44 1563.47
 9956.81  1563.4 9965.95 1563.38 9973.16 1563.33 9977.22 1563.35 9978.05 1563.13
 9982.23    1562  9987.5 1560.55 9989.47    1560 9992.05  1559.3 9993.94 1558.79
   10000  1558.710020.22 1558.5510022.94 1558.5210023.14 1558.5710025.61 1559.08
10029.54    156010034.82 1561.2410038.29    156210041.95 1562.8910042.54 1563.02
10056.18  1562.3 10058.9  1562.210059.95 1562.15 10064.3    156210064.57 1561.99
10064.88    156210065.26 1561.9710065.76 1561.9610066.71 1561.9510074.49 1561.93
10075.23  1561.910076.16 1561.8810077.67 1561.9110091.75 1563.5110093.46 1563.73
10094.15  1563.810094.49 1563.8710095.68    156410096.35 1564.0710097.87 1564.27
10103.94    156510104.09    1565 10111.5 1564.9710132.16 1564.7910156.55 1564.62
10165.53  1564.610171.17 1564.5610177.41 1564.5310208.22  1564.310212.03 1564.27
10214.33  1564.310215.92 1564.2510235.54  1564.110247.63    156410261.74 1563.85
10271.03  1563.810271.51 1563.7710274.06  1563.8 10275.7 1563.8210276.93  1563.8
10277.21  1563.810281.75 1563.8110283.51 1563.7510285.39 1563.74   10287 1563.74
10289.14  1563.810290.41 1563.7810291.44  1563.810303.53 1563.8410304.79 1563.84
10306.95  1563.910307.38 1563.8610308.26 1563.8710309.17 1563.8710310.02 1563.88
10310.72  1563.9 10311.3 1563.89 10346.1 1563.9810346.26 1563.9810346.38 1563.98
10346.49    156410346.56 1563.9810346.62 1563.98 10346.7 1563.9810346.76 1563.98
10346.83    156410346.89 1563.9810356.86    156410360.88 1564.0110365.95 1564.01
10370.54    156410371.05    156410371.06    156410374.57    156410374.61 1563.97
10376.75 1563.9710382.53 1563.9210393.87 1563.7610398.89  1563.7 10403.5 1563.63
10407.79 1563.5910415.25 1563.51 10416.6  1563.510417.67  1563.510418.46 1563.53
10419.58 1563.5410421.02 1563.5410422.76 1563.5410425.71  1563.610430.07  1563.6
10436.19 1563.6810442.59 1563.7410449.04 1563.7810452.02  1563.810452.34 1563.75
   10464 1563.79 10475.6 1563.8610481.88 1563.9110488.82    156410489.21 1563.98
10489.87    156410497.62 1564.04 10503.9 1564.0610508.68  1564.110517.32 1564.03
10518.87 1564.0110520.13    156410521.11 1563.9810524.11  1563.910525.42 1563.88
10525.79 1563.8710526.35 1563.8410533.75  1563.510536.09  1563.410541.79 1563.17
10545.02    156310546.26 1562.96 10549.6 1562.7510550.23  1562.810550.43 1562.76
10555.97 1562.8710558.39 1562.8710563.89 1562.9110571.52  1562.910574.68 1562.85
10580.29 1562.8110583.32 1562.87 10584.1 1562.8910584.79  1562.910589.78 1563.06
10594.08 1563.1810595.44 1563.2310597.46  1563.310599.93  1563.410601.84 1563.39
 10608.9 1563.56 10609.8  1563.610610.45 1563.6310611.54  1563.710616.88 1563.78
10619.05 1563.8410619.41 1563.8510620.76 1563.9310622.13    156410630.18 1564.35
10637.89 1564.72 10641.5 1564.8610642.27 1564.8910645.84    156510647.75 1565.14
10648.81 1565.1610650.62 1565.2210651.57 1565.2610661.19  1565.610662.18 1565.63
10662.77 1565.6510663.41 1565.6710671.25    156610678.17  1566.210680.72  1566.3
 10692.8 1566.6810700.29 1566.9310713.24 1567.3110722.84  1567.710730.87    1568
10742.89 1568.1310759.86 1568.3210774.36 1568.4910786.73  1568.610807.48 1568.84
10832.92 1569.0410852.34 1569.1910862.86 1569.2710871.64  1569.310875.58 1569.35
10879.39 1569.3610885.79 1569.3710887.32 1569.37   10890  1569.310891.67 1569.35
10903.38 1569.4410918.99 1569.56 10951.8 1569.9310957.06    1570

Manning's n Values          num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9471.11     .06 9870.26     .06 9977.22    .04510042.54    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9977.2210042.54            498.06  502.15  512.37             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.99

INPUT
Description: Extended cross sections using topo from station 9449.54 and
             10609.73 to 10909.73
Station Elevation Data    num=     406
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9448.59    1566 9453.98 1565.88 9454.53 1565.87  9455.1 1565.86 9456.01 1565.85
 9467.29  1565.6  9468.3  1565.6 9469.17 1565.59 9469.96 1565.58 9470.64 1565.56
 9478.78  1565.4 9479.81 1565.34 9482.18 1565.18 9483.68 1565.13 9519.17 1564.62
 9524.64  1564.5 9538.66 1564.37 9577.19 1564.02 9578.51    1564 9580.53  1563.9
 9580.82  1563.9 9581.11 1563.88 9582.04 1563.86 9593.11 1563.35 9595.86  1563.3
  9598.7  1563.3  9601.9 1563.19    9606    1563 9616.27 1562.75 9618.88 1562.57
 9618.92  1562.6  9620.8 1562.47 9623.24 1562.53 9623.69 1562.54 9626.37 1562.58
 9628.96  1562.6 9630.96 1562.71 9631.57 1562.75 9638.58 1562.68 9645.27 1563.48
 9646.48  1563.5 9647.52 1563.37 9649.76  1563.3 9649.99 1563.29 9650.35 1563.29
 9650.88  1563.3 9651.28 1563.27 9651.72 1563.25 9655.43 1563.06 9656.91 1563.06
 9657.55  1563.1  9660.5 1562.79 9670.01 1562.59 9672.34 1562.49 9674.38 1562.41
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  9675.9  1562.4 9676.79 1562.52 9677.43 1562.54 9679.39 1562.52 9681.06  1562.5
 9681.39  1562.5 9695.31 1562.39 9701.21 1562.31 9706.55  1562.2 9713.19    1562
 9720.82  1561.8 9723.38 1561.77 9725.14 1561.76 9728.02 1561.73  9728.9 1561.73
  9730.1  1561.7 9738.71  1561.9 9744.25    1562 9746.06    1562 9746.36    1562
    9747    1562 9748.04 1561.99 9749.41 1561.97 9750.67 1561.95 9752.83 1561.91
 9756.43  1561.9 9763.71 1561.81 9765.64 1561.78  9771.9 1561.73 9772.89 1561.74
 9776.23  1561.8 9780.23 1561.86 9782.12 1561.88 9783.21 1561.91 9785.43 1561.96
 9786.12    1562 9786.93    1562 9790.04  1562.1 9802.49 1562.27 9805.72 1562.29
 9817.69  1562.4 9819.22 1562.37 9820.74  1562.4 9822.49 1562.41 9832.89 1562.71
 9835.95  1562.7 9838.67 1562.67 9913.07  1563.5  9913.8 1563.51 9914.35 1563.51
 9914.35  1563.5 9914.54 1563.44  9918.6    1562 9923.31 1560.37 9923.41 1560.32
 9923.83  1560.2 9924.29    1560 9925.63 1559.53 9929.96    1558 9933.13  1556.9
 9934.86  1556.3 9951.68 1557.38 9955.66 1557.64  9961.5    1558 9965.93 1558.31
 9969.51  1558.5 9972.38 1558.38 9979.63    1558 9981.27 1557.91 9982.04 1557.87
 9983.18  1557.8 9985.46 1557.72 9993.63 1557.35   10000    155710005.98 1556.79
10006.97  1556.910014.98    1558 10021.9 1558.9110025.95 1559.4910028.35 1559.53
10031.19  1559.6 10050.3    156010061.78    156010064.49    156010069.01    1560
 10074.7    156010079.14    156010083.46    156010088.93    156010093.71    1560
10095.31    156010096.92 1560.0710109.56 1560.0910120.38 1560.2310135.47    1560
10141.53    156010148.98 1559.9410161.89 1559.8710173.68 1559.8310181.72 1559.83
10187.91  1559.810193.37 1559.8710193.93 1559.8810194.61 1559.8810195.13  1559.9
10195.65  1559.910200.91 1559.9410201.33 1559.9610202.04 1559.9910207.61 1559.99
10208.34    156010210.17 1560.0110211.64    156010219.25    156010219.62 1559.99
10220.28    156010222.03  1559.910222.65  1559.910223.16 1559.8610228.51 1559.12
10236.47    155810236.79 1557.9510236.87 1557.9410237.18  1557.910237.82  1557.8
10240.01  1557.5 10242.2 1557.1810242.89 1557.2910244.16 1557.5810247.86    1558
10251.39  1558.510251.95 1558.5610253.37  1558.810254.38 1558.9410256.07  1559.1
10258.88  1559.410260.34 1559.5110262.89 1559.7110263.21 1559.7210264.57 1559.74
10266.49  1559.810266.85 1559.85 10268.2 1559.9210269.84 1559.9610272.87 1559.96
10273.87    156010275.72 1559.9510276.42 1559.9510278.47 1559.8610281.25 1559.74
10283.68  1559.610288.81 1558.9110291.69 1558.5710292.36 1558.4810295.72    1558
10298.07  1557.610299.07 1557.4910299.25 1557.4610302.27 1557.7810303.12 1557.84
10306.16  1557.910306.74 1557.9310307.85 1557.9310308.45 1557.9110309.36 1557.88
10315.63  1557.710316.62 1557.6610317.71 1557.6210318.63 1557.5810318.98 1557.63
 10319.8  1557.810320.76    155810325.69 1558.6710329.04 1559.2610330.74  1559.6
   10331  1559.710332.95    156010336.05 1560.44 10338.5 1560.8310342.46 1560.87
 10352.2  1561.110359.09 1561.2310365.29 1561.33 10369.5 1561.42 10373.9  1561.5
10375.79  1561.510377.95 1561.5510379.85 1561.5810390.03 1561.8910390.73  1561.9
10392.35  1561.9 10392.7 1561.9410394.41    156210396.25 1562.0210403.44 1562.06
10425.29  1562.2 10426.5  1562.210427.66  1562.210429.63  1562.210435.57 1562.21
10437.68  1562.210439.29 1562.2510442.99 1562.2510444.42 1562.2710445.84 1562.31
10447.55  1562.310450.06 1562.3710452.44 1562.3710455.74 1562.3610461.12 1562.38
 10462.9  1562.410464.41 1562.3310465.58 1562.3310466.72 1562.3310467.64 1562.33
10475.18  1562.310477.99 1562.3910479.65 1562.4310481.42 1562.4510486.28  1562.5
   10488  1562.510490.82 1562.5810492.22  1562.6 10493.7 1562.5910495.09 1562.61
10496.37  1562.610497.67 1562.6310499.87 1562.6510507.53 1562.6510508.81 1562.65
 10510.5  1562.710512.89 1562.6610516.07 1562.6610519.22 1562.6610521.73 1562.63
 10525.6  1562.610527.55 1562.6510529.23 1562.7110532.28 1562.7810533.93 1562.81
10535.41  1562.810536.48 1562.8310537.54 1562.8410541.55 1562.8510542.97 1562.85
10544.46  1562.910546.16 1562.86 10587.1 1563.0410588.67 1563.0510591.41 1563.05
10592.97  1563.1 10594.7 1563.0610596.23 1563.07 10597.7 1563.0710598.94 1563.05
10599.74  1563.110600.39 1563.0510600.77 1563.0610601.18 1563.0610602.91 1563.07
10604.04  1563.110606.63 1562.9910607.84 1562.9810608.51 1562.9810609.21 1562.98
10610.08    156310610.62 1562.9810611.17 1562.9810611.69 1562.9810612.53 1562.98
10613.14    156310637.89 1562.7110642.34 1562.6410649.49 1562.5210652.43 1562.46
10666.35  1562.210679.78    1562 10684.1 1561.7410684.61 1561.7210685.71 1561.65
10688.38  1561.510692.62 1561.16 10694.6 1560.6110695.81 1560.2610696.12 1560.18
 10696.8    156010703.99 1558.0210704.07    155810704.09 1557.9910704.16    1558
10704.99 1557.7510709.18 1557.7710716.48 1557.8710716.86 1557.9510717.27    1558
10724.17 1559.3510727.53    156010736.75 1561.7610737.91    156210738.19  1562.1
10738.31 1562.0810738.55 1562.1210740.12  1562.410743.81 1563.1110750.01  1563.2
10761.58 1563.4610765.59 1563.5510768.04 1563.6210772.18 1563.6910775.26  1563.8
10785.53    156410790.33 1564.1510792.32 1564.1710794.75 1564.1710806.67    1564
10808.36    156410813.09 1563.7910819.48 1563.5510832.35 1563.1110837.18  1563.3
10837.61 1563.3210838.18 1563.3310838.93 1563.3210839.79 1563.2410841.05  1563.3
10842.99 1563.3710848.28 1562.5710849.66 1562.38 10852.5    156210852.85  1561.9
10852.99 1561.9310855.72 1561.8210857.04 1561.7610862.96 1561.47 10865.1  1561.4
10867.55 1561.2710870.31 1561.1110871.59 1561.0610873.86 1560.9410876.28  1560.8
10879.11 1560.7510882.52 1560.6110887.52 1561.0410890.49 1561.2810893.79  1561.5
10896.54 1561.73   10897 1561.7710897.32 1561.8110899.72    156210914.82  1563.2
10924.52    1564

Manning's n Values          num=        5
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
 9448.59     .06   9913.8    .04510025.95    .05510222.03    .05510272.87    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9913.810025.95            403.84  411.33  415.61              .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev
 9448.59  9912.1    1564
```

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 1.90

INPUT
Description: Realigned cross section from 10321.05 to 10559.63
Station Elevation Data num= 245

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9558.92	1561.8	9559.07	1561.82	9565.85	1561.6	9569.6	1561.49	9618.83	1560
9627.04	1559.7	9628.01	1559.71	9629.15	1559.65	9630.14	1559.59	9630.8	1559.56
9632.34	1559.6	9635.15	1559.6	9638.38	1559.58	9638.69	1559.58	9638.71	1559.58
9641.17	1559.6	9641.41	1559.55	9643.46	1559.52	9643.97	1559.51	9646.53	1559.49
9646.89	1559.5	9649.4	1559.47	9650.44	1559.47	9653.09	1559.45	9654.07	1559.44
9655.4	1559.4	9657.56	1559.41	9658.99	1559.4	9660.04	1559.37	9661.27	1559.37
9661.89	1559.4	9662.36	1559.35	9662.74	1559.33	9663.1	1559.32	9670.76	1559.52
9671.77	1559.5	9672.6	1559.54	9675.28	1559.5	9676.07	1559.5	9676.87	1559.48
9678.16	1559.5	9679.18	1559.43	9680.15	1559.44	9746.34	1558.79	9752.35	1558.71
9761.31	1558.6	9763.95	1558.55	9777.01	1558.36	9779.38	1558.38	9779.57	1558.39
9793.04	1558.5	9794.93	1558.55	9796.76	1558.57	9810	1558.72	9813.41	1558.77
9818.57	1558.8	9827.5	1558.92	9832.18	1558.96	9835.69	1558.98	9838.2	1559.01
9849.57	1559.1	9858.44	1559.23	9859.6	1559.25	9860.93	1559.27	9867.53	1559.35
9872.97	1559.4	9874.1	1559.34	9877.75	1559.09	9885.02	1558.52	9886.98	1558.5
9910.67	1558.3	9923.84	1558.14	9927.08	1558.12	9937.93	1558	9940.59	1557.93
9959.33	1557.4	9967.59	1557.26	9967.92	1557.12	9968.37	1556.91	9970.35	1556
9973.75	1554.5	9975.11	1554	9977.98	1552.74	9979.79	1552	9980.15	1551.84
9980.23	1551.8	9980.39	1551.69	9980.81	1551.47	9981.84	1551.03	10000	1550.97
10000.42	1551	10003.31	1550.95	10003.63	1551.02	10005.99	1551.63	10007.57	1552
10010.09	1552.6	10016.3	1554	10018.21	1554.43	10019.24	1554.65	10022.95	1555.52
10033.34	1555.6	10042.5	1555.61	10047.39	1555.62	10047.5	1555.62	10047.92	1555.6
10051.39	1555.7	10055.55	1556	10071.33	1556.62	10078.83	1556.97	10079.72	1557.02
10080.68	1557.1	10083.2	1557.13	10084.89	1557.18	10087.26	1557.28	10089.98	1557.38
10090.6	1557.4	10091.07	1557.41	10091.22	1557.41	10092.38	1557.44	10101.38	1557.63
10101.79	1557.6	10115.83	1557.97	10116.96	1558	10117.07	1558	10124.84	1558
10125.39	1558	10125.83	1558	10126.25	1558	10130.12	1558	10142.4	1557.88
10147.09	1557.9	10155	1557.99	10155.28	1558	10194.64	1558.47	10220.04	1558.8
10232.63	1559	10245.78	1559.13	10265.98	1559.42	10283.12	1559.62	10305.55	1559.9
10314.14	1560	10314.79	1559.98	10315.42	1559.98	10322.06	1560	10327.04	1560
10343.32	1560	10358.37	1560	10368.4	1560	10373.95	1560	10374.45	1560
10377.91	1560	10383.05	1559.99	10387.11	1559.99	10391.19	1559.99	10395.32	1559.99
10397.82	1560	10399.33	1559.97	10399.8	1559.96	10455.8	1558.92	10458.82	1558.89
10463.96	1558.7	10467.96	1558.53	10468.94	1558.24	10469.26	1558.17	10469.42	1558.15
10470.08	1558	10471.65	1557.54	10476.97	1556	10477.54	1555.84	10483.38	1554.29
10483.87	1554.2	10484.01	1554.15	10497.21	1554.13	10499.7	1554.78	10509.3	1556
10510.92	1556.2	10511.18	1556.24	10511.41	1556.25	10512	1556.29	10512.33	1556.31
10514.1	1556.5	10520.95	1557.19	10523.07	1557.37	10524.11	1557.5	10524.88	1557.6
10528.59	1557.7	10530.98	1557.81	10531.21	1557.83	10533.77	1558	10534.52	1558.04
10534.79	1558.1	10536.1	1558.26	10538.78	1558.52	10539.89	1558.64	10541.57	1558.79
10542.32	1558.8	10546.18	1559.04	10550.35	1559.23	10553.18	1559.38	10555.71	1559.54
10557.59	1559.7	10559.52	1559.73	10561.77	1560	10563.15	1560.09	10563.77	1560.09
10564.74	1560.1	10565.83	1560.09	10566.22	1560.1	10566.53	1560.11	10566.77	1560.13
10566.98	1560.2	10567.21	1560.18	10567.5	1560.2	10567.74	1560.22	10571.29	1560.45
10575.57	1560.6	10577.9	1560.74	10579.28	1560.79	10580.19	1560.81	10580.85	1560.82
10582	1560.8	10583.66	1560.82	10588	1560.81	10591.78	1560.81	10593.74	1560.81
10594.01	1560.8	10594.21	1560.81	10594.63	1560.79	10598.02	1560.85	10599.93	1560.87
10601.42	1560.9	10602.67	1560.95	10604.94	1561.02	10609.72	1561.06	10610.58	1561.07
10612.67	1561.1	10614.21	1561.06	10657.31	1561.38	10661.89	1561.44	10674.5	1561.62
10676.21	1561.6	10691.31	1561.8	10698.92	1561.97	10712.7	1561.98	10723	1562

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9558.92	.06	9872.97	.06	9967.59	.045	10022.95	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967.59	10022.95	350.25	330.65	384.15	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 1.84

INPUT
Description: Realigned cross section starting from 9890.69
Station Elevation Data num= 184

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9334.62	1560	9358.87	1559.74	9362.18	1559.7	9371.86	1559.6	9376.17	1559.54
9381.17	1559.5	9394.12	1559.37	9408.3	1559.18	9422.86	1558.99	9428.39	1558.93
9432.87	1558.9	9436.68	1558.87	9441.24	1558.84	9446.36	1558.81	9451.84	1558.77
9457.18	1558.7	9462.47	1558.71	9468.63	1558.68	9473.76	1558.66	9478.75	1558.63
9482.54	1558.6	9487.25	1558.59	9493.18	1558.54	9500.78	1558.45	9508.45	1558.36
9516.18	1558.3	9523.95	1558.14	9524.89	1558.14	9533.38	1558.04	9533.56	1558.04
9533.66	1558	9533.73	1558.04	9533.78	1558.04	9533.9	1558.04	9533.96	1558.04
9538.17	1558	9544.32	1557.95	9555.52	1557.89	9567.29	1557.8	9573.34	1557.7
9587.2	1557.6	9640.63	1556.34	9677.89	1556.24	9680.1	1556.23	9684.49	1556.22

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 9695.56  1556.2 9698.05 1556.22 9699.41 1556.23 9700.38 1556.24 9763.13 1556.23
 9765.99  1556.2 9815.91 1556.33 9822.55 1556.34 9843.43 1556.45 9850.76 1556.57
 9892.17  1556.9 9894.08 1556.92 9894.75 1556.92 9895.97 1556.92  9900.3 1556.91
 9902.58  1556.9 9904.71 1556.88 9909.36 1556.81 9910.17  1556.8 9910.59  1556.8
 9911.26  1556.8 9912.65 1556.78 9913.61 1556.76 9915.86 1556.73  9916.5 1556.73
 9921.07  1556.7 9933.18 1556.48    9934 1556.45 9934.69 1556.42 9937.16 1556.38
 9953.28  1556.3 9955.91 1556.21 9964.68 1556.07 9967.34 1556.02 9967.77    1556
 9975.82  1555.6 9978.53 1555.45 9981.46 1554.23 9981.94    1554  9982.5 1553.75
 9983.57  1553.3 9985.77  1552.3 9986.59    1552 9988.97 1551.05 9991.39    1550
 9991.89  1549.8 9992.46  1549.6 9992.63 1549.53 9997.48 1549.42   10000 1549.25
10009.11  1549.110010.45 1549.3810012.68 1549.7710013.95    155010022.21 1551.49
 10024.6    155210026.97  1552.510034.02    155410035.07 1554.29 10035.4 1554.33
10036.46  1554.310042.41    155410045.82 1553.8710046.07 1553.8510048.32 1553.91
10050.19    155410088.99 1555.4710096.89 1555.7610099.95 1555.8710101.06 1555.91
 10101.4  1555.910103.34    1556 10104.4 1556.0210115.28 1556.2110136.51 1556.55
10177.94  1556.610206.21 1556.7410207.76 1556.7410209.64  1556.710211.61 1556.63
 10214.8  1556.610224.47 1556.4210238.33 1556.2110243.48 1556.1410252.43    1556
10254.04  1555.910256.74 1555.83 10256.9 1555.8210257.69 1555.5710262.09 1554.19
10262.69    155410263.38 1553.7910269.07    155210271.56 1551.2410271.92 1551.13
10275.12  1550.910280.21 1550.4610285.04 1551.7410285.69 1551.9210285.82 1551.95
 10285.9    155210286.01    155210286.09 1552.0210293.53    155410293.96 1554.12
10294.14  1554.210294.86 1554.3410300.94    155610302.04 1556.17 10302.3 1556.21
10308.24    155610309.68    155610312.55 1555.8910315.16 1555.82   10318 1555.75
10319.77  1555.710322.51 1555.6610328.48  1555.510338.66 1555.2710339.79 1555.37
10347.48    155610357.45 1556.7810368.23 1557.6810368.43  1557.710368.46  1557.7
 10368.5  1557.710371.97 1557.8710376.45    155810377.37 1558.0210377.49 1558.03
10381.36  1558.210383.06 1558.2210386.39 1558.36 10424.1 1559.5410425.13 1559.57
10425.87  1559.6 10440.2    156010453.36 1560.1410454.56 1560.15

Manning's n Values         num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9334.62     .06 9892.17     .06 9978.53    .045 10035.4    .05510256.74    .036
 10302.3     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9978.53 10035.4            217.35  381.23  448.24              .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.77

INPUT
Description:
Station Elevation Data     num=     106
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9257.17    1558 9457.17  1555.7    9468  1555.5 9486.99 1555.32 9495.81 1555.17
  9504.6  1555.1 9514.93 1555.11 9518.77  1555.1 9522.54 1554.62  9527.8    1554
 9528.88 1553.89 9534.29 1553.23 9539.91  1553.6 9542.68    1554 9546.02 1554.26
 9548.03 1554.43 9549.32  1554.6 9551.98 1554.72 9560.28 1554.75 9570.31 1554.83
 9581.06 1554.78 9594.35 1554.72 9609.58 1554.61 9618.98 1554.65 9629.67 1554.72
 9650.43 1554.63 9664.46 1554.56 9677.14 1554.46 9702.14 1554.43 9712.59  1554.4
 9732.91  1554.7 9747.09 1554.78 9759.64 1554.77 9771.16 1554.69 9780.79  1554.6
 9794.12 1554.49 9804.13  1554.4  9815.5  1554.3 9835.15 1554.09 9843.48    1554
  9852.2 1553.92 9861.74 1553.86 9890.55 1553.66 9900.06 1553.86 9911.62  1554.1
 9912.15 1554.08 9912.84    1554 9914.24 1553.83 9917.39  1553.4 9921.37  1552.8
 9928.72 1552.63 9936.19 1552.42 9940.35  1552.3 9944.96 1552.17 9945.19  1552.1
 9945.56 1552.02 9945.72    1552 9953.69 1550.05 9953.89    1550 9954.14  1549.9
 9961.63    1548 9963.06 1547.73  9963.4 1547.68  9973.7 1546.83 9983.65    1546
 9985.12 1545.88 9986.32 1545.79 9988.82 1545.58 9989.04 1545.67 9989.91    1546
 9992.33 1546.89 9995.37    1548 9996.91 1548.5810000.42    155010002.79  1550.8
10006.33    155210008.23 1552.6910011.94    155410012.18 1554.0910013.61  1554.6
10014.28 1554.8510018.54 1554.8410066.23 1554.8810086.76 1554.8810097.53  1554.8
10130.49    155510135.02 1555.0110172.88  1554.310196.21    155410197.82  1553.9
10200.91 1553.8410201.68 1553.8110202.94  1553.710210.03 1553.4510210.94 1553.42
10212.24 1553.4710220.09 1553.8110225.74    155410231.42 1554.1410236.29 1554.28
10295.23    155610361.03 1556.8210380.84    155710387.15 1557.1310397.48 1557.55
10403.36 1557.84

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9257.17     .05 9570.31     .05 9911.62    .0410014.28    .0510135.02     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9911.6210014.28            210.81  279.94  312.97              .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.72

INPUT
Description:
Station Elevation Data     num=      79
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
 9325.95    1556 9336.12 1555.88 9407.34 1554.88 9434.88  1554.2  9460.6 1553.93
  9470.2  1554.1 9481.25  1554.1    9490 1554.11  9513.1    1554 9517.84 1553.96
 9526.45  1553.9 9535.25 1553.86 9544.28 1553.81 9617.55 1553.64 9635.34 1553.57
 9650.94  1553.5 9664.21 1553.45 9674.85 1553.41 9683.75 1553.38 9691.46 1553.35
 9700.51  1553.3 9712.81  1553.3 9721.25  1553.2 9731.03 1553.23  9742.2  1553.2
 9751.44 1553.24 9760.81 1553.25 9846.78  1552.4 9914.09 1552.05 9922.46    1552
 9947.62 1551.22  9961.5 1550.82 9961.73  1550.7 9962.46 1550.43 9963.76    1550
 9968.43 1548.69 9970.82    1548 9975.86  1546.5 9977.77    1546 9979.96 1545.34
 9980.92 1545.06 9984.17 1544.97 9989.21  1544.8  9995.9 1544.7110002.51 1544.57
10004.68 1545.2710005.68 1545.6210006.89    154610012.21 1547.7210013.12    1548
10014.51 1548.3710020.08    155010020.68  1550.210025.84 1551.1310027.38 1551.26
10028.17 1551.3210030.35  1551.410041.02 1551.7710052.02  1551.910059.79    1552
10069.61 1552.0810079.13 1552.1310113.64 1552.7610162.63  1553.810171.74    1554
10172.37    155410184.05 1554.0610194.69 1554.09 10194.9  1554.110203.92 1554.12
10218.98  1554.410315.49 1555.3410324.47  1555.310339.11  1555.310350.57 1555.44
10359.19  1555.510372.16 1555.6910379.93 1555.7810390.38  1555.9

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9325.95     .05 9922.46     .0410025.84     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9922.4610025.84               111     111     111              .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.699

INPUT
Description:
Station Elevation Data    num=     148
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9317.08    1556 9327.51 1555.88 9347.53 1555.61 9371.61 1555.25 9398.03 1554.88
 9400.53 1554.84 9418.67  1554.4 9428.77 1554.18 9437.42 1554.08 9450.48 1553.85
 9455.14 1553.76 9462.95 1553.77 9464.98 1553.79 9476.31 1553.76 9485.29 1553.74
 9508.97  1553.6 9513.83 1553.56 9522.66 1553.49 9531.68 1553.44 9540.94 1553.38
 9571.97 1553.25 9591.54  1553.2 9601.75 1553.17 9616.07 1553.12 9628.71 1553.07
 9634.31 1553.04 9645.97 1552.97  9650.3 1552.95 9654.57 1552.93 9663.91 1552.91
 9674.82 1552.89 9681.11 1552.88 9683.94 1552.87 9686.67 1552.87 9691.85 1552.85
 9695.69 1552.84 9701.13 1552.82 9713.74 1552.82 9722.39 1552.75 9732.42 1552.77
 9735.37 1552.76 9743.87 1552.73  9745.3 1552.73 9798.22 1543.91 9867.14 1543.91
  9913.7 1551.67  9928.7 1551.56 9932.01 1551.47 9935.53 1551.32  9941.7 1551.06
 9942.67 1551.02 9943.12 1551.01 9944.14 1550.97 9948.96 1550.77 9949.84  1550.7
 9950.38 1550.66 9960.74 1549.99  9961.5 1549.95  9961.7 1549.85 9962.31 1549.64
  9963.4  1549.3 9966.17 1548.55 9967.32 1548.23 9969.33 1547.67 9973.57 1546.44
 9975.17 1546.02 9975.77 1545.85 9977.01 1545.48 9977.82 1545.25 9980.55 1545.07
 9984.78 1544.75 9988.96 1544.51  9990.4 1544.44 9994.27  1544.2 9995.96  1544.1
 9998.69 1544.61 9999.95 1544.8610001.48 1545.14 10003.5 1545.5110008.18 1546.38
10009.33 1546.5910011.08 1546.8510011.16 1546.8710011.25 1546.8810011.87 1547.07
10012.76 1547.3310014.91 1548.0110016.82 1548.59 10018.1    154910018.86 1549.26
10020.42 1549.6710020.56 1549.7110020.85 1549.7810024.71 1550.7310025.27 1550.89
10025.36 1550.9110027.05    155110027.92 1551.0410030.31 1551.0910039.08 1551.28
10042.04 1551.3410054.12 1551.4410058.22 1551.4710062.66 1551.5110068.64 1551.55
10073.45 1551.5910083.91 1551.6610086.42 1551.6910102.79 1551.9210119.31 1552.14
10121.82 1552.1610136.66 1552.3210158.68 1552.5510163.97 1552.6110175.64 1552.75
10185.65 1552.8710186.34 1552.8710189.98 1552.8810199.17 1552.9610207.93 1553.02
10210.86 1553.0510211.09 1553.0610220.62 1553.15   10221 1553.1610228.36  1553.3
10237.55 1553.4810265.57 1553.8510281.12 1554.0810298.48  1554.310311.63 1554.49
10329.78 1554.5610334.89 1554.5710343.07 1554.6310343.58 1554.6310353.44 1554.61
10354.49 1554.6110361.97  1554.610369.53 1554.6110370.63 1554.6210382.12 1554.76
10391.59 1554.8410395.39 1554.8910403.74    155510405.83 1555.0310412.43 1555.11
10414.37 1555.1310421.29 1555.2110425.85 1555.24

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9317.08     .05  9745.3    .035  9913.7     .05  9928.7     .0410025.36     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9745.3  9913.7                .89       1    1.12              .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.69878

INPUT
Description:
Station Elevation Data    num=     149
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9316.99    1556 9327.42 1555.88 9347.45 1555.61 9371.53 1555.25 9397.96 1554.88
 9400.46 1554.83 9418.61  1554.4 9428.71 1554.18 9437.36 1554.08 9450.42 1553.85
 9455.08 1553.76  9462.9 1553.77 9464.93 1553.79 9476.26 1553.75 9485.24 1553.74
 9508.93  1553.6 9513.79 1553.55 9522.62 1553.49 9531.64 1553.44 9540.91 1553.38
 9571.95 1553.24 9591.52  1553.2 9601.73 1553.17 9616.05 1553.12  9628.7 1553.06
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  9634.3 1553.03 9645.96 1552.97  9650.3 1552.95 9654.57 1552.93 9663.91 1552.91
 9674.82 1552.88 9681.11 1552.87 9683.94 1552.87 9686.68 1552.86 9691.85 1552.85
  9695.7 1552.84 9701.13 1552.81 9713.75 1552.81  9722.4 1552.74 9732.43 1552.76
 9735.38 1552.76 9743.89 1552.72 9745.68  1552.7 9804.42 1542.91 9861.26 1542.91
 9913.76 1551.66 9920.18 1551.62 9928.76 1551.56 9932.06 1551.46 9935.58 1551.32
 9941.74 1551.06 9942.71 1551.02 9943.16    1551 9944.18 1550.96 9948.99 1550.76
 9949.86  1550.7  9950.4 1550.66 9960.74 1549.98  9961.5 1549.94 9961.69 1549.85
 9962.31 1549.63  9963.4 1549.29 9966.16 1548.54 9967.31 1548.23 9969.32 1547.66
 9973.54 1546.44 9975.14 1546.02 9975.74 1545.85 9976.98 1545.48 9977.79 1545.25
 9980.51 1545.07 9984.74 1544.75 9988.91 1544.51 9990.35 1544.43 9994.21  1544.2
 9995.89 1544.09 9998.63  1544.6 9999.89 1544.8510001.42 1545.1310003.45  1545.5
10008.14 1546.3710009.29 1546.5710011.05 1546.8410011.12 1546.8510011.21 1546.86
10011.84 1547.0610012.73 1547.3210014.88    154810016.79 1548.5810018.08 1548.99
10018.84 1549.25 10020.4 1549.6610020.55  1549.710020.83 1549.78 10024.7 1550.72
10025.26 1550.8810025.36 1550.9110027.05    155110027.92 1551.0410030.31 1551.09
10039.09 1551.2710042.05 1551.3410054.14 1551.4310058.24 1551.4710062.69 1551.51
10068.68 1551.5510073.49 1551.5910083.95 1551.6510086.47 1551.6910102.86 1551.92
10119.39 1552.13 10121.9 1552.1510136.75 1552.3110158.79 1552.54 10164.1  1552.6
10175.77 1552.7410185.79 1552.8610186.48 1552.8610190.12 1552.8710199.33 1552.95
10208.09 1553.0110211.03 1553.0410211.26 1553.0510220.79 1553.1410221.18 1553.15
10228.54 1553.2910237.74 1553.4710265.79 1553.8510281.35 1554.0710298.72 1554.29
10311.88 1554.4810330.05 1554.5610335.17 1554.5610343.35 1554.6210343.86 1554.62
10353.73  1554.610354.78  1554.610362.27  1554.610369.83  1554.610370.94 1554.61
10382.43 1554.7510391.91 1554.8310395.72 1554.8810404.08 1554.9910406.18 1555.02
10412.78 1555.1110414.72 1555.1310421.64  1555.210426.21 1555.23

Manning's n Values         num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9316.99     .05 9745.68    .035 9804.42     .04 9861.26    .035 9913.76     .05
 9928.76     .0410025.36     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9745.68 9913.76            87.22      98  109.76             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.678

INPUT
Description:
Station Elevation Data    num=     148
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9308.21    1556 9318.89 1555.87 9339.42 1555.61 9364.08 1555.22 9391.16 1554.84
 9393.72 1554.79 9412.31 1554.36 9422.66 1554.16 9431.52 1554.04  9444.9 1553.72
 9449.68 1553.59 9457.68 1553.47 9459.77 1553.48 9471.38 1553.42 9480.57 1553.37
 9504.84  1553.2 9509.82 1553.16 9518.87 1553.09 9528.11 1553.02  9537.6 1552.95
  9569.4 1552.76 9589.45 1552.71 9599.91 1552.67 9614.58  1552.6 9627.54 1552.54
 9633.27  1552.5 9645.22 1552.43 9649.66  1552.4 9654.04 1552.38 9663.61 1552.38
 9674.78 1552.37 9681.24 1552.36 9684.14 1552.37 9686.93 1552.37 9692.24 1552.36
 9696.18 1552.35 9701.74 1552.34 9714.67 1552.33 9723.54 1552.29 9733.81  1552.3
 9736.83  1552.3 9745.55 1552.26 9745.86 1552.269803.1361542.6949868.7241542.694
 9919.94 1551.23 9934.94 1551.12 9937.62 1551.06 9940.47  1550.9 9945.47 1550.61
 9946.25 1550.56 9946.62 1550.55 9947.45  1550.5 9951.35 1550.28 9952.06 1550.18
  9952.5 1550.12 9960.88 1549.14  9961.5 1549.07 9961.66 1549.01 9962.16 1548.85
 9963.04  1548.6 9965.28 1548.02 9966.22 1547.77 9967.84 1547.33 9971.27 1546.38
 9972.57 1546.05 9973.06 1545.91 9974.06 1545.63 9974.72 1545.44 9976.93 1545.17
 9980.36 1544.71 9983.74 1544.29 9984.91 1544.16 9988.04 1543.79 9989.41 1543.62
 9992.71 1543.94 9994.23  1544.1 9996.07 1544.27 9998.51 1544.5110004.16 1545.05
10005.54 1545.1710007.65 1545.3410007.74 1545.3510007.86 1545.34 10008.6 1545.59
10009.68  1545.910012.27 1546.7610014.57 1547.4810016.12 1548.0110017.03 1548.33
10018.92 1548.9110019.09 1548.9810019.43 1549.0810024.09 1550.4110024.77 1550.66
10024.88 1550.6910026.72 1550.7410027.67 1550.7610030.28 1550.7910039.84 1550.87
10043.05 1550.9110056.22 1550.9810060.69    155110065.53 1551.0310072.05 1551.06
10077.28  1551.110088.68 1551.1810091.42 1551.2210109.26  1551.410127.26 1551.56
   10130 1551.5610146.17 1551.5910170.16 1551.6310175.94 1551.6410188.65 1551.69
10199.56 1551.7410200.31 1551.7410204.28 1551.74 10214.3 1551.8510223.84 1551.96
10227.04 1552.0110227.29 1552.0210237.67 1552.1910238.09 1552.19 10246.1 1552.36
10256.12 1552.5510286.66 1553.06 10303.6 1553.3710322.52 1553.6610336.85 1553.92
10356.63 1553.91 10362.2 1553.8710371.11 1553.9210371.66 1553.9210382.41 1553.91
10383.55 1553.9110391.71 1553.9110399.94 1553.9210401.14 1553.9210413.66 1554.07
10423.98 1554.1710428.13 1554.2210437.23 1554.3410439.51 1554.37 10446.7 1554.46
10448.81 1554.4910456.35 1554.5610461.32 1554.58

Manning's n Values         num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9308.21     .05 9745.86    .0359803.136     .049868.724    .035 9919.94     .05
 9934.94     .0410024.88     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9745.86 9919.94           117.48     132  147.84             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
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```
REACH: Reach 1            RS: 1.65

INPUT
Description:
Station Elevation Data    num=      78
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9296.38    1556 9328.59 1555.62 9354.05 1555.19    9382 1554.79 9403.83  1554.3
 9423.66    1554 9437.47 1553.54 9450.66 1553.08 9565.97  1552.1 9586.66 1552.05
 9597.46    1552 9625.98 1551.84 9644.23  1551.7 9653.33 1551.65  9681.4 1551.68
 9687.28  1551.7 9696.82  1551.79728.549  1551.79783.8991542.475 9874.291542.475
 9928.26 1551.47 9943.26 1550.54  9945.1 1550.51 9947.06 1550.33 9950.49    1550
 9951.03 1549.95 9951.28 1549.93 9951.85 1549.88 9954.53 1549.63 9955.32  1549.4
 9961.08    1548  9964.1 1547.32 9969.44    1546  9972.1  1545.3 9976.78    1544
 9979.73 1543.24 9980.67 1542.99 9991.85 1543.1710003.19 1543.3210003.33  1543.3
10004.25 1543.6210005.57    154410008.75  1545.110011.58    154610016.92  1547.9
10017.13    154810017.55 1548.1510023.27    1550 10024.1 1550.3510024.24  1550.4
10040.84 1550.3410063.98 1550.3710076.59  1550.410098.09 1550.5810117.89  1550.7
10137.87 1550.7810158.85 1550.6210185.48  1550.410191.89 1550.3510223.34 1550.22
10245.05 1550.54 10260.4  1550.910269.76  1551.110314.77    155210333.57 1552.42
10354.57 1552.8110370.47 1553.1710392.43 1553.0410398.61 1552.94 10408.5 1552.97
10422.31 1552.9910431.36 1552.9810441.83    155310471.78 1553.3410481.88 1553.46
10492.39  1553.6 10503.1  1553.710508.62  1553.7

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9296.38     .059728.549    .035 9928.26     .05 9943.26     .0410024.24     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      9728.549 9928.26             1.01       1       1              .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.64981

INPUT
Description:
Station Elevation Data    num=     152
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9296.96 1555.99 9329.14 1555.61 9348.92 1555.28 9354.57 1555.18 9382.49 1554.78
 9402.64 1554.33  9404.3 1554.29 9424.11 1553.99  9437.9 1553.53 9451.08 1553.07
 9497.84 1552.67 9566.27 1552.09 9567.55 1552.09 9586.94 1552.04 9593.19 1552.01
 9597.73 1551.99 9623.61 1551.85 9626.22 1551.83 9644.45 1551.69 9644.65 1551.69
 9653.54 1551.64 9661.63 1551.65 9674.26 1551.66 9680.39 1551.67 9681.58 1551.67
 9687.45 1551.69 9696.98 1551.69 9728.68 1551.68 9795.97 1540.47 9862.35 1540.47
 9918.41 1549.81 9925.08 1550.92 9928.33 1551.46 9931.89 1551.24 9932.45 1551.21
 9938.09 1550.86 9940.85 1550.68 9943.28 1550.53 9943.33 1550.53 9945.17  1550.5
 9947.13 1550.31 9947.37 1550.29 9948.03 1550.23 9950.56 1549.98 9950.91 1549.95
  9951.1 1549.93 9951.35 1549.91 9951.92 1549.86 9952.46 1549.81 9954.61 1549.61
  9955.4 1549.39 9956.73 1549.06 9961.16 1547.99 9964.18 1547.31 9969.52 1545.99
 9970.65  1545.7 9971.79  1545.4 9972.18 1545.29 9973.32 1544.98 9974.79 1544.57
 9975.64 1544.33 9976.86    1544 9979.48 1543.32 9979.81 1543.24 9980.75 1542.99
 9981.17    1543 9984.43 1543.05 9987.33  1543.1  9989.6 1543.14 9991.63 1543.17
 9991.93 1543.18  9994.5 1543.21 9995.69 1543.2310002.35 1543.3210003.28 1543.33
10003.42 1543.3110004.34 1543.6310005.66 1544.0110008.84  1545.110011.67    1546
10017.01  1547.910017.22    154810017.64 1548.1510023.36    155010024.19 1550.34
10024.33 1550.3910039.02 1550.3410040.93 1550.3410047.64 1550.3410057.31 1550.36
10064.08 1550.3610076.69 1550.39 10098.2 1550.5710099.65 1550.5810108.23 1550.63
   10118 1550.6910137.99 1550.7710143.92 1550.7310152.91 1550.6610157.76 1550.62
10158.97 1550.6110172.02 1550.5110183.67 1550.4110185.61 1550.3910192.02 1550.35
10192.44 1550.3410203.31  1550.3 10209.3 1550.2710222.34 1550.2210223.48 1550.22
 10229.1  1550.310236.59 1550.4110245.19 1550.5410245.28 1550.5410254.17 1550.75
10260.54  1550.910263.51 1550.9610269.91 1551.0910274.95  1551.210298.44 1551.66
 10304.2 1551.7810310.95 1551.9110314.93 1551.9910324.91 1552.22 10333.6 1552.41
10333.73 1552.4110343.61  1552.610351.43 1552.7410353.26 1552.7710354.74  1552.8
10364.92 1553.0310370.64 1553.1610384.97 1553.0810388.77 1553.0510390.46 1553.04
 10392.6 1553.0310398.79 1552.9310402.66 1552.9410408.68 1552.9610411.73 1552.97
10418.68 1552.9810422.49 1552.9810425.68 1552.9810431.54 1552.9710441.09 1552.99
10442.02 1552.9910454.89 1553.1410471.97 1553.3410482.07 1553.4610492.59  1553.6
 10503.3  1553.710508.82  1553.7

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9296.96     .05 9680.39     .05 9728.68    .035 9795.97     .04 9862.35    .035
 9918.41     .0510039.02     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9728.68 9928.33           501.97     497     497              .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.56

INPUT
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Description:
Station Elevation Data     num=       78
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
  9585.1   1551.3  9610.14  1550.66  9636.03     1550  9681.91  1548.82   9715.5     1548
 9727.86  1547.78  9742.52  1547.76  9752.66  1547.79  9760.84  1547.81  9766.93  1547.78
 9769.88   1547.8   9819.8  1539.48  9902.76  1539.48  9951.78  1547.65   9959.2   1547.9
 9966.78  1548.41   9967.4   1548.2  9973.67     1546  9976.74  1544.94  9979.45     1544
    9984  1542.49  9984.73   1542.2  9987.93  1542.08  9989.66     1542  9994.41     1542
10009.89  1541.98 10011.16   154210012.87     1542 10014.5    154210015.45  1542.01
10019.72  1542.06 10021.6  1542.7410025.22    154410028.45  1545.110030.98     1546
10033.23  1546.86 10036.43 1547.9810037.75  1547.810045.16  1547.310085.95  1547.9
10095.55     1548 10106.3     1548 10153.4  1547.110162.95 1546.9110202.65 1546.62
10212.66  1546.71 10218.05  1546.810233.92 1546.9310246.88 1547.6510256.63 1548.04
10268.72  1548.19 10275.39 1548.33 10289.9  1548.610297.42 1548.7810305.75 1548.77
10315.42  1548.73 10325.3  1548.69 10335.7 1548.6110348.42  1548.610374.56 1548.67
10380.96  1548.64 10388.47 1548.63   10404  1548.610413.67 1548.4810424.81  1548.7
10433.51  1548.74 10435.54 1548.7810448.51 1548.8910470.82  1548.910475.04  1548.8
10476.93   1548.8 10490.5 1548.7810500.59    154910508.32  1549.110516.11 1549.46
10533.25     1550 10548.6  1550.7 10608.6     1552

Manning's n Values         num=        8
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
  9585.1     .05  9769.88    .035   9819.8     .04  9902.76    .035  9951.78     .05
 9966.78     .04 10036.43     .05  10289.9     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9769.88 9951.78            407.49  427.76  417.75             .1       .3
Right Levee     Station=10095.55      Elevation=    1550

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.48

INPUT
Description:
Station Elevation Data     num=       64
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
 9713.54   1548.2  9724.42     1548  9747.75   1547.3  9804.03  1538.62  9915.92  1538.62
 9955.88  1545.28  9957.24   1545.3  9969.57  1545.48  9970.88   1545.5  9974.75  1544.14
 9980.74     1542  9986.17     1540  9986.88  1539.74  9987.99  1539.46  9993.39  1539.45
10016.72  1539.43 10017.58 1539.6710024.57  1541.610026.04    154210034.03  1544.23
10045.11  1546.04 10061.71    154610064.14 1545.9910077.21 1545.9810088.39  1545.98
10102.13    154610104.88    154610120.91 1546.0210131.25    154610139.09  1546.04
10168.24  1546.03 10176.53 1546.0210193.29    154610201.86     1546 10255.7  1545.19
10266.73  1545.03 10278.24  1544.810294.68 1544.6710324.84 1544.14 10337.8  1544.11
10355.65  1544.05 10382.28 1543.8410395.44 1543.9610396.77    154410419.79  1544.07
10433.64  1544.110453.27 1544.5610477.01 1544.7610501.39 1545.1610515.29  1545.36
10550.48    154610574.72 1546.5910604.92 1547.0110619.78 1547.2110630.01  1547.43
10637.54  1547.410654.84 1547.6910680.87    154810694.05  1548.210713.07   1548.3
 10736.9  1549.210754.08  1549.410773.65  1549.710773.97   1549.7

Manning's n Values         num=        6
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
 9713.54     .05  9747.75    .035  9955.88     .05  9970.88    .0410045.11     .05
10201.86     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9747.75 9955.88              1.02       1     .94             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.47980

INPUT
Description:
Station Elevation Data     num=      140
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
 9713.38   1548.2  9721.23  1548.06  9724.26     1548  9729.29  1547.85  9737.51   1547.6
 9744.99  1547.38  9747.61   1547.3  9750.22   1546.9   9755.2  1546.13  9815.93  1536.61
 9903.92  1536.61   9950.1  1544.31   9955.9  1545.28  9957.26   1545.3  9961.67  1545.36
 9962.87  1545.38     9965   1545.4  9965.15  1545.41  9967.63  1545.44  9969.21  1545.46
  9969.6  1545.46  9970.26  1545.47  9970.91  1545.48  9971.19  1545.39  9974.78  1544.13
 9980.78  1541.99  9981.86  1541.59  9986.21  1539.99  9986.92  1539.74  9988.03  1539.46
 9993.44  1539.45  9994.35  1539.45  9994.45  1539.45   9995.9  1539.4510003.78  1539.44
10005.35  1539.44 10010.71 1539.4410012.38 1539.4410014.77 1539.4410015.37  1539.44
10016.78  1539.44 10017.41 1539.6110017.64 1539.6710024.63   1541.6 10026.1     1542
 10034.1  1544.23 10041.85 1545.4910045.19 1546.0310061.79 1545.9910064.23  1545.98
 10077.3  1545.97 10088.49 1545.9710102.24 1545.9910104.99 1545.9910121.03  1546.01
10130.52  1545.99 10131.38 1545.9910138.66 1546.0310139.22 1546.0310159.22  1546.03
10168.39  1546.02 10176.2  1546.0110176.68 1546.0110191.14    154610193.45  1545.99
10202.03  1545.99 10208.63 1545.8910225.45 1545.64 10239.1  1545.4410251.56  1545.25
 10255.9  1545.18 10266.94 1545.0210267.21 1545.0210278.45 1544.79 10287.7  1544.72
 10294.9  1544.66 10301.54 1544.5510314.18 1544.3310324.32 1544.1510325.08  1544.14
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10336.28 1544.1110338.05 1544.1110353.22 1544.0610355.91 1544.0510367.42 1543.96
10382.55 1543.8410392.24 1543.9210395.72 1543.9610397.05    154410398.16    1544
10416.19 1544.0510420.08 1544.0610422.91 1544.0710433.94 1544.0910444.69 1544.35
10453.58 1544.5510454.29 1544.5610461.09 1544.6210470.41 1544.6910477.34 1544.75
10501.73 1545.1510509.29 1545.2610515.64 1545.3510530.13 1545.61 10536.4 1545.73
10546.11  1545.910550.85 1545.9910560.82 1546.2310575.11 1546.5810577.14 1546.61
10592.63 1546.8210605.32    154710613.31 1547.1110620.19  1547.210625.75 1547.32
10630.43 1547.4210631.22 1547.4210637.96 1547.3910640.83 1547.4410646.45 1547.53
10654.23 1547.6610655.27 1547.6810659.78 1547.7310667.75 1547.83 10675.3 1547.92
10681.32 1547.99 10685.8 1548.0610693.77 1548.18 10694.5 1548.19 10704.2 1548.24
10713.54 1548.2910716.15 1548.3910722.31 1548.6210731.67 1548.9710737.38 1549.19
10738.15  1549.2 10750.3 1549.3410754.57 1549.3910774.15 1549.6910774.47 1549.69

Manning's n Values         num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9713.38     .05  9755.2    .035 9815.93     .04 9903.92    .035  9950.1     .05
10208.63     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9755.2  9955.9            516.12     506  475.64             .1       .3

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.38

INPUT
Description:
Station Elevation Data    num=      80
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9629.76  1549.6 9640.49 1548.73 9651.49  1547.6 9662.72 1547.35 9672.93 1547.07
 9680.07 1546.84 9686.88  1546.6 9753.42 1535.61 9916.01 1535.61 9960.29 1542.99
 9975.29 1542.62 9976.84    1542  9979.6 1540.58  9979.8  1540.4 9983.01  1538.9
 9985.06    1538 9986.42 1537.27 9987.62  1536.610001.45 1537.1610017.63 1537.64
10017.76 1537.6610019.64    153810029.85 1540.0910031.88 1540.5710038.83    1542
10040.99 1542.1510044.09    154210044.86 1542.0510047.51    154210079.17 1542.17
10194.06 1542.4510204.61  1542.410231.24  1542.510253.24 1542.54 10272.6 1542.44
10295.26  1542.310317.06 1542.1710334.75 1542.0810350.89    154210371.16 1541.99
10397.71 1542.0710415.65  1542.110432.02 1542.1810445.16 1542.1910460.66 1542.11
10482.61 1542.0110501.01  1541.910533.16 1541.7510540.83  1541.7 10564.2 1541.55
 10572.9  1541.410601.12 1541.1710613.56  1540.910622.37 1540.8110634.45  1540.5
10684.82 1540.6210711.83 1540.6510719.95 1540.6610732.53  1540.810751.59  1541.1
10772.73 1541.2910792.81 1541.51 10819.6 1541.8110835.72    1542 10842.8 1542.15
10855.25 1542.3810862.53  1542.510872.62 1542.6710879.81  1542.610890.14 1542.89
10899.92 1543.2110913.52 1542.7510923.85 1542.4810937.36  1542.810952.85 1543.11
10960.83 1543.4710972.96    154410981.35 1544.2710997.09  1544.711028.41    1545

Manning's n Values         num=       8
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9629.76     .05 9686.88    .035 9753.42     .04 9916.01    .035 9960.29     .05
 9975.29     .0410038.83     .0510445.16     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9686.88 9960.29            300.39  262.72  127.93             .1       .3
Right Levee     Station=   10200      Elevation=    1543

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.33

INPUT
Description: Extended cross section using topo - added station 11008.67
Station Elevation Data    num=      64
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9563.21  1547.4 9578.87 1547.19  9594.1 1547.24 9608.97 1547.13 9623.52  1546.5
 9633.69  1546.1  9643.5 1546.13 9644.81    15469710.3121535.0839918.6681535.083
 9955.97  1541.3 9970.97 1541.56 9974.26  1541.2 9976.81  1540.4 9978.25    1540
 9979.03  1539.5  9980.8 1539.23 9984.13 1538.24 9984.77    1538 9985.51 1537.77
 9986.48 1537.47 9988.73 1536.7810032.36 1536.76 10034.3  1536.710036.79 1537.18
10038.89 1537.52 10041.8    153810050.01 1539.3710053.59    154010057.16 1540.61
10062.79 1541.61 10063.7 1541.59 10099.8  1540.910118.81  1540.910213.72 1541.08
10223.89 1540.9910233.65 1541.0410244.53 1541.1210256.25 1541.1710264.04 1541.17
10278.07 1541.0610304.39 1541.9210313.31  1541.910323.37 1541.8910338.52 1541.88
10428.53 1540.93 10438.9  1540.910445.99 1540.9310596.06 1540.1110606.43  1540.2
10613.21  1540.210627.89  1540.210715.05 1540.5410729.19  1540.710867.85 1541.57
10874.38  1541.510888.93    154210895.87  1542.210912.34 1542.77 10915.7 1542.85
10924.79 1543.1410948.02 1543.7710948.67 1543.7511008.67    1546

Manning's n Values         num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9563.21     .05 9644.81    .035 9955.97     .05 9970.97     .04 10063.7     .05
10304.39     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
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       9644.81 9955.97                .95       1      .63              .1       .3
Right Levee     Station=   10200      Elevation=    1543

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.32982

INPUT
Description:
Station Elevation Data     num=     188
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9562.58  1547.4 9568.09 1547.32 9575.84 1547.21  9577.6 1547.19 9578.32 1547.18
 9583.48  1547.2 9586.89 1547.21  9592.6 1547.23 9593.63 1547.23 9605.99 1547.14
 9608.59 1547.12 9610.96 1547.01    9619 1546.67 9623.22 1546.49 9625.73 1546.39
 9633.44 1546.09 9636.07  1546.1 9636.68  1546.1 9640.12 1546.11 9643.31 1546.12
 9644.62 1545.99 9649.23 1545.23  9653.1 1544.59 9656.59 1544.01 9659.82 1543.47
 9659.84 1543.47 9660.57 1543.35 9664.14 1542.77 9665.62 1542.53 9673.44 1541.23
 9685.49 1539.24 9687.89 1538.84 9722.51 1533.07  9906.5 1533.07 9955.81 1541.29
 9966.56 1541.48 9970.81 1541.55  9974.1  1541.2 9976.65  1540.4 9978.08    1540
 9978.87  1539.5 9980.38 1539.28 9980.54 1539.25 9980.63 1539.24 9980.75  1539.2
 9980.76  1539.2 9981.06 1539.11 9982.68 1538.63 9983.71 1538.33 9983.96 1538.25
  9984.3 1538.13  9984.6 1538.01 9985.34 1537.78 9986.31 1537.48 9988.56  1536.8
 9988.63  1536.810004.89 1536.79 10008.5 1536.7910009.03 1536.7810009.23 1536.78
10009.45 1536.7810015.06 1536.7810019.78 1536.7710023.05 1536.7710026.99 1536.76
10030.26 1536.7610032.18 1536.76 10032.5 1536.7410033.47 1536.7110034.12 1536.69
10034.95 1536.8510036.61 1537.1710038.71 1537.51 10038.8 1537.5210039.08 1537.57
10039.95 1537.7110041.62 1537.9810049.82 1539.35 10053.4 1539.9810056.97 1540.59
10060.39 1541.1910060.46 1541.2110060.61 1541.2310062.04 1541.49 10062.6 1541.59
10063.11 1541.5710063.51 1541.5710064.43 1541.5510074.84 1541.3510079.44 1541.26
10081.36 1541.2310084.36 1541.1710086.39 1541.1310092.78 1541.0110093.59    1541
10097.38 1540.93 10099.6 1540.8910103.09 1540.8910108.57 1540.8910108.71 1540.89
10109.08 1540.8910110.02 1540.89 10118.6 1540.89 10137.2 1540.9310151.41 1540.95
10160.37 1540.9710171.38    1541 10187.7 1541.0310201.26 1541.0510213.48 1541.08
10219.75 1541.0210223.65 1540.9910233.41 1541.0410242.92 1541.1110244.28 1541.12
   10256 1541.1710263.73 1541.1710263.79 1541.1710277.59 1541.0610277.81 1541.06
10288.64 1541.4110304.13 1541.9110306.09 1541.9110313.04 1541.89 10323.1 1541.88
 10328.3 1541.8810337.93 1541.8710338.25 1541.8710345.81 1541.7910358.37 1541.66
10363.51 1541.6110377.85 1541.4610412.06  1541.110428.23 1540.9310433.38 1540.91
10438.59  1540.910438.74  1540.910445.68 1540.9210449.38  1540.910459.67 1540.85
10471.17 1540.79 10483.3 1540.7210492.78 1540.6710511.04 1540.5710522.72 1540.51
10585.79 1540.1610590.35 1540.1410595.71 1540.1110601.49 1540.1610606.07  1540.2
   10612  1540.210612.85  1540.210627.53  1540.210630.44 1540.21   10641 1540.25
10648.98 1540.2810659.69 1540.3210683.18 1540.4110691.78 1540.4510697.59 1540.47
10706.56  1540.510714.66 1540.54 10723.2 1540.63 10728.8  1540.710822.59 1541.29
10853.03 1541.4810863.51 1541.5410867.41 1541.5710873.61  1541.510873.94  1541.5
10885.93 1541.9110888.49    154210895.43 1542.1910902.88 1542.4510911.89 1542.76
10914.56 1542.8310915.25 1542.8410924.34 1543.1310925.54 1543.16 10937.6 1543.49
10947.56 1543.7610948.21 1543.7410948.61 1543.7610953.73 1543.9510965.14 1544.38
10984.56  1545.110998.61 1545.6311008.19 1545.99

Manning's n Values         num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9562.58     .05 9687.89    .035 9722.51     .04  9906.5    .035 9955.81     .05
10304.13     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9673.44 9966.56           215.65     227  143.01              .1       .3
Right Levee     Station=   10200      Elevation=    1543

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.29

INPUT
Description:
Station Elevation Data     num=     128
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9418.65    1547 9430.99 1546.38  9448.3 1545.08 9452.25 1544.79  9465.4 1544.71
 9473.03  1544.8 9485.79 1544.61 9515.73 1544.17 9526.85    1544 9544.82 1543.75
 9559.88 1543.57    9583 1543.27 9584.36 1543.21 9592.05 1543.09 9612.41 1542.91
 9621.08 1543.15 9628.88 1543.34 9636.09  1541.7 9636.15  1541.7 9637.78    1542
 9645.76 1543.15 9649.06 1543.64 9666.56 1542.99  9693.5    1542 9698.86 1541.46
9751.8581532.6279884.1721532.627 9929.91 1540.25 9942.77 1540.54 9942.92  1540.5
 9943.12  1540.5 9943.13  1540.5 9943.41  1540.5 9944.91 1540.53 9945.87  1540.5
 9946.42  1540.5 9950.45 1540.41 9965.59 1540.08 9968.95    1540 9969.44    1539
 9969.63    1539 9969.83    1539 9975.05 1538.89 9979.45    1538 9982.49  1537.4
 9986.16 1536.63  9989.2    1536 9991.29  1535.6 9992.19 1535.44 9993.57  1535.1
 9997.15 1534.44 9997.41 1534.39 9998.22 1534.4610017.25    153610017.31    1536
10017.45 1536.0210018.78 1536.0210019.78 1536.0210021.01 1536.02 10030.7  1536.1
10034.98  1536.110036.77 1536.1510039.56 1536.2110041.45 1536.49 10047.4  1537.3
10048.15 1537.4110051.68    1538   10057 1538.79 10062.1 1539.6710062.23  1539.7
10062.57 1539.6810063.45 1539.6610088.75    153910101.97  1539.310110.31  1539.5
10120.56    154010135.75 1540.0910148.38  1540.110165.59 1540.2610187.15  1540.3
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```
10206.52  1540.310219.43  1540.210229.71 1540.1210245.95    154010266.63  1539.4
10275.59  1539.210282.93  1539.510294.62 1539.96 10299.4    154010312.75 1540.26
10344.59    154010364.44 1539.8210369.43 1539.7610379.33 1539.5410388.91 1539.52
10399.62 1539.5310410.91  1539.610419.73 1539.7810436.73 1539.91 10447.6    1540
10506.31    154010510.55    154010520.92 1539.89 10530.7 1539.7610547.87 1539.58
 10557.7 1539.6310565.13  1539.7 10575.1  1539.810596.96 1539.8610604.97 1539.75
10610.37  1539.610618.72 1539.6110634.21    154010726.73  1540.610755.06 1540.78
10764.82  1540.810774.22 1540.9110785.69  1540.910801.46 1541.0310812.34 1541.07
10822.56 1541.1710833.78  1541.710844.03 1542.22 10848.8  1542.410859.42 1542.74
10877.49  1543.210890.57 1543.6210899.49    1544

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9418.65     .05 9698.86    .0359751.858     .049884.172    .035 9929.91     .05
 9944.91     .0410063.45     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9698.86 9944.91            228.41  196.75  172.48            .1        .3
Right Levee     Station=   10200      Elevation=    1542

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.25

INPUT
Description:
Station Elevation Data    num=     128
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9331.64  1541.9 9343.21  1541.5 9352.21 1541.13 9361.84  1540.4 9371.77 1539.97
 9381.69 1539.94 9391.69 1539.84 9402.07 1539.77 9412.64 1539.71 9422.58 1539.68
 9432.45  1539.6 9447.36 1539.57 9450.91 1539.56 9459.84 1539.54 9469.65 1539.52
 9470.89  1539.5 9480.35 1539.43 9481.73 1539.42 9494.26 1539.37 9502.63 1539.14
 9522.65 1539.03 9529.36 1538.87 9574.53  1538.6 9575.54 1538.64 9586.21    1538
 9590.37 1537.27 9591.48 1537.05 9593.07 1536.72 9593.26  1536.6 9594.37 1536.69
 9596.28  1536.7 9607.58 1536.79 9615.27  1536.8 9621.56  1537.7 9622.53 1537.91
 9625.33 1538.33 9631.57 1538.16 9640.34 1538.01 9645.96  1537.99735.276  1539.8
9780.6721532.2349880.8741532.234 9919.67  1538.7 9934.67  1538.6 9937.49    1538
 9937.65 1538.03 9937.81    1538  9938.5 1537.87 9944.65  1536.7 9948.15    1536
 9950.16 1535.61  9953.2 1535.03 9974.83 1535.03 9975.38    1535  9975.7 1534.99
 9982.66    1534 9987.18  1533.4 9996.69    1532  9999.5  1531.5 9999.79 1531.52
  9999.8 1531.5210000.79    153210002.61 1532.6910005.51    153410007.05 1534.76
10008.13 1535.2410009.73    153610013.25 1537.8510013.54    153810013.88 1538.15
10014.03 1538.2310014.24 1538.3610015.93 1539.2110016.17  1539.210016.29 1539.19
10016.35 1539.1910022.46  1539.110077.65 1539.0310102.46 1538.81   10118 1538.54
10122.71  1538.410134.86 1538.1710146.01    153810157.34 1537.7110158.67 1537.77
10159.28  1537.810163.27    153810182.69 1538.7310194.77  1539.110204.27 1539.33
10204.88 1539.3510212.83 1538.96   10217  1538.710218.89 1538.6710227.41    1538
10241.34 1537.6110242.33  1537.610258.63 1538.0910285.55 1538.3210313.03  1538.5
10316.31 1538.5910349.65 1538.8510386.95 1539.1210396.78  1539.110407.14 1539.02
10417.69 1538.8810423.16 1538.8910435.26 1538.9410447.23  1538.810460.44 1538.65
10470.26  1538.610482.34 1538.4910491.64  1538.410501.87 1538.5910512.61  1538.6
10523.56 1538.7410535.37 1538.8210542.81 1538.8910557.04 1539.0310646.25 1539.88
10655.44  1539.910670.26 1540.5310674.92  1540.710682.69 1541.0310699.98 1541.57
10703.23 1541.6910714.88 1541.9310722.42  1542.5

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9331.64     .05 9625.33     .059735.276     .035 9919.67     .05 9934.67     .04
10015.93     .0510204.27     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9735.276 9919.67             .82       1    1.07            .1        .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 9331.64 9522.65    1542
Right Levee     Station=10015.93      Elevation=    1542

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.24981

INPUT
Description:
Station Elevation Data    num=     197
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9330.78 1541.92 9342.38 1541.51 9346.32 1541.35 9351.41 1541.14 9361.07 1540.41
 9371.03 1539.98 9380.97 1539.95    9391 1539.85 9396.03 1539.82 9401.41 1539.78
 9411.57 1539.71 9412.01 1539.71 9421.98 1539.68 9431.88  1539.6 9446.83 1539.57
 9450.39 1539.56 9459.35 1539.54 9469.19 1539.52 9470.43  1539.5 9479.92 1539.43
  9481.3 1539.42 9493.87 1539.37 9502.26 1539.14 9522.34 1539.03 9529.07 1538.88
  9554.5 1538.72 9566.93 1538.64 9574.06  1538.6 9574.36  1538.6 9575.38 1538.64
 9579.08 1538.41 9586.08 1537.99 9586.09 1537.99 9590.25 1537.27 9591.36 1537.05
 9592.96 1536.72 9593.15  1536.6 9594.26 1536.69 9595.73  1536.7 9596.18  1536.7
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 9597.58 1536.71 9604.93 1536.77 9607.51 1536.79 9615.22  1536.8 9621.53  1537.7
  9622.5 1537.91 9623.52 1538.06 9625.31 1538.33 9631.57 1538.16 9636.41 1538.08
 9640.36 1538.01 9642.99 1537.96    9646  1537.9 9647.12 1537.92  9656.4 1538.12
  9660.3  1538.2 9667.65 1538.36 9685.31 1538.73 9692.29 1538.88  9696.6 1538.97
 9706.52 1539.18 9735.57 1539.76 9786.81 1531.22 9874.74 1531.22 9919.56 1538.69
 9932.12 1538.61 9933.76  1538.6 9934.56  1538.6 9935.16 1538.47 9937.38    1538
 9937.54 1538.03  9937.7    1538 9938.39 1537.87 9944.54 1536.71 9947.77 1536.06
 9948.04 1536.01 9950.05 1535.62 9952.29 1535.19 9953.08 1535.04 9955.89 1535.04
 9962.99 1535.04 9970.99 1535.03 9974.71 1535.03 9974.75 1535.03 9975.26    1535
 9975.58 1534.99 9978.15 1534.63 9982.54    1534 9987.06  1533.4 9989.54 1533.04
 9996.57 1532.01 9999.38 1531.51 9999.67 1531.5310000.67 1532.0110002.49 1532.69
10003.45 1533.1310005.38 1533.9910006.92 1534.75   10008 1535.23 10009.6 1535.98
10013.12 1537.8210013.41 1537.9710013.75 1538.12 10013.9  1538.210014.11 1538.33
 10015.8 1539.1810016.04 1539.1710016.16 1539.1610016.22 1539.1610018.11 1539.13
10018.54 1539.1210022.33 1539.0710027.88 1539.0610028.72 1539.0610029.45 1539.06
10029.51 1539.0610029.74 1539.0610030.95 1539.0710033.13 1539.0710036.93 1539.08
10038.03 1539.0810039.79 1539.0810048.27 1539.0610050.44 1539.06 10062.3 1539.04
10077.51 1539.0310102.32 1538.81 10117.1 1538.5510117.85 1538.5410122.56  1538.4
10134.71 1538.1710144.83 1538.0210145.86    153810156.22 1537.7410157.18 1537.71
10158.51 1537.7710159.13  1537.810163.11    153810166.33 1538.1210182.53 1538.73
10183.44 1538.7510191.66 1539.0110194.61 1539.0910204.11 1539.3210204.72 1539.34
10212.66 1538.9610216.83  1538.710218.72 1538.6710219.89 1538.5810227.24    1538
10241.17 1537.6110242.16  1537.610247.72 1537.7710258.46 1538.0910259.68  1538.1
10282.89  1538.310285.37 1538.3210294.15 1538.38 10303.4 1538.4410312.84  1538.5
10316.12 1538.5910349.46 1538.8410353.63 1538.8710365.14 1538.9610375.39 1539.03
10384.17 1539.0910386.75 1539.1110392.06  1539.110396.58 1539.0910403.19 1539.04
10406.94 1539.0110417.48 1538.8710419.14 1538.8810422.95 1538.8810435.05 1538.93
10447.02 1538.7910460.23 1538.6410470.04 1538.5910482.12 1538.4910491.42  1538.4
10501.65 1538.5910512.39  1538.610523.33 1538.7410535.14 1538.8210542.58 1538.89
10551.68 1538.9710556.81 1539.0310565.61 1539.11   10646 1539.8810655.19  1539.9
   10670 1540.5310674.66  1540.710682.43 1541.0310699.72 1541.5710702.97 1541.69
10714.62 1541.9310722.15  1542.5

Manning's n Values         num=      10
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9330.78     .05 9566.93     .05 9604.93     .05 9625.31     .05 9706.52     .05
 9735.57    .035 9786.81     .04 9874.74    .035 9919.56     .0510204.72     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9735.57 9919.56            175.48     214  228.98             .1       .3
Right Levee     Station= 10015.8      Elevation=    1542

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.21

INPUT
Description: Extended cross section using topo at station 10665.34
Station Elevation Data     num=      74
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9146.93    1546 9171.93    1544 9251.93    1542 9276.93    1540 9506.93    1540
 9526.93  1538.7 9538.41    1538 9546.49 1537.47 9557.77  1536.3 9573.28 1536.21
 9576.25 1536.46 9588.09 1537.44    9618  1537.6 9638.74 1537.76 9649.33 1537.83
 9655.97 1537.87 9670.91 1537.93 9677.19 1537.96 9689.02    1538 9717.43 1538.09
 9728.67 1538.12  9735.6 1538.13 9751.56 1538.139795.2041530.8569865.4761530.856
 9908.34    1538 9909.91    1538 9911.25    1538 9923.34 1538.16 9927.67 1538.05
 9931.12 1537.66 9937.92  1537.4 9945.58    1536 9949.19 1535.34 9952.44  1534.8
 9963.36    1534 9976.69 1533.01 9990.73    1532 9991.15  1531.9 10000.1 1531.31
 10000.9    1532 10001.6 1532.6110001.66  1532.610001.88 1533.0710003.04    1534
10005.13 1535.5910008.77    153810009.82 1538.6710011.51 1538.6110019.63  1538.3
10021.71 1538.2410033.08    153810085.59    153810112.16    153810123.07    1538
10132.76    153810149.15    153810157.03    153810184.08    153810210.74 1538.33
 10222.2 1538.2910244.44 1538.1210255.23    1538 10264.1 1537.9310312.22 1537.56
10323.25  1537.310333.07 1537.2710341.49 1537.1610349.05  1537.110359.71 1537.16
   10375  1537.210501.99    153810515.34 1538.3810665.34    1542

Manning's n Values         num=      10
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9146.93     .05 9526.93     .05 9588.09     .05 9751.56    .0359795.204     .04
9865.476    .035 9908.34     .05 9923.34    .0410009.82     .0510210.74     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9751.56 9909.91            105.6     110   119.9             .1       .3
Right Levee     Station=10009.82      Elevation=    1540

CROSS SECTION           RIVER: Unnamed Trib
REACH: Reach 1             RS: 1.19

INPUT
Description:
Station Elevation Data     num=     140
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

9250.33	1544.53	9267.83	1543.23	9268.61	1543.19	9273.64	1542.81	9278.2	1542.63
9287.31	1542.18	9300.12	1541.33	9313.06	1541.04	9325.84	1540.77	9342.78	1540.43
9344.34	1540.45	9348.22	1540.47	9355.58	1540.24	9359.24	1539.78	9371.53	1538.82
9387.52	1538.49	9391.51	1538.47	9396	1538.67	9402.67	1538.93	9411.07	1538.92
9426.19	1538.85	9465.79	1538.67	9479.4	1538.34	9486.28	1538.15	9490.29	1538.31
9498.39	1538.67	9508.79	1538.7	9519.86	1538.63	9543.04	1538.63	9551.58	1538.64
9566.63	1538.65	9585.98	1538.59	9589.61	1538.41	9596.82	1538	9601.64	1537.74
9604.62	1537.59	9615.33	1537.1	9622.86	1536.72	9626.03	1536.48	9633.38	1535.92
9638.08	1535.89	9647.84	1535.83	9650.61	1535.99	9656.26	1536.31	9661.65	1536.63
9665.48	1536.64	9674.09	1536.7	9689.53	1536.82	9691.58	1536.83	9708.87	1536.98
9718.75	1537.05	9720.65	1537.06	9724.94	1537.1	9731.62	1537.15	9738.87	1537.19
9744.69	1537.22	9744.72	1537.22	9755.75	1537.28	9760.26	1537.3	9800.04	1530.67
9938.15	1530.67	9977.43	1537.05	9979.56	1537.33	9980.91	1537.33	9982.06	1537.33
9991.04	1537.43	9992.43	1537.44	9996.14	1537.36	9999.1	1537.11	0004.93	1536.92
10011.5	1535.99	10014.6	1535.54	10017.39	1535.18	10026.75	1534.64	10038.19	1533.97
10038.32	1533.97	10050.23	1533.31	0050.59	1533.24	10058.27	1532.85	10058.95	1533.31
10059.55	1533.71	10059.6	1533.71	10059.79	1534.02	10060.79	1534.64	10062.58	1535.7
10065.7	1537.31	10066.6	1537.76	10068.05	1537.72	10075.02	1537.51	10076.8	1537.47
10086.55	1537.32	10131.59	1537.33	10136.4	1537.33	10154.38	1537.26	10163.74	1537.22
10169.8	1537.19	10172.05	1537.19	10186.11	1537.13	10192.87	1537.11	10195.62	1537.1
10216.07	1537.01	10233.6	1537.11	10238.93	1537.14	10248.76	1537.07	10267.84	1536.88
10271.51	1536.83	10277.09	1536.82	10284.7	1536.82	10312.36	1536.82	10325.97	1536.82
10327.67	1536.81	0334.11	1536.56	10335.44	1536.52	10343.86	1536.38	10346.19	1536.32
10351.08	1536.31	0357.56	1536.31	0366.71	1536.41	0379.82	1536.51	0380.68	1536.51
10380.92	1536.52	10380.95	1536.52	10386.4	1536.63	10401.36	1536.91	10416.93	1537.21
10427.19	1537.37	10440.96	1537.52	10456.67	1537.66	10468.63	1537.77	10488.74	1537.95
10499.88	1538.25	10500.19	1538.25	10517.51	1538.61	10527.4	1538.84	10546.15	1539.25
10556.07	1539.43	10578.52	1539.89	10591.35	1540.14	10602.88	1540.36	10628.85	1540.88

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9250.33	.05	9508.79	.05	9604.62	.05	9661.65	.05	9760.26	.035
9977.43	.05	10233.6	.05						

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9760.26	9979.56	211.2	220	239.8	.1	.3

CROSS SECTION RIVER: Unnamed Trib
REACH: Reach 1 RS: 1.15

INPUT
Description:
Station Elevation Data num= 192

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9457.12	1541.7	9459.82	1541.6	9460.49	1541.61	9461.47	1541.6	9463.91	1541.42
9472.19	1540.7	9472.86	1540.72	9473.78	1540.58	9481.06	1540.14	9481.26	1540.12
9481.45	1540.1	9482.65	1540	9486.76	1539.56	9488.86	1539.27	9496.06	1538
9499.81	1537.4	9500.77	1537.26	9506.25	1537.25	9510.9	1537.23	9517.04	1537.19
9521.82	1537.2	9536.27	1537.01	9537.69	1537.13	9547.21	1537.97	9550.31	1537.23
9553.04	1536.6	9553.98	1536.37	9554.37	1536.27	9555.62	1536	9555.78	1535.97
9555.88	1536	9556.09	1535.91	9556.79	1535.74	9557.04	1535.68	9573.94	1535.47
9577.86	1535.4	9578.36	1535.42	9578.38	1535.42	9581.77	1536	9586.49	1536.69
9587.47	1536.9	9594.62	1536.75	9607.49	1536.55	9641.43	1536	9643.88	1535.92
9643.93	1535.9	9644.53	1535.86	9653.12	1535	9658.95	1534.44	9662.35	1534.94
9669.3	1536	9670.25	1536.19	9670.73	1536.28	9674.16	1536.14	9676.02	1536.14
9678.24	1536.1	9679.88	1536.14	9681.6	1536.11	9685.58	1536	9687.69	1535.96
9688.6	1536	9688.96	1535.98	9689.2	1535.98	9690.39	1535.99	9690.97	1535.98
9707.48	1535.9	9714.79	1535.92	9726.7	1535.94	9727.18	1535.94	9727.66	1535.95
9728.31	1536	9734.33	1535.97	9735.13	1535.97	9747.29	1535.75	9747.96	1535.75
9751.85	1535.7	9753.45	1535.5	9757.57	1535.39	9763.86	1535.31	9778.42	1535.21
9782.79	1535.2	9788.73	1535.13	9796.2	1535.07	9804.28	1535.02	9808.43	1535
9812.17	1535	9815.77	1535.03	9819.53	1535.09	9823.88	1535.15	9834.48	1535.27
9859.34	1535.5	9868.72	1535.64	9879.91	1535.75	9893.19	1535.86	9900.2	1535.92
9909.03	1536	9909.27	1536	9922.2	1536.02	9929.98	1536.03	9937.93	1536.03
9938.5	1536	9939.06	1536.03	9939.82	1536.03	9941.49	1536.04	9942.4	1536.04
9944.85	1536	9948.15	1536.08	9955.29	1536.15	9973.95	1536.31	9974.03	1536.28
9974.57	1536	9977.68	1534.88	9979.65	1534	9984.55	1532.16	9984.87	1532
9985.45	1531.7	9985.54	1531.68	9985.66	1531.65	9986.13	1531.47	9989.07	1530.31
9989.54	1530.3	9989.75	1530.29	10000	1530.31	0010.84	1530.31	0017.46	1530.31
10018.94	1530.61	0019.32	1530.62	10019.69	1530.64	10025.53	1531.46	10029.08	1532
10030.8	1532.31	0036.24	1533	10041.11	1533.76	10042.05	1533.91	0042.57	1534
10042.71	1534	10042.81	1534.01	10063.69	1534.79	10090.64	1535.88	10091.69	1535.92
10092.09	1535.91	0092.38	1535.91	0097.64	1536	10097.67	1536	10097.7	1536
10097.79	1536	10098.73	1536	10100.93	1536	10102.8	1536	10104.1	1536
10104.51	1536	10116.27	1536	10124.93	1536	10129.65	1536	10161.29	1535.97
10167.93	1536	10169.27	1535.97	10226.93	1536	10249.25	1535.58	10255.5	1535.48
10266.5	1535.31	0291.88	1534.82	10312.49	1534.45	10314.39	1534.44	10317.21	1534.36
10344.51	1535.11	0354.74	1535.36	10359.04	1535.07	10367.12	1534.51	0390.16	1535.12
10390.32	1535.11	0390.34	1535.13	10393.98	1535.39	10403.98	1536	10414.38	1536.69
10417.11	1536.81	0420.24	1536.99	10421.24	1537.05	10430.44	1537.26	10440.95	1537.45
10448.93	1537.61	0469.82	1538	10481.6	1538.14	10488.2	1538.23	10491	1538.28

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10495.23  1538.310500.73 1538.3910507.36 1538.4410514.54 1538.4810522.36  1538.5
10530.93  1538.510536.44 1538.54

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9457.12     .05 9670.73     .05 9973.95     .0410092.38     .0510226.93     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9973.9510092.38           270.67     322  330.52             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.09

INPUT
Description:
Station Elevation Data    num=      70
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9424.78  1542.3 9438.03    1540 9444.86 1539.14 9455.87  1537.8  9465.1 1537.77
 9513.96 1536.83  9547.2    1536 9558.25 1535.57 9570.82 1535.53 9571.75 1535.55
 9581.16 1535.81 9588.74    1536 9592.71 1536.34 9597.13  1535.6 9606.69 1534.51
 9616.58 1534.49 9629.39 1534.45 9639.87 1535.75 9656.35 1535.24 9665.25 1534.52
 9672.06 1534.44 9696.32  1533.9 9704.29 1533.69 9727.94 1533.85 9753.78 1531.36
 9765.16  1532.6 9775.54 1533.71 9785.01  1533.9 9795.56  1534.1 9805.09 1533.71
 9814.96 1533.51 9868.69  1533.6 9882.68 1533.56  9892.3  1533.5 9913.24 1533.39
 9922.96 1533.19 9935.11 1532.78 9945.79 1532.84 9954.51  1532.7  9968.8  1533.6
 9972.58    1532  9977.8    1530 9986.13    152810003.17  1526.5 10005.4 1527.52
10011.55    153010014.74 1531.3710016.19    153210019.92 1533.4510021.22    1534
10079.98 1534.0210158.96    153410189.09 1533.3510203.91 1532.9710212.81  1532.7
10259.64  1533.1 10275.9  1533.310292.66 1533.4110362.59    153410371.83 1534.26
10385.76 1534.6510395.26 1534.8210408.74  1535.110415.43 1535.3110436.24 1535.96
10484.56 1537.9610485.32    153810507.37 1538.4210530.64  1538.8 10545.1 1538.99

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
 9424.78     .05 9795.56     .05  9968.8     .0410021.22     .0510158.96     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9968.810021.22           363.02  441.86  501.81             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 1.00

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9609.1    1540 9622.48 1538.14 9635.72    1536 9647.53    1534 9647.65 1533.98
 9654.24  1533.7 9670.53 1533.08 9680.63 1532.84 9690.55  1532.8 9704.07 1532.83
 9710.01 1532.76 9720.07    1532  9733.6  1531.2 9740.25 1531.01 9743.19  1531.3
 9751.03 1532.11 9760.37    1532 9772.86 1531.99 9795.97 1531.97 9824.69 1531.95
 9852.14 1531.94 9883.51 1531.94 9890.84 1530.23 9900.58    1528 9904.98    1527
 9913.27  1527.5 9919.94  1527.9 9921.56    1528 9930.83  1528.1 9963.18 1528.81
 9971.56  1528.4 9980.21    1528 9990.04  1527.510000.85 1527.0210013.35  1529.4
10023.33  1531.110030.32 1531.3210040.14 1531.4610047.82 1531.6210058.85 1531.83
10075.53 1531.4810076.47 1531.4210091.61 1530.1910124.03    153010154.62 1530.06
10220.28    153010249.01    153010263.59 1529.2810269.59  1529.410277.32  1529.7
10301.91 1530.1510331.14  1530.110339.77 1530.1510351.58    153010382.77 1529.73
10399.13 1529.5910430.94 1531.9510439.26 1532.5810450.46  1533.410466.22 1533.65
10476.31  1533.810509.97 1534.1910556.47 1534.57

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
  9609.1     .08 9751.03     .08 9883.51    .03710058.85     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9883.5110058.85           483.41   446.4  348.15             .1       .3

CROSS SECTION          RIVER: Unnamed Trib
REACH: Reach 1            RS: 0.92

INPUT
Description: Extended cross sections using topo at stations 10473.79 to 10628.79
Station Elevation Data    num=     162
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9840.45  1535.9 9841.82  1535.8 9842.18  1535.8 9842.47 1535.79 9842.78 1535.79
 9843.11  1535.8 9843.88 1535.77 9844.62 1535.76 9845.33 1535.75 9852.21 1535.48
 9852.88  1535.5 9854.72 1535.36  9855.9 1535.32  9857.5 1535.25 9859.47 1535.14
 9863.89  1534.9 9865.91 1534.81 9871.08 1534.57 9874.57 1534.33 9877.93 1534.15
 9878.07  1534.1 9878.77 1534.06 9879.07 1534.04 9879.24    1534 9886.65 1532.94
 9888.67  1532.6 9892.03    1532 9896.25 1531.22 9902.73    1530 9910.86 1528.47
 9911.77  1528.3 9912.19 1528.28 9920.18    1528  9920.7 1527.98 9921.24 1527.97
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 9924.03  1527.9 9927.14 1527.79  9927.4 1527.81 9927.81 1527.82 9931.41 1527.83
  9933.2  1527.9  9934.3    1528 9937.41 1528.21 9938.17 1528.23 9941.04 1528.38
 9942.13  1528.4 9944.69 1528.56 9946.46 1528.59 9948.32 1528.62 9953.79 1528.77
 9955.77  1528.8 9959.26 1528.62 9960.92 1528.65 9962.82 1528.69 9964.83  1528.7
 9965.45  1528.7 9967.94 1528.74 9968.88 1528.77 9970.14 1528.72 9973.09 1528.62
 9975.28  1528.5 9977.62 1528.35 9980.42 1528.22 9980.58 1528.05  9980.6    1528
 9980.82  1527.8 9981.52 1527.32 9982.54    1526 9984.44 1524.46  9984.9    1524
 9985.04  1523.9  9985.2 1523.71 9985.48 1523.48 9993.75 1523.65   10000  1523.7
10005.87  1523.810007.94 1523.9810008.05 1523.9910008.19    152410012.21 1524.31
10031.44  1525.8 10034.7    1526 10052.9 1526.8310062.68 1527.3210094.14 1527.11
 10115.7    152710121.53 1527.4810127.93    152810139.15 1528.9110144.15 1529.32
 10155.3  1529.210169.41 1529.2310177.47 1529.1810182.09 1528.9110184.05  1528.9
10187.23  1528.910188.32 1528.8910190.67 1528.8710207.82 1528.7310216.47 1528.67
10225.12  1528.610236.78 1528.5310252.86 1528.41 10306.8    152810317.82 1527.59
10319.82  1527.5 10322.9 1527.4610324.31 1527.4210325.11 1527.4310327.37 1527.45
10328.93  1527.410331.19 1527.3510331.47 1527.34 10334.1 1527.3710335.22 1527.39
 10340.2  1527.310342.21 1527.3710345.17 1527.4310346.08 1527.4310394.23 1526.34
10396.44  1526.310398.96 1526.2810418.41    152610424.45 1525.7810426.27 1525.72
10428.42  1525.610430.05 1525.5910431.45 1525.7810433.44    152610436.03  1526.3
10438.76  1526.510448.48 1526.8410451.69 1526.9110451.79 1526.9210465.15 1527.58
10469.88  1527.810471.38  1527.9 10473.5    152810474.24 1528.0410474.75 1528.07
10475.71  1528.210476.58 1528.2310490.79 1529.2910493.97 1529.5310494.46 1529.54
10496.88  1529.610507.12  1529.9 10507.6 1529.9110509.95    153010557.12 1531.31
10577.64    153210580.36 1532.0510582.76 1532.0810585.63 1532.1510594.61 1532.42
10598.59  1532.510598.84 1532.5610600.78 1532.5910602.35  1532.610604.34 1532.61
10606.72  1532.610612.44 1532.64

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9840.45     .08 9970.14    .03710144.15     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9970.1410144.15          2181.75 2115.98 1840.85             .1       .3

Profile Output Table - Standard Table 1
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Reach	River Sta	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach 1	0.92	9700.0	1523.5	1532.1	1529.9	1532.4	0.001802	5.3	2850.4	692.1	0.4
Reach 1	0.92	9700.0	1523.5	1532.1	1529.9	1532.4	0.001802	5.3	2850.4	692.1	0.4
Reach 1	1.00	9700.0	1527.0	1533.1		1533.7	0.005523	7.5	2023.0	775.6	0.7
Reach 1	1.00	9700.0	1527.0	1533.1		1533.7	0.005523	7.5	2023.0	775.6	0.7
Reach 1	1.09	9700.0	1526.5	1535.7	1535.6	1536.5	0.007114	10.5	1883.5	858.5	0.7
Reach 1	1.09	9700.0	1526.5	1535.7	1535.6	1536.5	0.007108	10.5	1884.1	858.6	0.7
Reach 1	1.15	9700.0	1530.3	1537.9		1538.3	0.004610	7.2	2277.2	964.6	0.6
Reach 1	1.15	9700.0	1530.3	1537.9		1538.3	0.004611	7.2	2277.0	964.6	0.6
Reach 1	1.19	9700.0	1530.7	1538.4		1538.8	0.001438	5.6	2518.0	935.6	0.4
Reach 1	1.19	9700.0	1530.7	1538.4		1538.8	0.001438	5.6	2517.9	935.6	0.4
Reach 1	1.21	9700.0	1530.9	1538.2	1537.0	1539.3	0.005033	8.9	1290.5	474.5	0.7
Reach 1	1.21	9700.0	1530.9	1538.2	1537.0	1539.3	0.005034	8.9	1290.4	474.5	0.7
Reach 1	1.24981	9700.0	1531.2	1539.5	1537.1	1540.1	0.002580	7.0	1747.1	523.0	0.5
Reach 1	1.24981	9700.0	1531.2	1539.5	1537.1	1540.1	0.002580	7.0	1747.1	523.0	0.5
Reach 1	1.25	9700.0	1532.2	1539.4	1537.5	1540.1	0.002844	7.2	1628.2	516.1	0.5
Reach 1	1.25	9700.0	1532.2	1539.4	1537.5	1540.1	0.002844	7.2	1628.2	516.1	0.5
Reach 1	1.29	9700.0	1532.6	1540.1	1537.6	1540.6	0.002374	6.4	1671.0	384.7	0.5
Reach 1	1.29	9700.0	1532.6	1540.1	1537.6	1540.6	0.002374	6.4	1671.0	384.7	0.5
Reach 1	1.32982	9700.0	1533.1	1540.6	1537.4	1541.1	0.001481	5.2	1985.3	356.4	0.4
Reach 1	1.32982	9700.0	1533.1	1540.6	1537.4	1541.1	0.001481	5.2	1985.3	356.4	0.4
Reach 1	1.33	9700.0	1535.1	1540.5	1538.9	1541.1	0.003148	6.7	1530.3	352.8	0.5
Reach 1	1.33	9700.0	1535.1	1540.5	1538.9	1541.1	0.003148	6.7	1530.3	352.8	0.5
Reach 1	1.38	9700.0	1535.6	1541.3	1539.9	1542.2	0.004904	7.8	1290.1	287.8	0.6
Reach 1	1.38	9700.0	1535.6	1541.3	1539.9	1542.2	0.004904	7.8	1290.1	287.8	0.6
Reach 1	1.47980	9700.0	1536.6	1543.7		1545.0	0.005857	9.5	1111.2	231.5	0.7
Reach 1	1.47980	9700.0	1536.6	1543.7		1545.0	0.005857	9.5	1111.2	231.5	0.7
Reach 1	1.48	9700.0	1538.6	1543.6	1543.6	1545.5	0.011664	11.6	880.1	228.9	1.0
Reach 1	1.48	9700.0	1538.6	1543.6	1543.6	1545.5	0.011664	11.6	880.1	228.9	1.0
Reach 1	1.56	9700.0	1539.5	1547.3	1545.5	1548.2	0.003776	8.1	1279.2	242.1	0.6
Reach 1	1.56	9700.0	1539.5	1547.3	1545.5	1548.2	0.003776	8.1	1279.2	242.1	0.6
Reach 1	1.64981	9700.0	1540.5	1549.1		1550.1	0.003704	8.3	1282.9	234.5	0.6
Reach 1	1.64981	9700.0	1540.5	1549.1		1550.1	0.003704	8.3	1282.9	234.5	0.6
Reach 1	1.65	9700.0	1542.5	1548.9		1550.2	0.006148	9.6	1072.1	230.0	0.8
Reach 1	1.65	9700.0	1542.5	1548.9		1550.2	0.006148	9.6	1072.1	230.0	0.8
Reach 1	1.678	9700.0	1542.7	1549.6		1551.2	0.007909	10.7	974.6	213.4	0.8
Reach 1	1.678	9700.0	1542.7	1549.6		1551.2	0.007909	10.7	974.6	213.4	0.8
Reach 1	1.69878	9700.0	1542.9	1550.5		1552.0	0.006463	10.1	1042.0	220.4	0.8
Reach 1	1.69878	9700.0	1542.9	1550.5		1552.0	0.006463	10.1	1042.0	220.4	0.8

Reach 1	1.699	9700.0	1543.9	1550.3		1552.1	0.009027	11.3	926.7	212.8	0.9
Reach 1	1.699	9700.0	1543.9	1550.3		1552.1	0.009027	11.3	926.7	212.8	0.9
Reach 1	1.72	9700.0	1544.6	1554.8	1554.8	1555.8	0.006137	9.7	1773.2	854.8	0.7
Reach 1	1.72	9700.0	1544.6	1554.7	1554.7	1556.3	0.008619	11.4	1154.7	332.0	0.8
Reach 1	1.77	9700.0	1545.6	1556.6		1557.2	0.004176	8.2	2160.5	958.6	0.6
Reach 1	1.77	9700.0	1545.6	1557.0		1558.2	0.005542	9.9	1350.3	345.2	0.7
Reach 1	1.84	9700.0	1549.1	1558.3		1558.9	0.005130	8.6	2061.4	867.6	0.6
Reach 1	1.84	9700.0	1549.1	1559.4		1559.9	0.003462	7.8	1792.6	416.9	0.5
Reach 1	1.90	9700.0	1550.9	1560.2		1561.2	0.007771	11.0	1929.0	956.4	0.7
Reach 1	1.90	9700.0	1550.9	1560.8		1561.6	0.005944	10.1	1828.2	619.9	0.6
Reach 1	1.99	9700.0	1556.3	1563.3	1561.8	1563.6	0.004321	6.5	2376.4	1205.1	0.5
Reach 1	1.99	9700.0	1556.3	1563.5	1562.3	1564.2	0.006341	8.0	1540.3	362.5	0.6
Reach 1	2.08	8400.0	1558.5	1565.6		1565.9	0.004768	7.2	2313.7	1036.3	0.5
Reach 1	2.08	8400.0	1558.5	1566.4		1567.0	0.004789	7.9	1711.4	481.9	0.5
Reach 1	2.13	8400.0	1559.1	1567.2	1567.2	1568.8	0.015243	13.2	1115.0	857.2	0.9
Reach 1	2.13	8400.0	1559.1	1568.0	1567.3	1569.0	0.008190	10.6	1318.3	400.0	0.7
Reach 1	2.19	8400.0	1560.6	1570.1	1568.4	1570.5	0.003213	6.8	2093.9	1295.9	0.4
Reach 1	2.19	8400.0	1560.6	1570.1	1568.6	1570.8	0.005563	8.7	1327.1	254.3	0.6
Reach 1	2.28	8400.0	1564.1	1572.0		1573.2	0.009810	10.8	1157.0	376.0	0.8
Reach 1	2.28	8400.0	1564.1	1572.9		1574.4	0.009602	11.2	919.5	163.7	0.7
Reach 1	2.35	8400.0	1564.9	1574.9		1575.7	0.006118	8.5	1359.0	402.0	0.6
Reach 1	2.35	8400.0	1564.9	1575.8		1576.8	0.005686	9.0	1103.1	206.2	0.6
Reach 1	2.41	8400.0	1565.5	1576.7		1577.3	0.003596	7.8	2066.2	685.5	0.5
Reach 1	2.41	8400.0	1565.5	1577.6		1578.4	0.004129	9.0	1451.1	290.0	0.5
Reach 1	2.46	8400.0	1568.8	1577.7		1579.2	0.014037	11.9	1056.6	358.2	0.9
Reach 1	2.46	8400.0	1568.8	1578.9		1579.9	0.007364	9.8	1189.0	266.4	0.7
Reach 1	2.52	8400.0	1571.6	1580.7		1581.0	0.002670	6.1	2021.3	483.0	0.4
Reach 1	2.52	8400.0	1571.6	1580.9		1581.3	0.002727	6.3	1837.9	374.0	0.4
Reach 1	2.58	8400.0	1573.7	1581.6		1582.5	0.007914	9.9	1449.1	539.5	0.7
Reach 1	2.58	8400.0	1573.7	1581.8		1582.9	0.008378	10.4	1238.2	378.1	0.7
Reach 1	2.64	8400.0	1576.0	1583.9		1584.6	0.005797	8.4	1559.1	461.7	0.6
Reach 1	2.64	8400.0	1576.0	1584.3		1584.8	0.004484	7.6	1702.8	461.6	0.5
Reach 1	2.69	8400.0	1576.5	1585.4		1585.8	0.003609	6.7	1983.9	654.4	0.5
Reach 1	2.69	8400.0	1576.5	1585.4		1585.8	0.003470	6.6	2012.2	656.7	0.5
Reach 1	2.73	6500.0	1578.3	1586.2		1586.9	0.007793	8.6	1183.5	380.6	0.7
Reach 1	2.73	6500.0	1578.3	1586.2		1586.9	0.007723	8.6	1187.1	380.6	0.7
Reach 1	2.77	6500.0	1581.8	1587.8		1588.8	0.010465	9.1	963.0	362.9	0.8
Reach 1	2.77	6500.0	1581.8	1587.8		1588.8	0.010482	9.1	962.5	362.8	0.8
Reach 1	2.84	6500.0	1584.1	1590.7		1591.3	0.005710	7.5	1142.4	326.8	0.6
Reach 1	2.84	6500.0	1584.1	1590.7		1591.3	0.005707	7.5	1142.6	326.8	0.6

Reach 1	2.88	6500.0	1586.8	1592.6	1592.6	1593.7	0.015700	11.5	897.5	364.9	0.9
Reach 1	2.88	6500.0	1586.8	1592.6	1592.6	1593.7	0.015142	11.3	909.0	364.9	0.9
Reach 1	2.93	6500.0	1589.6	1595.6		1596.1	0.005621	7.2	1245.6	369.3	0.6
Reach 1	2.93	6500.0	1589.6	1595.6		1596.1	0.005705	7.2	1239.2	368.9	0.6
Reach 1	2.97	6500.0	1590.8	1597.3	1597.3	1598.6	0.012098	11.5	945.8	345.7	0.8
Reach 1	2.97	6500.0	1590.8	1597.4	1597.4	1598.6	0.011066	11.2	976.6	345.7	0.8
Reach 1	3.05	6500.0	1591.8	1600.9	1599.5	1601.6	0.004638	8.1	1135.0	272.5	0.5
Reach 1	3.05	6500.0	1591.8	1600.8		1601.5	0.004837	8.2	1117.8	271.0	0.5
Reach 1	3.10	6500.0	1594.4	1602.1		1603.0	0.008068	9.0	977.5	275.3	0.7
Reach 1	3.10	6500.0	1594.4	1602.1		1603.0	0.008153	9.1	973.7	275.1	0.7
Reach 1	3.15	6500.0	1596.0	1604.1		1604.8	0.005743	8.7	1123.9	291.3	0.6
Reach 1	3.15	6500.0	1596.0	1604.1		1604.8	0.005730	8.7	1124.7	291.2	0.6
Reach 1	3.24	6500.0	1598.8	1607.2		1608.1	0.008613	9.5	1025.6	292.1	0.7
Reach 1	3.24	6500.0	1598.8	1607.2		1608.1	0.008608	9.5	1025.8	292.1	0.7
Reach 1	3.31	6500.0	1601.9	1610.2		1610.8	0.005724	7.8	1232.5	342.0	0.6
Reach 1	3.31	6500.0	1601.9	1610.2		1610.8	0.005723	7.8	1232.6	342.0	0.6
Reach 1	3.40	6500.0	1604.1	1612.7		1613.6	0.006172	9.3	1073.4	283.4	0.6
Reach 1	3.40	6500.0	1604.1	1612.7		1613.6	0.006170	9.3	1073.5	283.5	0.6
Reach 1	3.46	6500.0	1605.3	1614.4		1615.7	0.007451	10.8	891.1	228.8	0.7
Reach 1	3.46	6500.0	1605.3	1614.4		1615.7	0.007448	10.8	891.1	228.7	0.7
Reach 1	3.54	6500.0	1609.9	1617.9		1618.6	0.005383	7.7	1115.4	292.4	0.6
Reach 1	3.54	6500.0	1609.9	1617.9		1618.6	0.005384	7.7	1115.3	292.4	0.6
Reach 1	3.61	6500.0	1611.3	1620.2		1621.5	0.009602	11.4	925.3	293.0	0.8
Reach 1	3.61	6500.0	1611.3	1620.2		1621.5	0.009591	11.3	925.3	292.6	0.8
Reach 1	3.65	6500.0	1613.9	1622.3		1622.7	0.003826	7.1	1440.0	407.6	0.5
Reach 1	3.65	6500.0	1613.9	1622.3		1622.7	0.003829	7.1	1439.3	407.3	0.5
Reach 1	3.70	3300.0	1615.5	1623.3		1623.5	0.002866	4.9	911.5	268.9	0.4
Reach 1	3.70	3300.0	1615.5	1623.3		1623.5	0.002868	4.9	911.4	268.8	0.4
Reach 1	3.73	3300.0	1618.9	1624.0		1624.2	0.004238	5.0	881.6	328.0	0.5
Reach 1	3.73	3300.0	1618.9	1624.0		1624.2	0.004214	5.0	880.5	321.5	0.5
Reach 1	3.76	3300.0	1620.2	1624.8		1625.2	0.008771	6.7	776.0	394.9	0.7
Reach 1	3.76	3300.0	1620.2	1624.8		1625.2	0.008801	6.7	774.0	393.2	0.7
Reach 1	3.79	3300.0	1621.1	1626.2		1626.6	0.008578	7.6	764.2	409.4	0.7
Reach 1	3.79	3300.0	1621.1	1626.2		1626.6	0.008522	7.6	763.3	404.3	0.7
Reach 1	3.84	3300.0	1621.6	1628.2	1627.9	1629.0	0.008215	8.8	623.9	303.4	0.7
Reach 1	3.84	3300.0	1621.6	1628.2	1627.9	1629.0	0.008268	8.8	622.1	303.0	0.7

ERRORS WARNINGS AND NOTES
Errors Warnings and Notes for Plan : Stkhldr 100E

River: Unnamed Trib Reach: Reach 1 RS: 3.84 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.84 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.79 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.79 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.76 Profile: Existing-100yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.76 Profile: Encr Ex 100
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.70 Profile: Existing-100yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.70 Profile: Encr Ex 100
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.65 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.65 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.61 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.61 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.54 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.54 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.46 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

River: Unnamed Trib Reach: Reach 1 RS: 3.46 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.40 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.40 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.31 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.31 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.24 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.24 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.15 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.15 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.10 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.10 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.05 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 3.05 Profile: Encr Ex 100
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.97 Profile: Existing-100yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The 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.
River: Unnamed Trib Reach: Reach 1 RS: 2.97 Profile: Encr Ex 100
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:The parabolic search method failed to converge on critical depth. The program will try the cross section
slice/secant method to find critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 2.93 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.93 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.88 Profile: Existing-100yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.88 Profile: Encr Ex 100
Warning:The energy equation could not 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 cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:The parabolic search method failed to converge on critical depth. The program will try the cross section
slice/secant method to find critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 2.84 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.84 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.77 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.77 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.73 Profile: Existing-100yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.73 Profile: Encr Ex 100
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.

This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.69 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 2.69 Profile: Encr Ex 100
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.
River: Unnamed Trib Reach: Reach 1 RS: 2.64 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.64 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.58 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.58 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.52 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.52 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.46 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.46 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.41 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.41 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

River: Unnamed Trib Reach: Reach 1 RS: 2.35 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.35 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.28 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.28 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.19 Profile: Existing-100yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.19 Profile: Encr Ex 100
Warning:The energy loss was 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:The parabolic search method failed to converge on critical depth. The program will try the cross section
slice/secant method to find critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 2.13 Profile: Existing-100yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The 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.
River: Unnamed Trib Reach: Reach 1 RS: 2.13 Profile: Encr Ex 100
Warning:The energy loss was 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:The parabolic search method failed to converge on critical depth. The program will try the cross section
slice/secant method to find critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was
used.
River: Unnamed Trib Reach: Reach 1 RS: 2.08 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 2.08 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.99 Profile: Existing-100yr
Warning:Divided flow computed for this cross-section.

Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.99 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.90 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.90 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.84 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.84 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.77 Profile: Existing-100yr
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.77 Profile: Encr Ex 100
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.72 Profile: Existing-100yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 1.72 Profile: Encr Ex 100
Warning:The energy equation could not be balanced within the specified number of iterations. The program used critical depth
for the water surface and continued on with the calculations.
Warning:The cross section had to be extended vertically during the critical depth calculations.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
Warning:The parabolic search method failed to converge on critical depth. The program will try the cross section
slice/secant method to find critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 1.699 Profile: Existing-100yr
Warning:Divided flow computed for this cross-section.
River: Unnamed Trib Reach: Reach 1 RS: 1.699 Profile: Encr Ex 100
Warning:Divided flow computed for this cross-section.
River: Unnamed Trib Reach: Reach 1 RS: 1.69878 Profile: Existing-100yr
Warning:Divided flow computed for this cross-section.
River: Unnamed Trib Reach: Reach 1 RS: 1.69878 Profile: Encr Ex 100
Warning:Divided flow computed for this cross-section.
River: Unnamed Trib Reach: Reach 1 RS: 1.678 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.678 Profile: Encr Ex 100
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.65 Profile: Existing-100yr
Warning:Divided flow computed for this cross-section.
River: Unnamed Trib Reach: Reach 1 RS: 1.65 Profile: Encr Ex 100
Warning:Divided flow computed for this cross-section.
River: Unnamed Trib Reach: Reach 1 RS: 1.64981 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.64981 Profile: Encr Ex 100
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.56 Profile: Existing-100yr
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.56 Profile: Encr Ex 100
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.48 Profile: Existing-100yr
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 1.48 Profile: Encr Ex 100
Warning:The energy equation could not be balanced within the specified number of iterations. The program selected the water
surface that had the least amount of error between computed and assumed values.
Warning:Divided flow computed for this cross-section.
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The
program defaulted to critical depth.
River: Unnamed Trib Reach: Reach 1 RS: 1.47980 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.47980 Profile: Encr Ex 100
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.38 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.38 Profile: Encr Ex 100
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.

River: Unnamed Trib Reach: Reach 1 RS: 1.33 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.33 Profile: Encr Ex 100
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.32982 Profile: Existing-100yr
Warning:Divided flow computed for this cross-section.
River: Unnamed Trib Reach: Reach 1 RS: 1.32982 Profile: Encr Ex 100
Warning:Divided flow computed for this cross-section.
River: Unnamed Trib Reach: Reach 1 RS: 1.29 Profile: Existing-100yr
Warning:Divided flow computed for this cross-section.
River: Unnamed Trib Reach: Reach 1 RS: 1.29 Profile: Encr Ex 100
Warning:Divided flow computed for this cross-section.
River: Unnamed Trib Reach: Reach 1 RS: 1.25 Profile: Existing-100yr
Warning:Divided flow computed for this cross-section.
River: Unnamed Trib Reach: Reach 1 RS: 1.25 Profile: Encr Ex 100
Warning:Divided flow computed for this cross-section.
River: Unnamed Trib Reach: Reach 1 RS: 1.24981 Profile: Existing-100yr
Warning:Divided flow computed for this cross-section.
River: Unnamed Trib Reach: Reach 1 RS: 1.24981 Profile: Encr Ex 100
Warning:Divided flow computed for this cross-section.
River: Unnamed Trib Reach: Reach 1 RS: 1.21 Profile: Existing-100yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.21 Profile: Encr Ex 100
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.19 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.19 Profile: Encr Ex 100
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.15 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.15 Profile: Encr Ex 100
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.09 Profile: Existing-100yr
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.09 Profile: Encr Ex 100
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.
River: Unnamed Trib Reach: Reach 1 RS: 1.00 Profile: Existing-100yr
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.
River: Unnamed Trib Reach: Reach 1 RS: 1.00 Profile: Encr Ex 100
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.

Summary of HEC- RAS Hydraulic Models				
Project Name	**Plan**	**Geometry**	**Flow**	**Remarks**
Watercourse Master Plan-Skunk Creek	WMP Model For Ex. Cond. Q for 2 & 10yr	Updated geometry, n values, CHBsurvey, 2-10yr	Existing Cond Study Q for 2 & 10-yr	Base model for 2-year and 10-year, Model commences at CAP Canal.
	WMP Model For Ex. Cond. Q for 100yr	Updated geometry, n values and CHBsurvey	Existing Cond Study Q for 100-yr	Base model-Non Structural Model, Floodway Profile = Structural Alternative, Model commences at RM 13.28.
	Floodway Structural Alternative 2yr Controlling	Low Impact Structural Controlling	2-yr Controlling Q's	Profile 2 = Cont. Enc 2-yr, 2-year Q, Model commences at RM 13.28 with channel improvements at New River Bridge modeled.
	Floodway Structural Alternative 10yr Controlling	Low Impact Structural Controlling	10-yr Controlling Q's	Profile 2 = Cont. Enc 10-yr, 10-year Q, Model commences at RM 13.28 with channel improvements at New River Bridge modeled.
	Floodway Structural Alternative 100yr Controlling	Low Impact Structural Controlling	100-yr Controlling Q's	Profile 2 = Cont. 100-yr Enc, 100-year Q, Model commences at RM 13.28 with channel improvements at New River Bridge modeled.
	Low Impact Structural Alt. 2-year Controlling	Low Impact Structural 2yr/10yr Controlling	Low Impact Structural 2 yr Controlling	Profile 2 =Low Impact Structural Alternative, 2-year Q, Model commences at CAP Canal.
	Low Impact Structural Alt. 10-yr Controlling	Low Impact Structural 2yr/10yr Controlling	Low Impact Structural 10-yr Controlling	Profile 2= Low Impact Structural Alternative, 10-year Q, Model commences at CAP Canal with channel improvements at New River Bridge modeled.
	Low Impact Structural Alt. 100-yr Controlling	Low Impact Structural Controlling	Low Impact Structural Alt. Controlling Q 100	Profile 2 = Low Impact Structural Alternative, Model commences at RM 13.28 with channel improvements at New River Bridge modeled.
	Stakeholder Alternative Ex 2yr	Stakeholder Alt Phase I 2yr-10yr	Stakeholder Alternative 2yr Existing	Profile 2 =Stakeholder Alternative, 2-year Q, Model commences at CAP Canal.
	Stakeholder Alternative 10yr Existing	Stakeholder Alt Phase I 2yr-10yr	Stakeholder Alternative 10yr Existing	Profile2 = Stakeholder Alternative, 10-year Q, Model commences at CAP Canal.
	Stakeholder Alternative 100yr Existing	Stakeholder Alt Phase I 100yr	Stakeholder Alternative 100yr Existing	Profile 2 = Stakeholder Alternative, Model commences at RM 13.28.
Watercourse Master Plan-Unnamed Trib (Sonoran Wash)	WMP Model for Ex Cond for 10 & 2yr	Old Existing Cond Geo for 10&2yr	New Existing Cond Study for 10 & 2yr	Base model for 2-year and 10-year, Model commences at CAP Canal.
	WMP Model for Ex. Cond. Q for 100yr	New Existing Cond Geo for 100yr	New Existing Cond Study Q for 100yr	Base Model-Non Structural Model, Floodway Profile = Structural Alternative, Model commences at RM 0.92.

APPENDIX D

CD WITH HEC-RAS FILES

Summary of HEC- RAS Hydraulic Models - Continued				
Project Name	**Plan**	**Geometry**	**Flow**	**Remarks**
	Low Impact Structural Alt Existing 2yr	Old Existing Cond Geo for 10&2yr	Team Existing Cond 2yr	Profile 2 =Team Alternative, 2-year Q, Model commences at CAP Canal.
	Low Impact Structural Alt Existing 10yr	Old Existing Cond Geo for 10&2yr	Team Existing Cond 10yr	Profile 2 = Team Alternative, 10-year Q, Model commences at CAP Canal.
	Low Impact Structural Alt Existing 100yr	New Existing Cond Geo for 100yr	Team Existing Cond 100yr	Profile 2 = Team Alternative, Model commences at RM 0.92.
Watercourse Master Plan-Unnamed Trib (Sonoran Wash)	Stakeholder Alt Existing 2yr	Stakeholder Alternative Geo for 2yr	Stakeholder Existing Cond 2yr	Profile 2=Stakeholder Alternative, 2-year Q, Model commences at CAP Canal.
	Stakeholder Alt Existing 10yr	Stakeholder Alternative Geo for 2yr	Stakeholder Existing Cond 10yr	Profile2= Stakeholder Alternative, 10-year Q, Model commences at CAP Canal.
	Stakeholder Alt Existing 100yr	Stakeholder Alternative Geo for 100yr	Stakeholder Existing Cond 100yr	Profile 2 = Stakeholder Alternative, Model commences at RM 0.92.

APPENDIX D

CD WITH HEC-RAS FILES

CD WITH HEC-RAS FILES