

# **Floodplain Technical Memorandum**

## **New Pueblo Freeway**

CDOT Project No. 158128; IM 0251-156; SA 12831

Project Control No. 12831

**Colorado Department of Transportation**

February 2005

In some cases, information in this Environmental Technical Report may have been refined or updated as preparation of the DEIS advanced. In such cases, the information and conclusions presented in the DEIS supersede all previous background material included in this Technical Report.



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# Project Description

The Federal Highway Administration (FHWA), in cooperation with the Colorado Department of Transportation (CDOT), is preparing an Environmental Impact Statement (EIS) for the New Pueblo Freeway project, a proposal to improve a 7-mile segment of Interstate 25 (I-25) through Pueblo, Colorado. Improvements are necessary to address an outdated roadway and bridges with inadequate geometrics, safety issues, and existing and future traffic demand.

Alternatives under consideration include taking no action (No Action Alternative), reconstruction of the interstate on essentially the existing alignment (Existing I-25 Alternative), and reconstruction of the interstate on existing and new alignments (Modified I-25 Alternative). The alternatives are further described as follows:

- **No Action Alternative** - This alternative provides only for minor improvements, repairs, and other maintenance actions. The existing four-lane highway will otherwise remain unchanged.
- **Existing I-25 Alternative** - This alternative consists of reconstructing I-25 to six lanes on essentially the same location, reconfiguring and eliminating access points to the interstate to improve safety, and providing other improvements to the local street system to enhance system connectivity and traffic movement near the interstate.
- **Modified I-25 Alternative** - This alternative consists of rebuilding I-25 to six lanes and providing the other improvements included in the Existing I-25 Alternative, except the alignment would be shifted to accommodate different interchange configurations.

Transportation Management strategies and design variations of grade and alignment are incorporated into the build alternatives.

## Introduction

FHWA, in cooperation with CDOT, is preparing an EIS for the New Pueblo Freeway project, a proposal to improve a 7-mile segment of I-25 through Pueblo, Colorado. Improvements are necessary to address a deteriorating roadway and bridges with inadequate geometrics, safety issues, and existing and future traffic demand. The project vicinity is shown in Exhibit 1.

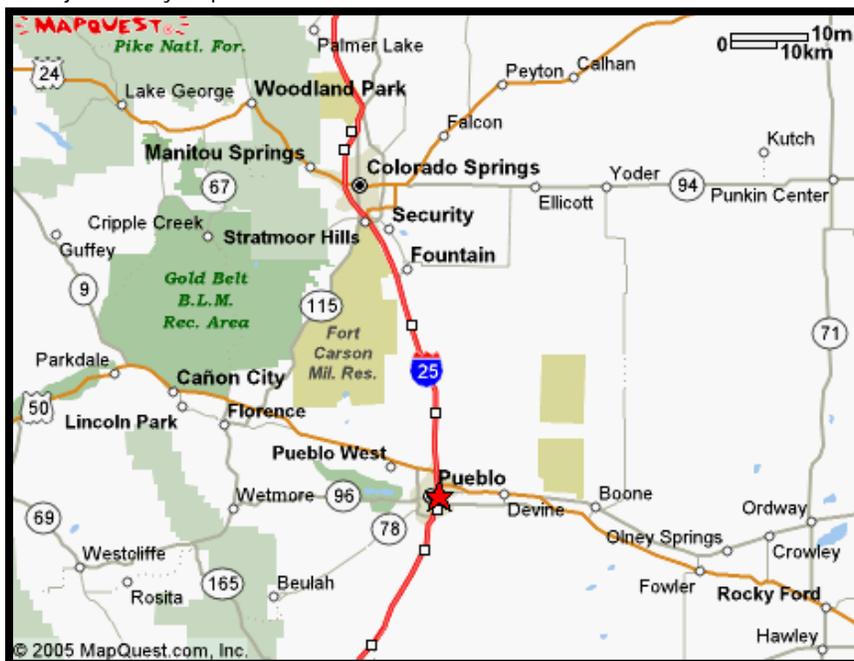
Alternatives under consideration include taking no action (No Action Alternative), reconstruction of the interstate on essentially the existing alignment (Existing I-25 Alternative), and reconstruction of the interstate on existing and new alignments (Modified I-25 Alternative). The alternatives are further described as follows:

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EXHIBIT 1  
Project Vicinity Map



Two Federal Emergency Management Agency (FEMA) regulated floodplains are in the vicinity of the project limits, Fountain Creek and Arkansas River. Exhibit 2 shows the general limits of the Existing I-25 Alternative and the Modified I-25 Alternatives as well as the Fountain Creek and Arkansas River floodplains. Fountain Creek runs parallel to I-25 along the northern half of the project. Arkansas River crosses the project limits at the approximate midpoint. The purpose of this floodplain analysis is to determine the potential effects of the New Pueblo Freeway project on these regulatory floodplains.

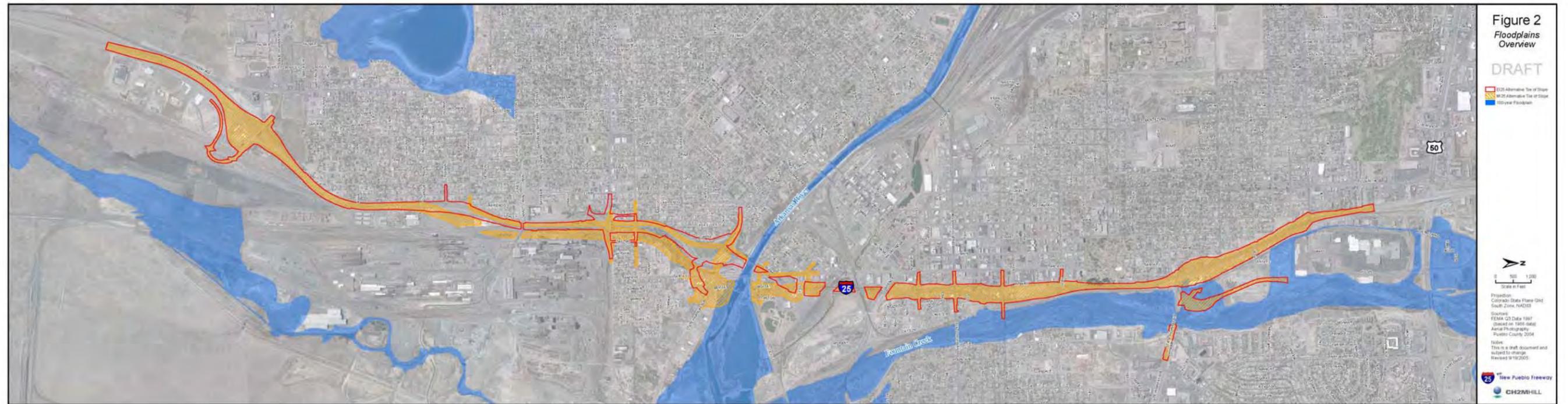
## History of Fountain Creek and Arkansas River

### Fountain Creek

The Fountain Creek watershed encompasses approximately 927 square miles. The creek originates west of Colorado Springs, near Pikes Peak, and terminates in Pueblo at the Arkansas River confluence. The watershed is approximately 65 miles long and varies in elevation from 4,625 feet to 14,110 feet. Flooding in the creek is caused by spring snowmelt and high intensity rain events within the watershed.

Within the New Pueblo Freeway project area, portions of existing and proposed I-25 are adjacent to the 100-year Fountain Creek floodplain between 8th Street and the northern project limit (approximately 33rd Street) as shown in Exhibit 2. In this area, bridges span Fountain Creek at 8th Street and US Highway 50B (US 50B). Based on current Flood Insurance Rate Maps (FIRM), no encroachment will occur on the Fountain Creek floodplain as a result of this project outside of the area between 8th Street and 33rd Street. The Fountain Creek analysis presented in this Technical Memorandum includes this area.

EXHIBIT 2  
General Limits of the Build Alternatives and the Fountain Creek and Arkansas River Floodplains



The current Flood Insurance Study (FIS) for Fountain Creek within the City of Pueblo was completed in 1986. Of particular note, the analysis performed for the FIS showed overbank flows on both sides of the creek in the area immediately north of 8th Street. Since the FIS was published, a number of projects have been completed along the creek.

Shortly after the completion of the current FIS, the United States Army Corps of Engineers (USACE) constructed a levee on the east bank of the creek from approximately 8th Street to 13th Street, and a floodwall on the west bank from 8th Street to 11th Street to protect I-25 and the existing railroad tracks. The levee and floodwall prevent overflow of the banks in the area north of 8th Street. As a result of these projects, FEMA issued a Letter of Map Revision (LOMR) in 1991 that reflects the elimination of overbank flows in this area.

The USACE has undertaken additional projects along the reach of Fountain Creek between 8th Street and Colorado State Highway 47 (CO 47) to protect highly erodable banks by installing rip rap protection in various locations. These projects were intended to stabilize the existing banks, and did not result in any map revisions by FEMA.

CDOT completed improvements to the CO 47/I-25 Interchange in 1998. This project included extension of Dillon Drive from CO 47 to 28th Street. These improvements resulted in the acceptance of a Conditional Letter of Map Revision (CLOMR) in 1998. The CLOMR reflects the effects of the Dillon Drive embankment on the west side of the Fountain Creek floodplain between CO 47 and 28th Street.

It is widely accepted by FEMA and USACE that significant geomorphic changes have occurred to Fountain Creek in this area since the FIS was published. The Fountain Creek Watershed Study (FCWS) is underway in an effort to understand these changes. This study consists of updated hydrologic and hydraulic analyses of the watershed. At this time, the hydrologic analysis has been completed and is nearing acceptance. The hydraulic analysis is underway, but completion and acceptance are not expected for several years. Results of the hydrologic analysis show significant decreases in the expected flood flows in Fountain Creek. The regulatory (100-year) flow for Fountain Creek is currently 64,000 cubic feet per second (cfs); the flow proposed as a result of the updated hydrologic study is 41,000 cfs. Once the FCWS is completed, FEMA will update their Digital Flood Insurance Rate Maps (DFIRM) for the project area.

## **Arkansas River**

The Arkansas River watershed above Fountain Creek encompasses approximately 4,704 square miles. The river originates near Leadville, and the watershed varies in elevation from 4,625 feet at Fountain Creek to over 14,000 feet. Flooding in the river is caused by spring snowmelt and high intensity rain events within the watershed. In the vicinity of the New Pueblo Freeway project, flooding is controlled by Pueblo Dam.

The current FIS for Arkansas River within the City of Pueblo was completed in 1986. The river through Pueblo is confined between floodwalls, and no significant development has taken place within the floodplain in the project vicinity since completion of the FIS.

## Data Collection, Methods and Assumptions

The floodplain analyses to assess the impacts to the Fountain Creek and the Arkansas River floodplains were performed using the standard methodology prescribed by FEMA. The methodology consists of establishing Existing and Post-Project Conditions, as described below, to determine any effects on the Regulatory Floodplain as a result of proposed improvements within the floodplain. The methodology is as follows:

1. **Obtain Effective Model and any revisions from FEMA through their contractor, Michael Baker Jr., Inc.** The effective model is the analysis used as the basis for the FIS and floodplain mapping. Any revisions made to the Effective Model through the CLOMR and LOMR processes are incorporated into the Effective Model to create the Corrected Effective Model. Two revisions have been made to the Effective Model for Fountain Creek since the FIS was completed; none have been made to the Arkansas River modeling. The Fountain Creek model revisions are discussed in the following section.
2. **Develop Duplicate Effective Model from Corrected Effective Model.** The Effective and Corrected Effective Models are developed using the USACE HEC-2 program. To develop the Duplicate Effective Model, the Corrected Effective Model is recreated in the USACE HEC-RAS program, as it has become a standard software package for this application. Input information transfers from HEC-2 to HEC-RAS; however, because of differences in the calculation procedures used, results vary slightly between the programs. The Duplicate Effective Model is assumed to reflect existing conditions from which impacts can be assessed.
3. **Develop Post-Project Conditions Model.** Cross sections in the Duplicate Effective Model are modified to reflect encroachments within the floodplain to create the Post-Project Conditions Model. Any differences between results of the Duplicate Effective and Post-Project Conditions Models reflect the impacts of proposed development within the floodplain.

The EIS is expected to be completed prior to completion of the FCWS and associated DFIRM update. The proximity of the project to the Fountain Creek floodplain requires this impact study to proceed at this time to determine what, if any, effects the project may have on the floodplain and allow the New Pueblo Freeway project to proceed.

To allow this floodplain assessment to proceed within the schedule for the New Pueblo Freeway project, a Check Model was developed for Fountain Creek that incorporates the geomorphic changes in the drainage way since the publication of the FIS. By showing that the Check Model results in lower base flood elevations than the Duplicate Effective Model, the use of the Duplicate Effective Model for this analysis is validated as the worst-case scenario. Inclusion of the Check Model analysis is in addition to standard methodology and per FEMA direction. Pueblo County provided topographic mapping of the project area for use in the Check Model.

A detailed discussion of the approach to the floodplain analyses follows. Accomplishment of these analyses allows for full determination of any impacts associated with the New Pueblo Freeway project.

## Existing Conditions

Existing conditions are defined to determine an appropriate study reach for the Fountain Creek and Arkansas River floodplains. Regulatory floodplain mapping is compared to the proposed project boundaries to determine the reach over which impacts may occur.

### Fountain Creek

As stated above, the extent of the study reach was determined by comparison of the regulatory floodplain limits to the proposed project limits. Based on this comparison, it was determined that no encroachment would occur on the floodplain south of the 8th Street bridge or north of 28th Street (see Exhibit 2). The downstream limit was set at the first cross section south of 8th Street. Since the effects of any floodplain encroachment will be seen upstream of the location of the encroachment, the upstream limit of the study reach was set just downstream of the CO 47 bridge. Detailed analysis of this study reach shows that encroachment on the Fountain Creek floodplain by the proposed project is limited to the area within approximately 1,500 feet north of the US 50B bridge. Results of the Fountain Creek analyses given in the body of this Technical Memorandum are limited to this area; complete results for the full study area are included in Appendix A.

As discussed previously, the study reach encompasses a portion of Fountain Creek for which the Effective Model has been revised since the FIS. The reach north of US 50B has been revised by a CLOMR in 1998 associated with the CO 47/I-25 Interchange project. The reach south of US 50B has been revised in 1991 by a LOMR associated with USACE levee improvements. The 1991 LOMR and 1998 CLOMR, therefore, serve as the basis for the Corrected Effective and Duplicate Effective Models from which impacts associated with the New Pueblo Freeway project are assessed. Exhibit 3 shows the comparison of computed Base Flood Elevation (BFE) between the Corrected Effective Model and the Duplicate Effective Model for Fountain Creek.

#### EXHIBIT 3

##### Fountain Creek Floodplain—Results of Duplicate Effective Model

Section	Base Flood Elevation (ft, NGVD '29)		
	Corrected Effective	Duplicate Effective	Difference
8150	4,723.0	4,723.0	0.0
8100	4,721.2	4,721.1	-0.1
8050	4,720.4	4,720.2	-0.2
8000	4,719.3	4,719.2	0.0
7050	4,713.7	4,713.7	0.0
7000	4,712.1	4,712.0	-0.1
6950	4,707.4	4,708.3	0.9
6900	4,708.5	4,709.1	0.7
6850	4,707.7	4,708.6	0.9
6817	4,704.3	4,705.4	1.1
6749	4,702.6	4,702.6	0.1
6700	4,700.4	4,700.5	0.0

The US 50B bridge is located at Section 6749. The differences seen in BFE at the sections upstream of the bridge are due differences in the way bridges are modeled between HEC-2 and HEC-RAS. Although there are differences between the Effective and Duplicate Effective Models as seen in Exhibit 3, the Duplicate Effective model will serve as the Existing Conditions model from which impacts associated with the project will be assessed. Those impacts will be discussed in a later section.

### *Arkansas River*

Arkansas River crosses the project limits at the approximate midpoint as shown in Exhibit 2. Since proposed improvements in the vicinity of Arkansas River are limited to this single crossing, the study reach is relatively short.

In the vicinity of the project limits, flooding in the Arkansas River is controlled by two factors. From approximately the existing I-25 bridge upstream to Pueblo Dam, flooding is controlled by flow released from the dam that is significantly lower than what would be expected for uncontrolled flow. Downstream of the existing I-25 bridge to the Fountain Creek confluence, flooding is controlled by the backwater created when Fountain Creek is at flood stage. For this reason, the Arkansas River model is run with two different flow rates that have different starting downstream water surface elevations. Exhibit 4 shows the comparison of computed BFE between the Effective Model and the Duplicate Effective Model for Arkansas River. Complete results for the Arkansas River analyses are given in Appendix B.

#### EXHIBIT 4

#### Arkansas River Floodplain—Results of Duplicate Effective Model

Section	Base Flood Elevation (ft, NGVD '29)		
	Effective	Duplicate Effective	Change
4060	4,650.8	4,650.8	0.0
4030	4,648.0	4,648.0	0.0
4020*	4,643.9	4,643.9	0.0
4010*	4,645.6	4,645.6	0.0
4008*	4,645.6	4,645.7	0.1

### *Fountain Creek Check Model*

Since it is anticipated that significant changes to the hydraulic and hydrologic characteristics of Fountain Creek will result from the FCWS, it is important to understand how the changes might affect the Regulatory Floodplain. The impacts associated with these changes will not be fully understood until the completion of the FCWS, which is several years away, so it was determined, as previously discussed, that a Check Model would be developed to assess how the changes might impact the Regulatory Floodplain. With the significant reduction in the 100-year discharge proposed by the FCWS, it is anticipated that the Corrected Effective Model would provide for the worst case scenario but will be confirmed with the Check Model.

The Fountain Creek Check Model was developed for the same reach of Fountain Creek as discussed above, using existing topography to define cross sections and adopting the 100-year discharge proposed by the FCWS. Seven cross sections were taken at locations along the study reach corresponding to cross sections in the Corrected Effective Model. The cross sections are generally spaced evenly along the reach, except where bridges exist. Locations of Check Model cross sections are shown in Appendix A. Exhibit 5 shows the results of the Check Model compared to the Duplicate Effective Model BFE. It should be noted that topography used to develop cross sections for the Check Model did not define the Fountain Creek channel bottom. The actual minimum channel bottom elevation for each of the Check Model cross sections is likely 1.5 to 2.0 feet lower than the model reflects. This causes the water surface elevations to be calculated higher than what might be expected if the channel bottom were defined. In this way, the results of the Check Model are conservative.

EXHIBIT 5  
Fountain Creek Check Model Analysis Results

Section		Elevation (ft, NGVD 29)		
Check Model	Duplicate Effective Model	Check Model	Duplicate Effective Model	Difference (ft)
600	8,300	4,734.3	4,738.3	-4.0
500	8,250	4,732.8	4,735.5	-2.7
400	8,100	4,720.6	4,721.1	-0.6
300	7,000	4,710.7	4,712.0	-1.3
250	6,749	4,701.8	4,702.6	-0.9
200	5,900	4,692.1	4,692.5	-0.4
100	4,850	4,678.7	4,682.7	-4.0

As shown in Exhibit 5, the calculated BFE for the Check Model is lower than the BFE calculated by the Duplicate Effective Model. Based on these results, it was determined that the Duplicate Effective Model would provide a worst case scenario from which impacts associated with the New Pueblo Freeway project should be derived.

## Impacts – Fountain Creek

### No Action Alternative

There would be no impacts to the Fountain Creek floodplain if the No Action Alternative is chosen.

### Existing and Modified Alternatives

Proposed development within the Fountain Creek floodplain is limited to the area around the US 50B intersection with Dillon Drive, therefore, analysis focused on this area of the study reach. In this area, the Existing I-25 Alternative and Modified I-25 Alternatives are coincident, so impacts would be the same regardless of the chosen alternative. In general, the proposed improvements in this area include replacement of the US 50B Bridge, reconstruction of the I-25/US 50B interchange, and extension of Dillon Drive from

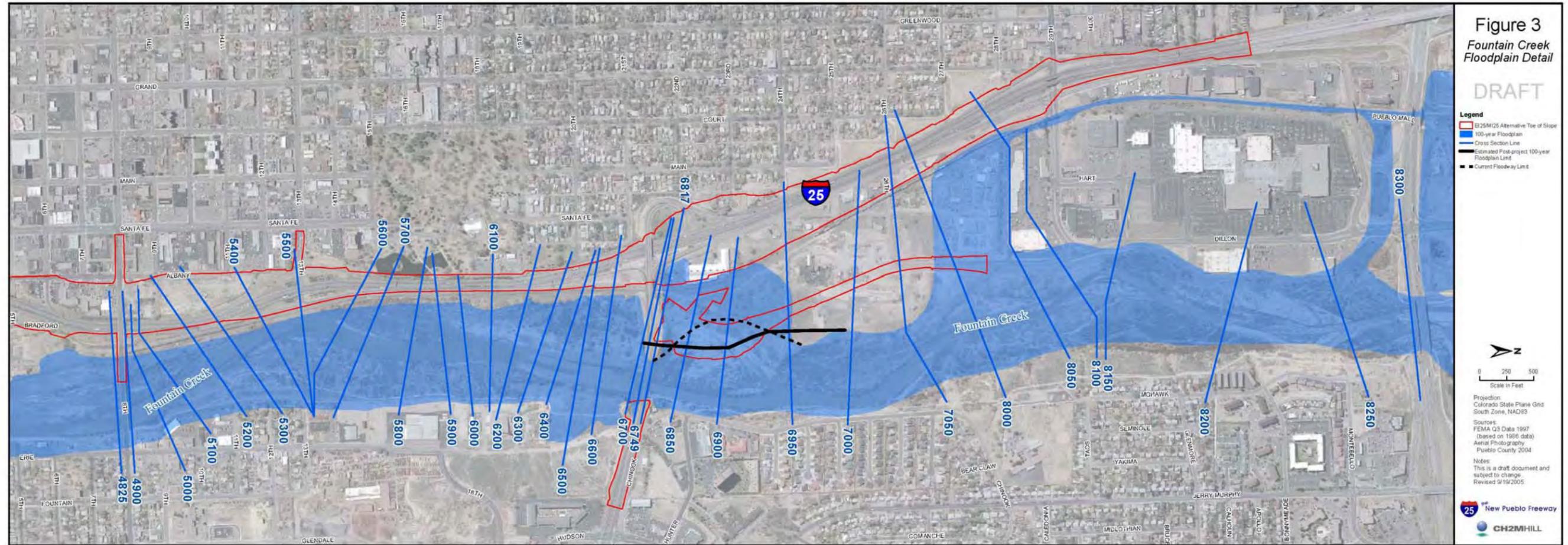
29th Street to US 50B. The new bridge will have a wider span than the existing bridge, so it will have greater conveyance capacity. This tends to decrease the BFE near the bridge. Dillon Drive is proposed to be built on fill, with the footprint of the road in the Fountain Creek floodplain.

In the area between the US 50B and CO 47 bridges, the existing downstream hydraulic control is at the US 50B Bridge. For the proposed developed condition, the expansion of the bridge and construction of the Dillon Drive embankment upstream of the US 50B Bridge transfers hydraulic control from the bridge to the two cross sections upstream of the bridge where the Dillon Drive embankment encroaches upon the floodplain (see Exhibit 7). Exhibit 6 shows the existing and proposed BFE, channel velocity, and floodplain width for the Fountain Creek floodplain. The overall floodplain width either remains the same or decreases over most cross-sections with the exception of Sections 6950 and 7000 and at the widened US 50B Bridge. The slight increase in inundated area at these sections is confined by the bridge abutments and Dillon Drive embankment.

EXHIBIT 6  
Fountain Creek Floodplain Analysis Results

Section	Elevation (ft, NGVD '29)			Floodplain Width (ft)			Velocity (ft/s)		
	Existing	Proposed	Change	Existing	Proposed	Change	Existing	Proposed	Change
8150	4,723.0	4,723.0	0.0	861	861	0	10.2	10.2	0.0
8100	4,721.4	4,721.4	0.0	914	917	3	10.5	10.5	0.0
8050	4,720.7	4,720.7	0.1	1004	916	-88	9.0	8.9	-0.1
8000	4,719.2	4,719.2	0.0	1807	1792	-15	7.7	7.9	0.2
7050	4,713.7	4,714.0	0.3	634	636	1	14.9	14.3	-0.6
7000	4,712.0	4,713.3	1.3	679	789	110	9.6	8.5	-1.1
6950	4,708.6	4,710.5	1.9	590	782	192	13.5	12.7	-0.8
6900	4,709.4	4,707.6	-1.8	1354	496	-858	5.6	13.3	7.7
6850	4,708.9	4,704.1	-4.8	1484	466	-1018	6.8	16.1	9.3
6817	4,706.1	4,704.0	-2.2	390	505	116	12.9	11.6	-1.3
6749.5	<b>US Highway 50B Bridge</b>								
6749	4,702.6	4,700.8	-1.8	374	492	118	17.6	16.1	-1.5
6700	4,700.5	4,700.5	0.0	892	892	0	16.1	16.1	0.0

EXHIBIT 7  
Fountain Creek Floodplain Detail



The proposed Dillon Drive embankment would encroach upon the Fountain Creek floodway. Most of the difference in area between the floodway and floodplain in this area is classified as ineffective flow area, so the impacts on the floodway are similar to the impacts on the floodplain in regard to BFE and channel velocity. Exhibit 8 shows the impacts to the Fountain Creek floodway.

EXHIBIT 8  
Fountain Creek Floodway Analysis Results

Section	Floodway Elevation (ft, NGVD '29)			Floodway Width (ft)		
	Existing	Proposed	Change	Existing	Proposed	Change
8150	4,723.04	4,723.03	-0.01	852	852	0
8100	4,721.53	4,721.5	-0.03	802	802	0
8050	4,720.92	4,720.88	-0.04	909	909	0
8000	4,719.28	4,719.17	-0.11	985	983	-2
7050	4,713.69	4,713.97	0.28	634	636	1
7000	4,712.05	4,713.27	1.22	679	690	11
6950	4,708.65	4,710.52	1.87	496	506	10
6900	4,709.41	4,707.62	-1.79	870	457	-413
6850	4,708.89	4,704.1	-4.79	688	466	-222
6817	4,706.13	4,703.98	-2.15	390	505	116
6749.5	<b>US Highway 50B Bridge</b>					
6749	4,702.64	4,700.8	-1.84	374	492	118
6700	4,700.49	4,700.49	0	679	679	0

## Impacts – Arkansas River

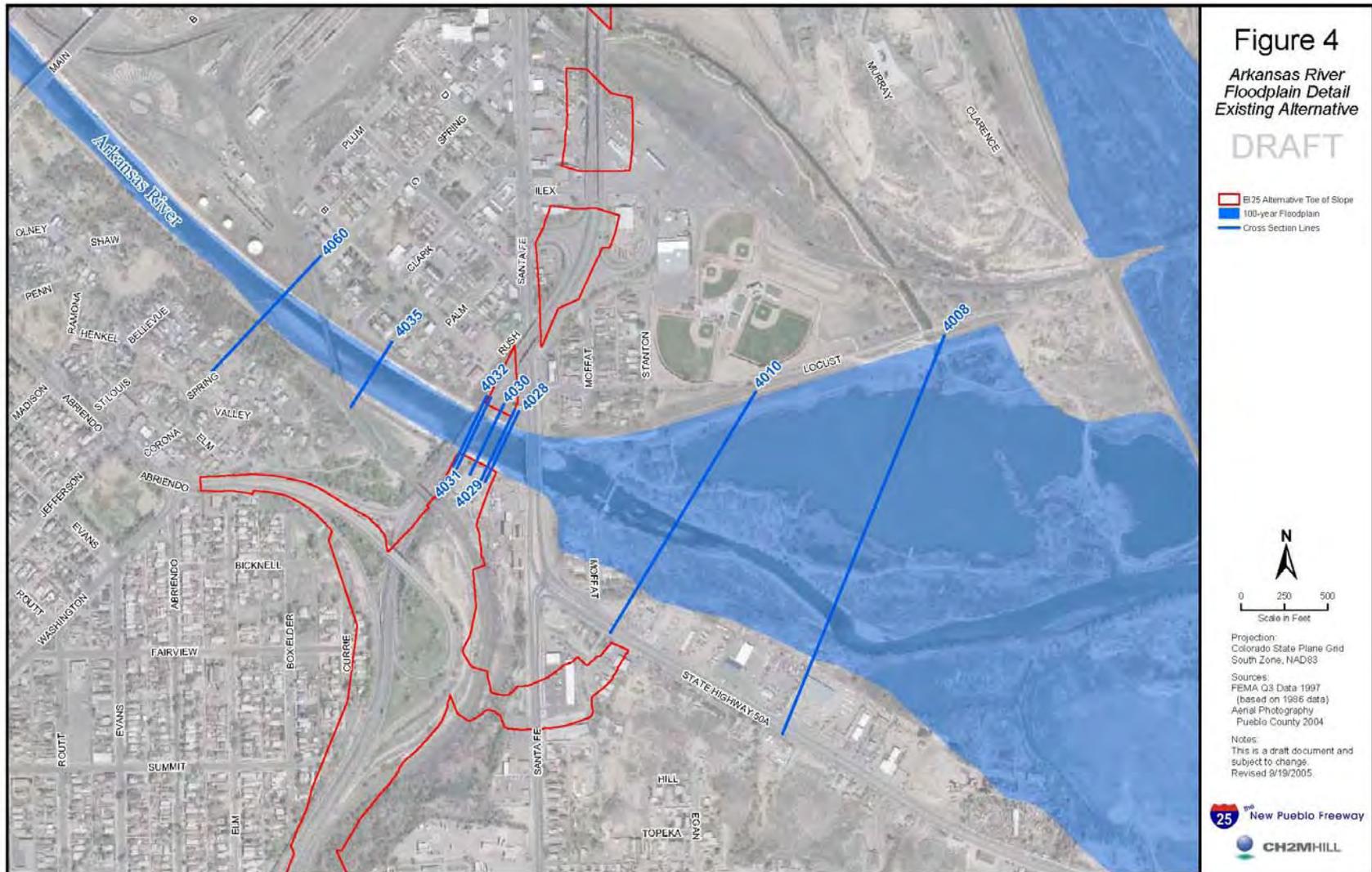
### No Action Alternative

There would be no impacts to the Arkansas River floodplain if the No Action Alternative is chosen.

### Existing I-25 Alternative

Impacts to the Arkansas River floodplain for the Existing I-25 Alternative would be limited to replacement of the existing I-25 Bridge in its approximate current location (see Exhibit 9). In this area, the Arkansas River is confined on both banks by the existing floodwalls.

EXHIBIT 9  
 Arkansas River Floodplain Detail- Existing Alternative



The existing I-25 Bridge has one set of piers between the floodwalls. The proposed bridge would also have a single set of piers inside the floodwalls. The similar configuration of the bridges results in minimal impacts to the Arkansas River floodplain. In this area, the floodplain and floodway are coincident, so impacts to both are very similar. Exhibit 10 shows the existing and proposed floodplain BFE, channel velocity, and width. As shown, there are virtually no impacts to the Arkansas River if this alternative is chosen. Additional cross sections shown Exhibit 10 have been added to accurately define the limits of proposed improvements where there were no existing cross sections.

**EXHIBIT 10**

Arkansas River Floodplain Analysis Results – Existing I-25 Alternative

\*Section Reflects Proposed I-25 Bridge Piers

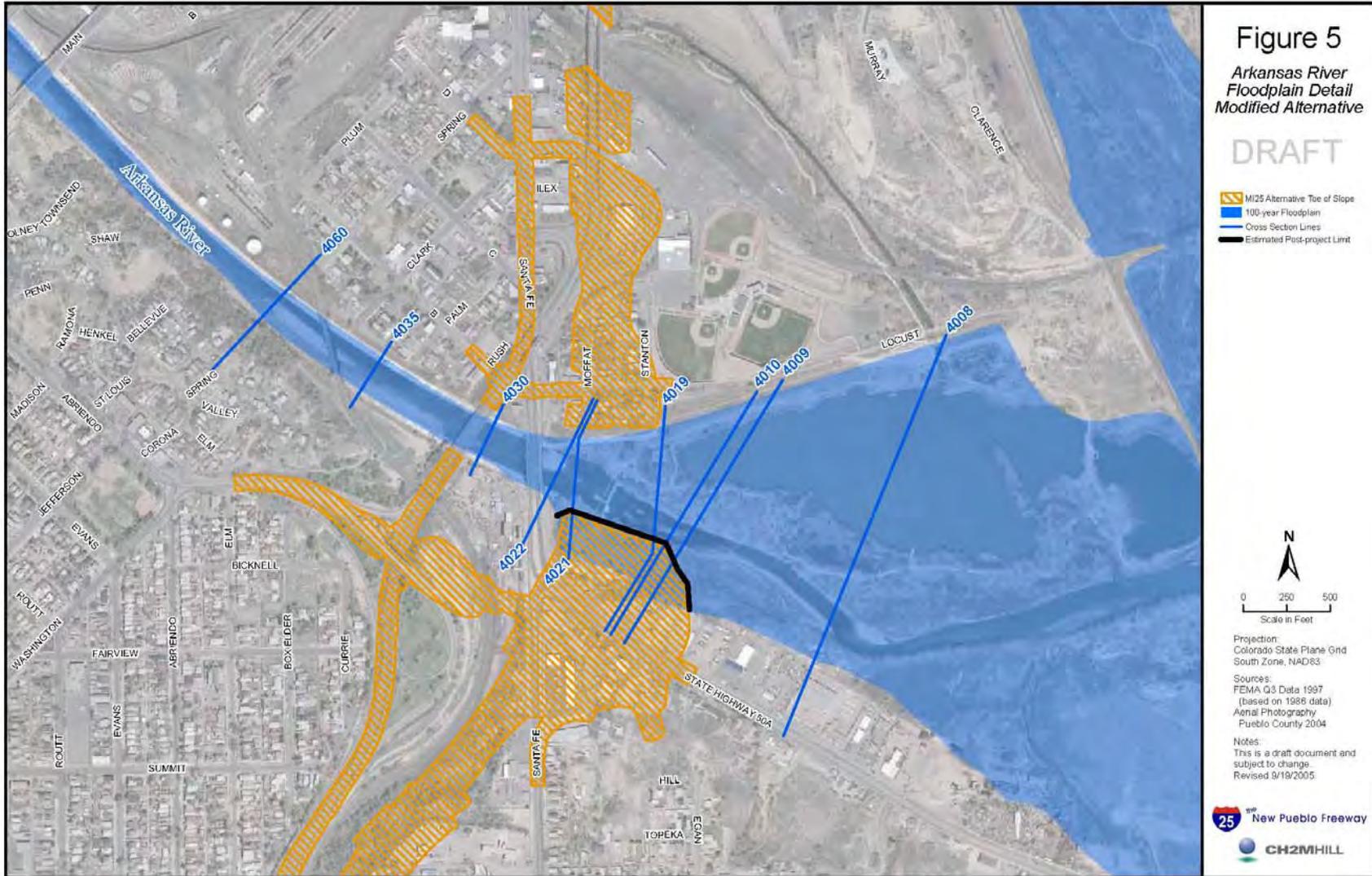
Section	Base Flood Elevation (feet, NGVD '29)			Floodplain Width (ft)			Velocity (ft/s)		
	Existing	Proposed	Change	Existing	Proposed	Change	Existing	Proposed	Change
4060	4,653.3	4,653.3	0.0	139	139	0	16.7	16.7	0.0
4035	4,649.5	4,649.5	0.0	196	196	0	14.9	14.9	0.0
4032	4,647.6	4,647.9	0.3	200	201	1	13.4	12.9	-0.5
<b>4031*</b>	<b>4,647.5</b>	<b>4,647.5</b>	<b>-0.1</b>	<b>200</b>	<b>197</b>	<b>-3</b>	<b>13.3</b>	<b>13.6</b>	<b>0.3</b>
<b>4030*</b>	<b>4,647.5</b>	<b>4,647.4</b>	<b>-0.1</b>	<b>209</b>	<b>205</b>	<b>-3</b>	<b>12.7</b>	<b>13.0</b>	<b>0.4</b>
<b>4029*</b>	<b>4,647.5</b>	<b>4,647.3</b>	<b>-0.1</b>	<b>202</b>	<b>198</b>	<b>-3</b>	<b>12.5</b>	<b>12.9</b>	<b>0.4</b>
4028	4,647.3	4,647.3	0.0	201	201	0	12.7	12.7	0.0
4020	4,645.7	4,645.7	0.0	367	367	0	3.8	3.8	0.0
4010	4,645.7	4,645.7	0.0	1,225	1,225	0	1.0	1.0	0.0
4008	4,645.7	4,645.7	0.0	1,987	1,987	0	0.5	0.5	0.0

**Modified I-25 Alternative**

The Modified I-25 Alternative includes construction of a new bridge across Arkansas River, new access ramps to I-25, and realignment of Sante Fe Avenue to make use of the existing I-25 Bridge. The new I-25 Bridge would be located east of the existing bridge (see Exhibit 11). The downstream portion of the new crossing is located outside of the area confined by the floodwalls, creating a longer bridge span and more piers within the floodplain. The south abutment of the new bridge is proposed to be located within the Arkansas River floodplain.

As described previously, two conditions exist for flooding on this portion of the Arkansas River. Encroachments on the floodplain are mostly confined to the portion of the river that is controlled by backwater from Fountain Creek. In this area, channel velocity is significantly lower, and the effects of encroachments are minimal. Exhibit 12 shows the existing and proposed BFE, channel velocity, and floodplain width for the Arkansas River for the Modified I-25 Alignment. Transition of control from Fountain Creek backwater to Pueblo Reservoir release occurs between Sections 4022 and 4030. Exhibit 11 shows these Sections are located near the upstream edge of the proposed improvements.

EXHIBIT 11  
 Arkansas River Floodplain Detail-Modified Alternative



Additional cross sections shown in Exhibit 12 have been added to accurately define the limits of proposed improvements where there were no existing cross sections.

EXHIBIT 12  
Arkansas River Floodplain Analysis Results—Modified Alternative

Section	Floodplain Elevation (ft, NGVD '29)			Floodplain Width (ft)			Velocity (ft/s)		
	Existing	Proposed	Change	Existing	Proposed	Change	Existing	Proposed	Change
4060	4,651.6	4,651.5	0.0	198	197	0	11.4	11.4	0.1
4035	4,650.8	4,650.8	-0.1	206	206	0	10.7	10.7	0.1
4030	4,646.9	4,647.0	0.1	195	195	0	14.9	14.7	-0.2
4022	4,645.6	4,645.6	0.0	258	260	2	2.2	2.1	0.0
4021	4,645.6	4,645.6	0.0	251	253	2	2.0	2.0	0.0
4020.5	<b>Proposed Interstate 25 Bridge Location</b>								
4019	4,645.6	4,645.6	0.0	703	574	-129	1.0	1.1	0.1
4010	4,645.6	4,645.6	0.0	1,116	984	-132	0.6	0.7	0.1
4009	4,645.6	4,645.6	0.0	1,095	1,095	0	0.7	0.7	0.0
4008	4,645.6	4,645.6	0.0	1,890	1,890	0	0.4	0.4	0.0

The floodplain and floodway are coincident over most of the reach where improvements are proposed. Exhibit 13 shows the existing and proposed floodway BFE and width. Again, impacts are minimal because of the backwater control.

EXHIBIT 13  
Arkansas River Floodway Analysis Results—Modified Alternative

Section	Elevation (ft, NAVD '29)			Floodway Width (ft)		
	Existing	Proposed	Change	Existing	Proposed	Change
4060	4,651.6	4,651.5	0.0	198	198	0
4035	4,650.8	4,650.8	-0.1	206	206	0
4030	4,646.9	4,647.0	0.1	195	195	0
4022	4,646.5	4,646.5	0.1	240	240	0
4021	4,646.4	4,646.5	0.0	246	246	0
4020.5	<b>Proposed Interstate 25 Bridge Location</b>					
4019	4,646.4	4,646.4	0.0	578	444	-134
4010	4,646.4	4,646.4	0.0	977	844	-133
4009	4,646.4	4,646.4	0.0	1,000	1,000	0
4008	4,646.4	4,646.4	0.0	1,845	1,845	0

## Conclusion

CH2M HILL performed floodplain analyses on Fountain Creek and Arkansas River to determine the potential impacts of proposed improvements to I-25 on flooding conditions for both watercourses.

The No Action Alternative will result in no impacts to either the Fountain Creek or Arkansas River floodplains.

Since the Existing I-25 Alternative and Modified I-25 Alternatives are coincident where improvements are proposed within the limits of the Fountain Creek 100-year floodplain, impacts will be the same regardless of the alternative chosen. The Fountain Creek analysis showed floodplain and floodway impacts in the vicinity of the US 50B Bridge. Widening of the US 50B bridge results in a decreased BFE and increased velocity at the bridge; however, the extension of Dillon Drive to US 50B encroaches on the floodplain and floodway and results in an increased BFE and decrease in channel velocity upstream of the bridge. Proposed improvements subjected to Fountain Creek flows will have to be protected from erosion. Erosion protection could include channel bed stabilization, rip rap armoring, slope paving, and guide banks. Selection of mitigation measures to prevent erosion, if required, will be included in the design phase of the project.

The Arkansas River analysis showed minimal impacts to the 100-year floodplain and floodway flow characteristics regardless of the alternative chosen. Impacts to the floodplain are minimized because most improvements are located in a portion of the river that is controlled by backwater from flooding in Fountain Creek. For the Existing I-25 Alternative, impacts on BFE and channel velocity are negligible. Bridge design will require scour analysis to determine appropriate measures to be taken to prevent erosion of the bridge foundation. For the Modified I-25 Alternative, improvements are proposed within the floodplain and floodway. Since these improvements are located in the Fountain Creek backwater, there is very little impact on BFE and channel velocity. Bridge design will require scour analysis to determine appropriate measures to be taken to prevent erosion of the bridge foundation, and fill placed within the floodplain/floodway will have to be protected from erosion. Selection of specific erosion and scour mitigation measures will be included in the design phase.

Further floodplain analysis will be required during design, both as a result of project design refinement and model revisions by FEMA. At the time of design, FEMA may require a CLOMR application. Regardless, a LOMR application will be required at completion of construction if any substantial improvements are located within either the Arkansas River or Fountain Creek floodplains.

APPENDIX A

# Fountain Creek Models

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**APPENDIX A**  
**FOUNTAIN CREEK MODELS**

\*NAVD 88  
DATUM

Fountain Creek  
Check Model  
Analysis Output

HEC-RAS Plan: Plan 01 River: Fountain Creek Reach: Reach 1

41000.00	4728.00	4737.08	4736.88	4740.24	0.008788	14.27	2874.02	422.02	0.98
64000.00	4728.00	4739.29	4739.29	4743.62	0.008851	18.71	3868.17	501.76	1.00
41000.00	4727.50	4735.62	4733.68	4736.67	0.003231	8.25	5015.92	807.80	0.58
64000.00	4727.50	4737.38	4735.21	4738.94	0.003462	10.06	6445.61	816.61	0.62
41000.00	4714.00	4723.35	4722.83	4725.06	0.007612	10.55	3944.81	838.54	0.85
64000.00	4714.00	4725.00	4724.31	4727.30	0.006909	12.23	5339.42	852.50	0.85
41000.00	4700.00	4713.47		4714.57	0.001914	8.42	4872.07	503.02	0.48
64000.00	4700.00	4716.76		4717.99	0.001819	9.17	9260.99	1838.55	0.48
41000.00	4694.00	4704.55	4703.11	4707.18	0.043118	13.03	3152.96	366.37	0.78
64000.00	4694.00	4705.83	4705.77	4710.68	0.067726	17.70	3629.15	379.64	0.99
41000.00	4686.00	4694.92		4695.66	0.002193	6.92	5973.39	936.60	0.48
64000.00	4686.00	4697.04		4698.06	0.002077	8.13	7971.89	948.91	0.49
41000.00	4674.00	4681.46	4681.09	4683.96	0.007705	12.79	3396.19	662.39	0.89
64000.00	4674.00	4683.36	4683.36	4686.74	0.007512	15.03	4869.39	894.90	0.92

\*Elevations converted to NAVD 29 Datum in TABLE 3

$$\text{NAVD 88} - 2.8' = \text{NAVD 29}$$

Geom Title=Fountain Creek Check Geo  
Program Version=3.12  
Viewing Rectangle= 0 , 1 , 1 , 0

\*NAVD '88 DATUM

River Reach=Fountain Creek ,Reach 1  
Reach XY= 2

.4515306 .8596939 .4642857 .2882653  
Rch Text X Y=0.4547194,0.7168367  
Reverse River Text= 0

Type RM Length L Ch R = 1 ,600 ,485,544,569.5

BEGIN DESCRIPTION:

HWY 50

END DESCRIPTION:

Node Last Edited Time=Feb/08/2005 15:22:22

#Sta/Elev= 23

741	4788	1041	4768	1560	4758	1594	4752	1705	4742
1823	4739	1846	4742	1898	4738	1917.5	4732	1991	4730
2107	4730	2141	4728	2283	4730	2396	4750	2469	4750
2516.5	4749	2589	4749	2684	4750	2839	4750	2926	4749
3437	4758	3764	4737.5	3856	4768				

#Mann= 3 , 0 , 0

741	.07	0	1898	.035	0	2396	.07	0
-----	-----	---	------	------	---	------	-----	---

Bank Sta=1898,2396

Exp/Cntr=0.4,0.2

Type RM Length L Ch R = 1 ,500 ,2317,2422,2406

BEGIN DESCRIPTION:

FIS Q

END DESCRIPTION:

Node Last Edited Time=Feb/08/2005 14:58:23

#Sta/Elev= 21

850	4778.5	1307.5	4762	1344	4758	1546	4758	1560	4756
1621	4754	1719	4754	1812	4752	1850.5	4732	1901	4730
1911	4728	2043	4728	2077	4727.5	2186	4728	2192	4730
2634	4730	2671	4742	3234	4742	3394	4744	3486	4742
3817	4742								

#Mann= 3 , 0 , 0

850	.07	0	1850.5	.035	0	2634	.07	0
-----	-----	---	--------	------	---	------	-----	---

Bank Sta=1850.5,2634

Exp/Cntr=0.4,0.2

Type RM Length L Ch R = 1 ,400 ,3058,3019,2962

BEGIN DESCRIPTION:

FIS P

END DESCRIPTION:

Node Last Edited Time=Feb/08/2005 14:58:32

#Sta/Elev= 28

804	4762	1344	4750	1472	4750	1779	4740	1891	4718
1905	4718	1977	4716	1994.5	4720	2266	4720	2299	4718
2313	4718	2324	4718	2356	4716	2384	4718.5	2457	4718
2565	4714	2574	4718	2617	4720	2691	4720	2718	4728
2859	4730	2930	4730	3119.5	4732	3366	4732	3476.4	4730
3544	4731	3621	4728	3648	4728				

#Mann= 3 , 0 , 0

804	.06	0	1891	.035	0	2691	.06	0
-----	-----	---	------	------	---	------	-----	---

Bank Sta=1891,2691

Exp/Cntr=0.4,0.2

Type RM Length L Ch R = 1 ,300 ,1390,1356,1311

BEGIN DESCRIPTION:

FIS M

END DESCRIPTION:

Node Last Edited Time=Feb/08/2005 14:58:44

#Sta/Elev= 22  
 593 4754 698 4752 915 4744 1149 4732 1256 4716  
 1285 4717 1341 4716 1470 4700 1508 4700 1577 4704  
 1639 4704 1656 4702 1809 4702 1867 4714 2676 4714  
 2814 4716 2917 4716 3160 4720 3286 4720 3347 4716  
 3435 4716 3560 4718  
 #Mann= 3 , 0 , 0  
 593 .07 0 1341 .035 0 1867 .075 0  
 Bank Sta=1341,1867  
 Exp/Cntr=0.4,0.2

Type RM Length L Ch R = 1 ,250 ,1790,1842,1915

BEGIN DESCRIPTION:

Hwy 50 South

END DESCRIPTION:

Node Last Edited Time=Feb/11/2005 10:26:06

#Sta/Elev= 24  
 618 4732 1203 4714 1316 4714 1350 4712 1434 4712  
 1462 4698 1501 4696 1510 4694 1600 4694 1690 4696  
 1773 4696 1794 4698 1833 4716 2135.5 4720 2207.5 4722.5  
 2368 4699 2428.5 4702 2442 4706 2704 4710 2757 4726  
 2773 4726 2819.5 4712 3021 4710 3171 4712  
 #Mann= 3 , 0 , 0  
 618 .07 0 1434 .1 0 1833 .07 0  
 #Block Obstruct= 1 ,-1  
 2325 2430 4706  
 Bank Sta=1434,1833  
 Exp/Cntr=0.4,0.2

Type RM Length L Ch R = 1 ,200 ,3032,3041,3052

BEGIN DESCRIPTION:

FIS J

END DESCRIPTION:

Node Last Edited Time=Feb/08/2005 14:59:02

#Sta/Elev= 23  
 655 4722.5 906 4708 1153 4706 1271 4702 1315 4702  
 1404 4702.5 1436 4690 1506.5 4688 1534 4688 1660 4690  
 1699 4690 1815 4686 1951 4686 1957.5 4688 2344 4690  
 2376.5 4700 2396 4700 2409 4698 2640 4694 2649 4692  
 2675 4692 2924 4700 3078 4701  
 #Mann= 3 , 0 , 0  
 655 .07 0 1436 .035 0 2344 .06 0  
 #Block Obstruct= 1 ,-1  
 2400 2900 4700  
 Bank Sta=1436,2344  
 Exp/Cntr=0.4,0.2

Type RM Length L Ch R = 1 ,100 , , ,

BEGIN DESCRIPTION:

8th Street

END DESCRIPTION:

Node Last Edited Time=Feb/08/2005 14:59:15

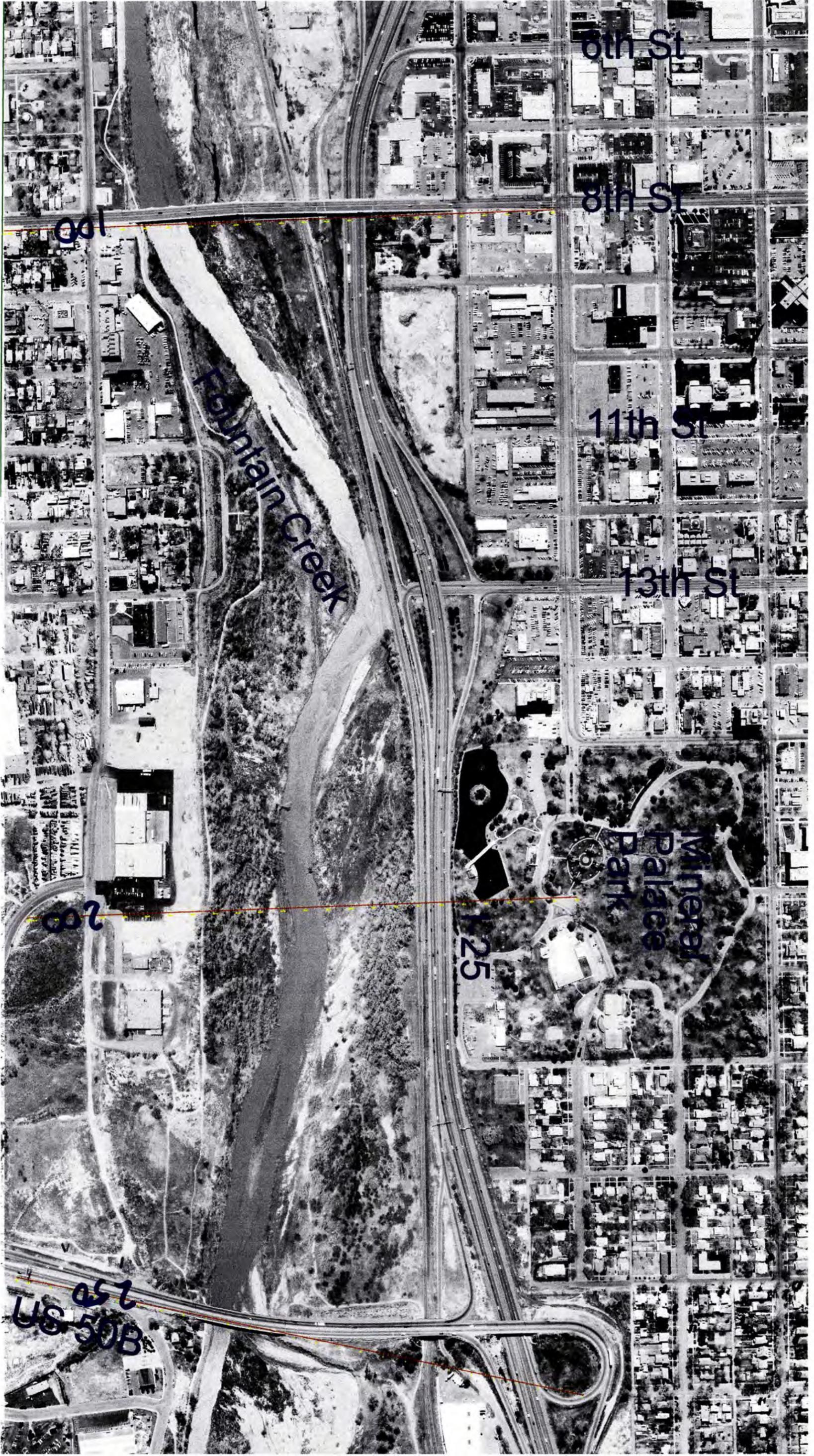
#Sta/Elev= 36  
 525 4684.5 951 4684 1079 4688 1102.5 4680 1155 4674  
 1344 4674 1402 4676 1425 4676 1481 4674.8 1533 4676  
 1598 4676 1657 4683 1692 4682 1744 4682 1819 4680  
 1859 4680 1889 4682 1921.5 4692 1929 4692 1969 4682  
 2006 4683 2150 4684 2168 4686 2184 4686 2188 4685  
 2243 4686 2269 4686 2295 4688 2341 4688 2391 4690  
 2426 4690 2433 4691.5 2511 4692 2671 4692 2803 4690  
 2949 4688  
 #Mann= 3 , 0 , 0  
 525 .07 0 1102.5 .035 0 1598 .07 0  
 Bank Sta=1102.5,1598

Exp/Cntr=0.4,0.2

Chan Stop Cuts=-1

Use User Specified Reach Order=0

User Specified Reach Order=Fountain Creek ,Reach 1



8th St

8th St

11th St

13th St

Fountain Creek

Mineral  
Palace  
Park

001

200

125

057  
250  
508

Fountain Creek  
Check Model  
Section Locations



Dillon

Fountain  
Creek

300

400

500

600

Hwy 47

HEC-RAS Plan: Fountain Cre River: Fountain Creek Reach: Reach1 Profile: PF 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach1	8600	PF 1	64000.00	4742.28	4751.21		4753.07	0.007127	10.95	5844.54	1091.84	0.83
Reach1	8550	PF 1	64000.00	4736.58	4745.96	4744.12	4746.94	0.003371	7.91	8094.17	2121.83	0.58
Reach1	8500	PF 1	64000.00	4732.88	4745.31	4740.07	4745.79	0.000873	5.54	11554.86	2094.86	0.32
Reach1	8450	PF 1	64000.00	4728.48	4743.94	4739.54	4744.87	0.001548	7.73	8274.99	1655.38	0.43
Reach1	8400	PF 1	64000.00	4727.18	4741.61	4738.73	4743.85	0.003464	12.00	5331.26	500.68	0.65
Reach1	8350	PF 1	64000.00	4727.18	4741.80	4738.73	4743.84	0.003470	12.01	5328.58	500.67	0.65
Reach1	8325											
Reach1	8300	PF 1	64000.00	4726.78	4738.31	4738.31	4742.41	0.008889	16.26	3936.14	475.27	1.00
Reach1	8250	PF 1	64000.00	4723.88	4735.48		4736.83	0.002906	9.34	6853.35	894.01	0.57
Reach1	8200	PF 1	64000.00	4718.38	4728.38	4727.90	4731.38	0.007795	13.89	4606.94	663.07	0.91
Reach1	8150	PF 1	64000.00	4711.98	4723.00		4724.62	0.004052	10.19	6283.02	860.93	0.66
Reach1	8100	PF 1	64000.00	4711.98	4721.39		4723.10	0.004086	10.49	6101.80	916.75	0.67
Reach1	8050	PF 1	64000.00	4709.98	4720.72	4718.12	4721.95	0.002805	8.91	7181.32	915.70	0.56
Reach1	8000	PF 1	64000.00	4707.48	4719.18		4720.10	0.002334	7.87	8989.51	1792.41	0.51
Reach1	7050	PF 1	64000.00	4703.28	4713.96	4713.68	4717.13	0.008442	14.29	4478.06	635.58	0.95
Reach1	7000	PF 1	64000.00	4699.98	4713.26		4714.37	0.001632	8.47	7594.35	788.79	0.45
Reach1	6950	PF 1	64000.00	4696.98	4710.49	4707.69	4713.01	0.003506	12.74	5023.72	781.95	0.66
Reach1	6900	PF 1	64000.00	4694.98	4707.64		4710.37	0.004283	13.28	4881.47	495.76	0.72
Reach1	6850	PF 1	64000.00	4692.98	4704.10	4703.77	4708.04	0.007402	16.10	4089.92	466.23	0.93
Reach1	6817	PF 1	64000.00	4690.60	4703.98	4700.82	4706.05	0.002711	11.55	5540.22	505.14	0.61
Reach1	6749.5											
Reach1	6749	PF 1	64000.00	4690.60	4700.82	4700.82	4704.87	0.007526	16.14	3965.95	492.10	1.00
Reach1	6700	PF 1	64000.00	4689.70	4700.46	4700.46	4704.38	0.006485	16.14	4295.34	892.11	1.00
Reach1	6600	PF 1	64000.00	4688.30	4698.95	4696.29	4699.82	0.002210	7.49	8542.99	1229.53	0.50
Reach1	6500	PF 1	64000.00	4687.30	4698.38	4696.15	4699.30	0.002836	7.71	8303.42	1283.33	0.53
Reach1	6400	PF 1	64000.00	4686.40	4697.95	4695.40	4698.86	0.001808	7.78	8995.80	1333.07	0.51
Reach1	6300	PF 1	64000.00	4685.40	4695.09	4694.99	4697.97	0.006809	14.91	5433.14	911.63	0.99
Reach1	6200	PF 1	64000.00	4684.40	4695.15	4693.02	4696.49	0.003350	9.32	6865.79	955.96	0.61
Reach1	6100	PF 1	64000.00	4683.40	4693.96		4695.68	0.004015	10.79	6479.95	906.15	0.70
Reach1	6000	PF 1	64000.00	4682.30	4692.68	4691.46	4694.67	0.004852	11.87	6271.60	884.44	0.78
Reach1	5900	PF 1	64000.00	4681.30	4692.52	4689.65	4693.65	0.002842	8.52	7508.74	924.48	0.53
Reach1	5800	PF 1	64000.00	4679.90	4691.84	4688.39	4692.92	0.001827	8.92	8474.54	1242.18	0.52
Reach1	5700	PF 1	64000.00	4677.90	4690.74	4686.28	4691.51	0.006480	7.30	9179.86	965.04	0.41
Reach1	5600	PF 1	64000.00	4676.80	4689.06	4685.41	4690.10	0.004009	8.80	8381.07	942.14	0.51
Reach1	5500	PF 1	64000.00	4675.10	4686.62	4684.71	4688.72	0.003566	13.33	7377.06	1063.93	0.76
Reach1	5400	PF 1	64000.00	4673.80	4686.10	4683.76	4687.60	0.002934	12.20	7040.12	852.36	0.72
Reach1	5300	PF 1	64000.00	4672.20	4685.27	4682.47	4686.82	0.002069	10.27	6925.50	761.15	0.58
Reach1	5200	PF 1	64000.00	4671.10	4683.82	4682.06	4686.03	0.003266	13.96	6080.41	690.40	0.74
Reach1	5100	PF 1	64000.00	4669.80	4680.84	4680.84	4684.29	0.005981	15.20	4591.52	695.00	0.95
Reach1	5000	PF 1	64000.00	4668.80	4679.92	4678.91	4682.36	0.003487	12.70	5417.14	770.00	0.77
Reach1	4900	PF 1	64000.00	4667.00	4679.46		4681.47	0.002512	11.62	6355.34	1024.84	0.64
Reach1	4875	PF 1	64000.00	4666.10	4679.48	4675.49	4681.38	0.001821	11.13	6159.88	749.88	0.56
Reach1	4850											
Reach1	4825	PF 1	64000.00	4666.10	4678.40	4675.49	4680.73	0.002480	12.29	5402.95	664.25	0.64

Geom Title=Fountian Creek Improvements  
Program Version=3.12  
Viewing Rectangle= 0 , 1 , 1 , 0

River Reach=Fountain Creek ,Reach1  
Reach XY= 2

.4176471 .8776471 3223529  
Rch Text X Y=0.4211765,0.7388235  
Reverse River Text= 0

Type RM Length L Ch R = 1 ,8600  
Node Last Edited Time=Feb/28/200  
#Sta/Elev= 26

0	4761.28	142	4757.48		4755.88	528	4751.08
723	4743.88	814	4743.4		4743.68	1072	4743.98
1128	4745.28	1241	4747.98	1316	4745.58	1422	4746.58
1471	4747.68	1616	4747.68	1621	4757.98	1727	4758.98
1902	4760.38	1962	4766.18	1967	4766.18	2033	4766.98
2075	4767.38					2042	4767.68

#Mann= 3 , 0 , 0  
0 .045 0 448 .035 0 1621 .045 0  
Bank Sta=448,1621  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8550 ,680,650,650  
Node Last Edited Time=Feb/28/2005 14:02:31  
#Sta/Elev= 34

0	4751.48	39	4742.88	57	4749.28	161	4749.18	179	4740.78
262	4739.78	280	4747.98	360	4738.08	536	4740.18	625	4739.68
632	4737.18	691	4736.58	740	4737.08	753	4739.18	774	4741.08
911	4739.48	1273	4739.08	1298	4740.98	1318	4745.08	1574	4739.08
1663	4744.68	1694	4742.98	1721	4752.28	1765	4741.08	1803	4748.38
2125	4745.58	2607	4745.88	2844	4747.28	2870	4752.78	2875	4752.78
2882	4751.18	2910	4748.98	2955	4751.18	3013	4754.71		

#Mann= 3 , 0 , 0  
0 .045 0 280 .035 0 1721 .045 0  
Levee=0,,,-1,2870,4752.78,,  
#XS Ineff= 2 , 0

0 280 4747.98 1721 0 4749.18  
Permanent Ineff=  
F F  
Bank Sta=280,1721  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8500 ,760,770,820  
Node Last Edited Time=Feb/28/2005 14:05:49  
#Sta/Elev= 33

0	4765.08	42	4747.68	184	4737.68	292	4739.58	319	4733.68
331	4732.88	411	4733.78	457	4732.88	491	4733.68	559	4735.08
576	4733.68	667	4734.78	743	4734.98	879	4732.88	893	4736.38
1003	4736.38	1245	4735.88	1295	4738.48	1329	4748.28	1375	4739.78
1402	4738.08	1426	4742.58	1497	4740.78	1810	4741.08	2092	4738.58
2170	4738.88	2270	4762.88	2340	4764.28	2625	4777.98	2670	4777.18
2710	4746.18	2780	4746.18	2820	4777.98				

#Mann= 3 , 0 , 0  
0 .045 0 42 .035 0 1329 .045 0  
#XS Ineff= 2 , 0

0 42 4747.68 1329 0 4748.28  
Permanent Ineff=  
F F  
Bank Sta=42,1329  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8450 ,450,400,450

Node Last Edited Time=Feb/28/2005 14:06:42

#Sta/Elev= 45

0	4762.38	4.62	4762.28	45.62	4743.48	450	4737	638.62	4733.98
643.12	4729.68	651.62	4729.08	687.62	4729.77	807.62	4733.18	814.22	4729.84
832.62	4728.48	846.62	4729.98	847.62	4731.28	1048.62	4732.78	1077.62	4736.48
1236.62	4737.48	1276.62	4743.28	1298.62	4743.48	1342	4734.18	1480	4733.68
1558	4734.18	1568	4735.18	1580	4736.18	1650	4736.18	1762	4735.18
1930	4734.18	2025	4734.18	2060	4735.18	2175	4735.18	2295	4735.18
2312	4735.18	2318	4734.18	2645	4734.18	2680	4735.18	2865	4736.18
2878	4737.18	2892	4741.18	2900	4741.18	2915	4740.18	2920	4741.18
2935	4739.18	2950	4740.18	3300	4740.78	3365	4755.68	3410	4757.18

#Mann= 3 , 0 , 0

0	.045	0	450	.035	0	1276.62	.045	0
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Levee=0,,, -1,1700,4757.18,,

#XS Ineff= 2 , 0

0	450	4757.18	1276.62	0	4745.18
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Permanent Ineff=

F F

Bank Sta=450,1276.62

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8400 ,1,1,1

Node Last Edited Time=Feb/28/2005 14:14:15

#Sta/Elev= 27

0	4753.08	1	4744.58	19.07	4741.88	31.07	4735.28	67.07	4731.68
70.07	4728.58	72.37	4728.28	111.07	4727.18	167.07	4728.29	174.07	4730.88
347.07	4730.38	455.07	4729.38	465.07	4732.9	475.07	4732.9	478	4731.9
498.07	4739.48	520.07	4740.48	521	4746.58	522	4748.88	710	4747.88
955	4747.18	1095	4747.18	1165	4748.48	1270	4747.88	1330	4748.48
1855	4764.28	2080	4768.18						

#Mann= 3 , 0 , 0

0	.045	0	1	.035	0	520.07	.045	0
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#XS Ineff= 2 , 0

0	1	4753.08	520.07	0	4747.18
---	---	---------	--------	---	---------

Permanent Ineff=

F F

Bank Sta=1,520.07

Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 1 ,8350 ,156,156,156

BEGIN DESCRIPTION:

Upstream cross-section of HWY 47 bridge

END DESCRIPTION:

Node Last Edited Time=Mar/02/2005 13:19:17

#Sta/Elev= 27

0	4753.08	1	4744.58	19.07	4741.88	31.07	4735.28	67.07	4731.68
70.07	4728.58	72.37	4728.28	111.07	4727.18	167.07	4728.29	174.07	4730.88
347.07	4730.38	455.07	4729.38	465.07	4732.9	475.07	4732.9	478	4731.9
498.07	4739.48	520.07	4740.48	521	4746.58	522	4748.88	710	4747.88
955	4747.18	1095	4747.18	1165	4748.48	1270	4747.88	1330	4748.48
1855	4764.28	2080	4768.18						

#Mann= 3 , 0 , 0

0	.045	0	1	.035	0	520.07	.045	0
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#XS Ineff= 2 , 0

0	1	4753.08	520.07	0	4747.18
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Permanent Ineff=

F F

Bank Sta=1,520.07

Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 3 ,8325 ,,,

BEGIN DESCRIPTION:

HWY 47

END DESCRIPTION:

Node Last Edited Time=Mar/02/2005 13:16:51

Bridge Culvert--1,0,-1,-1, 0

Deck Dist Width WeirC Skew NumUp NumDn MinLoCord MaxHiCord MaxSubmerge Is\_Ogee

20,15,2.7,0,	11, 11, , ,	0.95, 0,	3.2,3.2,,						
0	522	522	710	955	1095	1165	1270	1330	1855
2080									
4753.08	4749.58	4748.88	4747.88	4747.18	4747.18	4748.48	4747.88	4748.48	4764.28
4768.18									
4745.68	4745.68								

0	522	522	710	955	1095	1165	1270	1330	1855
2080									
4753.08	4749.58	4748.88	4747.88	4747.18	4747.18	4748.48	4747.88	4748.48	4764.28
4768.18									
4745.68	4745.68								

BR Coef=-1 , 0 , 0 ,0.9, 0 ,,,0.8,-1,1.33,0,  
WSPro=,,, 1 ,,,, 0 ,,,, 0 ,,,, -1 , -1 , -1 , 0 , 0 , 0 , 0 . 0  
BC Design=, , 0 , , 0 , , , , ,

Type RM Length L Ch R = 1 ,8300 ,620,620,620

BEGIN DESCRIPTION:

Downstream cross-section of HWY 50 bridge

END DESCRIPTION:

Node Last Edited Time=Mar/02/2005 13:19:27

#Sta/Elev= 32

0	4753.08	2	4746.08	15	4743.98	33	4733.68	45	4733.93
46	4733.48	50	4734.38	62	4734.18	65	4732.78	98	4729.98
102	4729.68	140	4726.78	185	4727.58	186	4728.18	232	4727.48
234	4730.18	460	4729.48	470	4732.78	480	4732.58	483	4731.58
507	4740.98	520	4741.68	521	4746.58	522	4748.88	710	4747.88
955	4747.18	1095	4747.18	1165	4748.48	1270	4747.88	1330	4748.48
1855	4764.28	2080	4768.18						

#Mann= 3 , 0 , 0

0	.045	0	2	.035	0	520	.045	0
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#XS Ineff= 2 , 0

0	2	520	0
---	---	-----	---

Permanent Ineff=

F F

Bank Sta=2,520

Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 1 ,8250 ,1260,1180,1070

Node Last Edited Time=Feb/28/2005 14:08:14

#Sta/Elev= 43

0	4750.68	31.1	4745.88	49.1	4727.88	331.1	4726.48	334.38	4724.39
364.1	4723.88	419.29	4724.39	424.1	4727.68	836.1	4727.18	883.1	4739.78
897.1	4740.28	956.44	4739.76	1021.87	4739.98	1076.5	4740.27	1182.6	4739.38
1241.17	4739.18	1306.61	4738.93	1364.62	4738.38	1423	4739.3	1450.5	4738.38
1568.8	4738.68	1615.32	4739.74	1620.25	4738.88	1620.25	4762.18	2000	4762.18
2100	4762.18	2200	4762.18	2310	4762.18	2310	4736.78	2356.3	4735.98
2391.39	4735.68	2405.23	4735.15	2422.11	4736.08	2450.95	4735.05	2450.95	4762.18
2690	4747.18	2904.14	4738.28	2917.6	4737.68	2935.25	4734.35	2977.87	4735.68
3014.76	4744.08	3047.13	4752.28	3058.64	4752.58				

#Mann= 3 , 0 , 0

0	.045	0	31.1	.035	0	883.1	.045	0
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#XS Ineff= 2 , 0

0	1620.25	0	4762.18
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Permanent Ineff=

F T

Bank Sta=31.1,883.1

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8200 ,1080,1160,1230

Node Last Edited Time=Feb/28/2005 14:08:33

#Sta/Elev= 49

0	4740.88	50.9	4738.78	170.9	4729.38	274.9	4718.88	709.9	4722.38
716.12	4719.48	746.9	4718.38	772.78	4719.31	775.9	4725.18	801.9	4721.98
833.9	4732.98	864.9	4734.48	898.21	4736.18	1005.2	4737.1	1017.38	4735.99
1107.82	4736.08	1158.92	4732.92	1204.23	4733.48	1246.6	4733.38	1289.02	4734
1457.54	4737.58	1496.46	4738.85	1500	4738.85	1500	4757.18	2180	4757.18
2180	4739.28	2244.28	4737.17	2339.42	4734.28	2364.53	4733.51	2404.83	4732.6
2433.24	4725.18	2456.65	4731.95	2471.53	4731.78	2502.01	4731.77	2511.05	4731.06
2538.52	4731.78	2604.76	4731.62	2729.45	4732.68	2786.42	4732.51	2816.01	4732.44
2841.38	4730.08	2850.14	4729.81	2864.6	4732.28	2887.79	4731.86	2902.22	4729.52
2951.44	4730.68	2999.1	4738.3	3017.85	4740.18	3056.59	4740.99		

#Mann= 3 , 0 , 0

0	.045	0	170.9	.035	0	833.9	.045	0
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#XS Ineff= 2 , 0

0	1500	0	4757.18
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Permanent Ineff=

F	T
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Bank Sta=170.9,833.9

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8150 ,320,370,475

Node Last Edited Time=Feb/28/2005 14:08:40

#Sta/Elev= 69

0	4738.98	198.7	4731.18	229.7	4715.58	279.7	4715.78	282.7	4712.18
303.7	4712.38	306.7	4714.88	788.7	4716.88	796.03	4713.71	810.7	4711.98
830.36	4713.98	832.7	4715.58	1032	4714.58	1080	4726.18	1091	4725.98
1091.1	4725.48	1132	4726.18	1175	4725.48	1175.1	4725.98	1185	4726.18
1185.1	4726.18	1202.45	4727	1233.33	4726.49	1292.57	4727.91	1413.45	4729.06
1503.23	4730.38	1547.67	4730.48	1581.79	4729.99	1646.07	4730.07	1692.5	4729.81
1694.74	4729.78	1745.2	4729.86	1773.72	4729.7	1825.03	4730.21	1986.74	4731.48
2042.11	4730.08	2072.82	4732.13	2093.18	4732.13	2155.18	4732.73	2261.26	4732.45
2328.21	4732.48	2342.7	4731.92	2366.72	4728.89	2378.63	4727.35	2399.86	4721.79
2421.15	4727.68	2445.46	4729.43	2457.77	4725.7	2469.66	4728.14	2567.52	4726.91
2608.56	4725.28	2627.09	4725.36	2642.26	4724.48	2651.38	4724.6	2666.7	4730.02
2695.54	4730.68	2703.64	4729.51	2722.1	4737.65	2737.37	4742.94	2787.55	4743.99
2833.57	4744.88	2837.45	4745.23	2864.36	4731.18	2874.34	4729.67	2886.49	4730.81
2908.25	4729.98	2933.6	4729.14	2951.86	4731.06	3027.29	4731.81		

#Mann= 3 , 0 , 0

0	.045	0	198.7	.035	0	1080	.045	0
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#XS Ineff= 2 , 0

0	2342.7	0	4731.92
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Permanent Ineff=

F	T
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Bank Sta=198.7,1080

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8100 ,280,300,300

Node Last Edited Time=Feb/28/2005 13:35:34

#Sta/Elev= 82

130	4731.18	220	4725.88	285	4717.18	370	4714.18	415.71	4713.91
430.77	4712.28	467.34	4712.18	473.93	4713.98	490.15	4712.68	528.28	4714.24
554.88	4714.58	587.49	4714.28	634.32	4712.88	689.48	4712.8	706.11	4712.47
726.2	4713.58	732.22	4711.98	770.27	4712.18	814.38	4712.68	855.1	4712.46
900.15	4713.08	989.08	4713.28	1006.29	4712.38	1014.76	4713.25	1020	4712.18
1072	4726.18	1083	4725.98	1083.1	4725.78	1121	4724.28	1155	4722.98
1155.1	4723.48	1161	4723.58	1210	4724.18	1250.8	4725.21	1283.71	4726.42
1301.93	4728.28	1315.26	4728.78	1432.06	4728.68	1452.84	4728.39	1542.22	4726.99
1652.22	4726.08	1665.46	4726.12	1709.98	4725.28	1798.64	4724.85	1912.56	4725.57
1990.48	4725.98	2132.98	4725.62	2155.31	4726.38	2189.34	4726.1	2274.32	4726.29
2359.48	4729.38	2387.04	4726.68	2398.65	4725.18	2415.05	4727.1	2424.54	4724.41
2468.79	4724.28	2495.46	4718.19	2509.33	4715.28	2545.65	4714.42	2553.02	4713.6
2563.91	4715.78	2578.76	4720.17	2589.25	4721.28	2632.11	4721.86	2647.86	4726.54
2684.72	4743.48	2726.22	4744.69	2786.06	4745.88	2793.51	4743.03	2812.96	4732.41

2829.7 4730.38 2856.48 4729.53 2882.3 4724.88 2917.74 4725.91 2956.52 4726.03  
 3008.02 4725.58 3080.68 4726.67 3101.35 4727.88 3104.63 4729.66 3144.79 4729.88  
 3196.7 4729.28 3234.39 4728.91  
 #Mann= 3 , 0 , 0  
 130 .045 0 220 .035 0 1072 .045 0  
 #XS Ineff= 2 , 0  
 0 220 1072 0  
 Permanent Ineff=  
 F F  
 Bank Sta=220,1072  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8050 ,659,687,725  
 Node Last Edited Time=Mar/16/2005 13:17:18  
 #Sta/Elev= 75  
 0 4731.48 19.2 4725.08 167.5 4720.48 197.2 4715.28 371.2 4713.78  
 570.2 4712.58 577.2 4710.98 765.2 4710.48 795.2 4709.98 816.2 4710.78  
 820.2 4711.88 1040 4712.58 1085 4722.88 1096 4722.68 1096.1 4722.18  
 1128 4722.88 1160 4722.18 1160.1 4722.28 1230 4724.18 1237.2 4724.18  
 1241.15 4724.98 1250 4725.28 1250 4737.18 1300 4737.18 1350 4737.18  
 1400 4737.18 1410 4737.18 1420 4737.18 1440 4737.18 1440 4728.88  
 1469.48 4727.78 1526.66 4726.68 1560.89 4726.78 1600 4727.18 1600 4737.18  
 1700 4737.18 1800 4737.18 2000 4737.18 2150 4737.18 2150 4724.18  
 2153.99 4723.98 2175.57 4723.5 2199.59 4722.48 2220.44 4715.44 2228.47 4714.89  
 2235.76 4712.58 2254.65 4713.47 2269.29 4718.28 2278.85 4718.48 2289.67 4722.02  
 2317.06 4722.58 2331.15 4724.63 2337.46 4722.58 2363.9 4722 2380.88 4720.16  
 2411.96 4723.38 2442.43 4723 2459.37 4721.38 2489.38 4725.21 2519.37 4725.52  
 2530.82 4724.68 2561.33 4734.53 2598.43 4735.48 2611.03 4733.16 2625.87 4735.76  
 2659.62 4736.18 2698.44 4733.02 2714.27 4724.98 2728.25 4722.47 2734.53 4723.21  
 2742.73 4722.38 2783.18 4723.81 2813.22 4724.38 2865.24 4723.58 2958.33 4725.83  
 #Mann= 3 , 0 , 0  
 0 .045 0 167.5 .035 0 1085 .045 0  
 Levee=0,,, -1,1265.36,4740,,  
 Bank Sta=167.5,1085  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8000 ,700,690,475  
 Node Last Edited Time=Mar/16/2005 13:10:37  
 #Sta/Elev= 47  
 0 4731.08 10.2 4731.38 275.2 4717.48 290.2 4713.98 453.2 4709.78  
 561.2 4710.18 866.2 4710.28 872.2 4708.38 909.2 4707.48 935.2 4708.08  
 1007.2 4708.48 1011.2 4711.88 1032.2 4714.18 1123.2 4715.98 1129.31 4715.34  
 1142.01 4713.18 1210.26 4713.51 1226.21 4714.48 1235 4714.58 1263.2 4716.7  
 1282.3 4719.7 1377.8 4720.2 1386.9 4717 1787.8 4717.2 2137.8 4719.2  
 2168 4720.74 2194.17 4719.88 2228 4721.18 2285.49 4721.4 2307.79 4721.88  
 2318 4718.65 2332.12 4722.68 2401.91 4723.68 2431.06 4722.62 2449.07 4723.28  
 2489.3 4722.43 2503.29 4719.58 2519.14 4721.08 2553.41 4720.47 2631.7 4722.28  
 2671.8 4722.65 2701.88 4721.38 2738.78 4722.38 2775.12 4722.35 2798.12 4724.28  
 2881.7 4724.69 2957.05 4724.98  
 #Mann= 3 , 0 , 0  
 0 .045 0 10.2 .035 0 1282.3 .045 0  
 #XS Ineff= 2 , 0  
 0 4731.38 0 4721.18  
 Permanent Ineff=  
 F F  
 Bank Sta=10.2,1282.3  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,7050 ,680,680,530  
 Node Last Edited Time=Feb/28/2005 13:21:39  
 #Sta/Elev= 48  
 0 4730.18 19 4729.38 56 4718.78 115 4715.28 126 4708.68  
 289 4707.18 296 4704.38 362 4703.28 384 4704.38 441 4706.18  
 735 4708.28 766 4718.18 871 4717.08 874.9 4716.96 906.59 4717.09

952.45 4716.38 1020.61 4717.03 1055.76 4717.95 1094.2 4717.72 1112.3 4718  
 1132.38 4715.48 1178.14 4715.23 1250.24 4716.06 1298.77 4716.02 1323 4716.38  
 1329 4717.38 1340 4717.18 1340.1 4716.68 1370 4717.68 1513 4719.98  
 1805 4717.98 1863 4718.28 1938 4720.08 1974 4720.08 2023 4720.18  
 2180 4720.68 2246 4721.48 2260 4721.48 2299.4 4722.28 2323.7 4722.28  
 2336.31 4720.18 2352.51 4722.49 2395.36 4721.9 2412.3 4717.88 2452.9 4719.78  
 2653.88 4720.88 2746.72 4721.94 2889.81 4723.85  
 #Mann= 3 , 0 , 0  
 0 .045 0 115 .035 0 766 .045 0  
 Bank Sta=115,766  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,7000 ,550,530,490  
 Node Last Edited Time=Feb/28/2005 13:21:31  
 #Sta/Elev= 54  
 0 4726.58 23.1 4725.78 42.1 4716.48 65.1 4713.28 92.8 4701.01  
 118.1 4699.98 188.1 4700.18 192.6 4700.89 198.1 4702.78 491.1 4701.78  
 727.1 4702.08 747.1 4712.08 796.1 4713.08 826.67 4712.88 905.56 4713.97  
 1007.04 4714.58 1095.18 4714.79 1145.99 4714.1 1185.22 4714.08 1214.9 4714  
 1248.97 4714.28 1251.93 4713.99 1302.44 4714.6 1331.93 4715.48 1331.93 4727.18  
 1419.24 4727.18 1419.24 4714.77 1479.03 4714.91 1555.98 4714.34 1568.52 4714.48  
 1583.48 4716.28 1595.55 4715.09 1641.21 4714.56 1680.49 4715.03 1731.16 4714.66  
 1758.97 4714.38 1767.59 4715.08 1785.19 4716.43 1815.33 4714.54 1857.81 4714.45  
 1926.85 4715.28 1982.87 4715.47 2060.42 4718.67 2137.05 4719.91 2147.55 4717.82  
 2168.59 4720.08 2211.83 4719.25 2230.12 4714.92 2239.55 4716.66 2288.5 4716.45  
 2402.73 4716.68 2470.9 4717.47 2668.13 4718.54 2709.87 4719.04  
 #Mann= 3 , 0 , 0  
 0 .045 0 65.1 .035 0 747.1 .045 0  
 Bank Sta=65.1,747.1  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6950 ,630,665,670  
 Node Last Edited Time=Mar/29/2005 16:51:58  
 #Sta/Elev= 46  
 04728.075 12.84727.775 37.84718.475 75.84713.475 142.44712.885  
 150.44712.675 161.84712.075 182.84699.875 300.84700.275 302.24698.345  
 305.84696.975 330.84696.975 367.84697.875 427.34698.355 579.84698.575  
 645.84699.875 660.84707.875 681.84713.475 756.84708.875 809.84709.875  
 840.84709.875 856.794709.255 877.664707.045 901.814706.435 933.684707.705  
 969.854709.175 1001.67 4709.8 1014.67 4711.7 1107.67 4711.6 1109.67 4711.2  
 1628.674712.675 1701.314712.595 1772.84713.265 1867.194714.075 1904.774715.575  
 2019.564717.075 2029.794715.575 2046.354717.165 2090.744716.575 2127.724715.275  
 2152.724714.175 2159.454713.025 2231.754713.575 2377.164714.275 2495.174715.175  
 2599.65 4716.18  
 #Mann= 3 , 0 , 0  
 0 .045 0 161.8 .035 0 645.8 .045 0  
 #XS Ineff= 2 , 0  
 0 600.75 0 4721.3  
 Permanent Ineff=  
 F F  
 Bank Sta=161.8,645.8  
 Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 1 ,6900 ,400,400,360  
 Node Last Edited Time=Apr/06/2005 15:36:51  
 #Sta/Elev= 15  
 04715.375 36.654711.845 48.624710.485 102.324711.875 146.324704.975  
 190.524710.375 198.724709.945 237.324694.975 338.324695.075 614.324697.775  
 673.92 4710.21 853.92 4726.6 1150.5 4726.6 1240 4726.6 2352.47 4726.6  
 #Mann= 3 , 0 , 0  
 0 .045 0 198.72 .035 0 673.92 .045 0  
 Bank Sta=198.72,673.92  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6850 ,300,250,250

BEGIN DESCRIPTION:

Downstream CLOMR

END DESCRIPTION:

Node Last Edited Time=Apr/06/2005 15:33:58

#Sta/Elev= 19

7704719.975	8404717.975	9704715.975	10704713.975	12704711.975
1287.064707.475	1304.374702.815	1314.034702.035	1326.24692.975	1403.644693.145
1413.054694.675	1487.984693.935	1497.314694.555	1624.74695.075	1677.584694.835
1701.014695.175	1715.7 4695.76	1910.7 4728.18	3236.05 4728.18	

#Mann= 3 , 0 , 0

770	.045	0	1287.06	.035	0	1715.7	.045	0
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#XS Ineff= 2 , 0

0	1287.06	4707.48	1889.98	0	4728.18
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Permanent Ineff=

F F

Bank Sta=1287.06,1715.7

Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 1 ,6817 ,161,161,161

BEGIN DESCRIPTION:

Upstream cross-section of HWY 50 bridge

END DESCRIPTION:

Node Last Edited Time=May/10/2005 14:05:11

#Sta/Elev= 16

891.8	4717.4	988	4711.5	1024	4694.6	1055	4693.3	1060	4691.5
1070	4690.6	1120	4690.7	1182	4691.5	1200	4691.3	1244	4692.5
1260	4691.9	1265	4693.1	1318	4693.4	1488	4693.4	1534	4716.4
1575	4716.4								

#Mann= 3 , -1 , 0

891.8	.08	0	1024	.03	0	1534	.05	0
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Bank Sta=988,1534

Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 3 ,6749.5 , , ,

BEGIN DESCRIPTION:

HWY 50

END DESCRIPTION:

Node Last Edited Time=May/10/2005 14:03:26

Bridge Culvert--1,0,-1,-1, 0

Deck	Dist	Width	WeirC	Skew	NumUp	NumDn	MinLoCord	MaxHiCord	MaxSubmerge	Is_Ogee
0.5	160	2.7	0	2	2	0.95	0	2	2	

988 1534

4717.5 4722.4

4711.5 4716.4

988 1534

4717.5 4722.4

4711.5 4716.4

Pier Skew, UpSta & Num, DnSta & Num= ,1090, 2 ,1060, 2 , 0 , 0 , 0 , ,

3 3

4690 4718.4

3 3

4690 4718.4

Pier Skew, UpSta & Num, DnSta & Num= ,1190, 2 ,1160, 2 , 0 , 0 , 0 , ,

3 3

4690 4718.4

3 3

4690 4718.4

Pier Skew, UpSta & Num, DnSta & Num= ,1290, 2 ,1260, 2 , 0 , 0 , 0 , ,

3 3

4690 4718.4

3 3

4690 4718.4

Pier Skew, UpSta & Num, DnSta & Num= ,1390, 2 ,1360, 2 , 0 , 0 , 0 , ,

3 3  
 4690 4718.4  
 3 3  
 4690 4718.4  
 Pier Skew, UpSta & Num, DnSta & Num= ,1490, 2 ,1460, 2 , 0 , 0 , 0 , ,  
 3 3  
 4690 4718.4  
 3 3  
 4690 4718.4  
 BR Coef=-1 , 0 , 0 ,1.05, 0 , , ,0.8,0,,1,  
 WSPro= , , , 1 , , , 0 , , , 0 , , , -1 , -1 , -1 , 0 , 0 , 0 , 0 , 0 , 0  
 BC Design= , , 0 , , 0 , , , , ,

Type RM Length L Ch R = 1 ,6749 ,45,49,40

BEGIN DESCRIPTION:

Downstream cross-section of HWY 50 bridge

END DESCRIPTION:

Node Last Edited Time=May/10/2005 13:54:37

#Sta/Elev= 16

891.8	4717.4	988	4711.5	1024	4694.6	1055	4693.3	1060	4691.5
1070	4690.6	1120	4690.7	1182	4691.5	1200	4691.3	1244	4692.5
1260	4691.9	1265	4693.1	1318	4693.4	1488	4693.4	1534	4716.4
1575	4716.4								

#Mann= 3 , -1 , 0

891.8	.08	0	1024	.03	0	1534	.05	0
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Bank Sta=988,1534

Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 1 ,6700 ,255,304,330

Node Last Edited Time=Mar/02/2005 12:45:35

#Sta/Elev= 65

1000	4717	1027.3	4716.1	1067.5	4714.6	1101.4	4711.9	1127.9	4709.4
1151.4	4710.1	1175.4	4709.1	1186.9	4710.8	1213.1	4710.5	1246.3	4709.8
1257.9	4708.6	1277.6	4705	1299.3	4703.2	1314.9	4702	1341.7	4694.4
1366.3	4692.9	1379.7	4695.7	1392.4	4697.3	1418.2	4696.6	1445.9	4695.5
1476.3	4693.1	1503.3	4692.1	1520.3	4691.9	1524.9	4690.4	1635.3	4690.4
1644	4689.7	1689.3	4689.9	1689.3	4690.4	1697.1	4691.6	1721	4691.5
1731.8	4690	1739.4	4692.6	1756.9	4693.1	1790.6	4693	1818.4	4692.3
1834.2	4693.2	1840.1	4693.6	1861.3	4695.9	1887.3	4697.4	1923.1	4695.4
1952.8	4695.6	1997.1	4695.6	2043.4	4695.1	2099.2	4696.2	2154.3	4698.1
2213.3	4700.5	2268.3	4704.6	2319.4	4708.3	2366.2	4710.5	2403.2	4713.8
2424.2	4713.3	2439.2	4708.4	2453.7	4702.3	2464.8	4700.8	2471.9	4702.1
2480.6	4702.1	2486.9	4701	2509.2	4702.2	2527.8	4706.1	2542.4	4706.3
2550.3	4707.5	2551.9	4711	2572.2	4716.1	2589.4	4720.5	2605.5	4724.9

#Mann= 3 , -1 , 0

1000	.08	0	1392.4	.03	0	1861.3	.05	0
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#XS Ineff= 2 , 0

0	1299.3	4697.3	1887.3	0	4720
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Permanent Ineff=

T T

Bank Sta=1392.4,1861.3

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6600 ,208,207,205

Node Last Edited Time=Mar/02/2005 12:45:07

#Sta/Elev= 75

1000	4714.5	1033.1	4713.7	1049.3	4713.3	1072.8	4710.9	1104.1	4710
1130.5	4709.9	1152	4709.8	1175.1	4701.9	1200.1	4698.8	1230.1	4696.9
1247.6	4695.6	1294.2	4695.6	1301.6	4695.6	1333.9	4695.4	1353.9	4696.3
1389.8	4695.5	1431.7	4694.3	1456.5	4693	1472.3	4692.1	1502.2	4692
1512.3	4689.4	1515.6	4688.8	1520.2	4689.5	1573	4689.2	1575.3	4688.7
1591.3	4689.3	1631.6	4689.3	1632.2	4688.8	1638.7	4688.3	1656	4688.4
1684	4688.9	1684.9	4689.4	1690.1	4690.6	1712.2	4690.6	1737.5	4690.2
1748.7	4689.3	1755	4691.8	1774.7	4691.5	1812.1	4690.9	1836.3	4690.9

1859.1	4693	1879.6	4692.3	1912.1	4692	1962.6	4692.1	1996.9	4692.9
2029.7	4692.3	2071.2	4691.7	2107.1	4691.7	2142.5	4690.5	2189.3	4690.2
2219.5	4691	2291.5	4688.5	2310.2	4691	2333.8	4691.5	2386.7	4692
2408.3	4693.5	2420.7	4696	2430.1	4699.6	2439.8	4701.8	2445	4701.8
2456	4700.1	2476.8	4700.3	2497.6	4708.5	2514.2	4709	2530.6	4707.5
2540.3	4708.5	2562.1	4713.1	2580.9	4717.5	2590.8	4718.4	2618.2	4719.3
2631	4714.3	2648.6	4706	2661.1	4702.2	2670.4	4703	2693.5	4703.7

#Mann= 3 , -1 , 0  
1000 .08 0 1353.9 .03 0 2107.1 .05 0

#XS Ineff= 2 , 0  
0 1152 4709.8 2618.2 0 4719.3

Permanent Ineff=  
F F

Bank Sta=1152,2618.2  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 6500 , 218,196,175  
Node Last Edited Time=Mar/02/2005 12:44:48  
#Sta/Elev= 84

1000	4714.9	1029.5	4714.2	1049	4713.2	1068.3	4712.1	1080.2	4710.8
1099.5	4709.4	1127.2	4709.4	1139.1	4709.4	1152.2	4710	1163	4708.5
1192.5	4701.3	1221.9	4696.2	1248.7	4694.7	1275.6	4694.9	1308.2	4694.9
1348.8	4694	1376.2	4693.8	1382.8	4693.8	1387	4693.9	1412.3	4693.7
1444.5	4694.6	1471.6	4694.9	1491.8	4694.9	1513.6	4693.5	1540	4693.6
1556.8	4692.4	1575.3	4691.9	1601.4	4692.4	1610.7	4690.1	1647.4	4689.9
1654.2	4690.2	1657.2	4689	1657.2	4688.5	1739	4689	1772	4688
1782	4687.3	1802	4688	1820	4689	1838.5	4689	1847.7	4691.9
1877.9	4691.4	1911.8	4691	1947.9	4690.9	1958.7	4692.2	1991.7	4692.4
2007.4	4692.6	2019.6	4692.2	2063.7	4692.2	2110.2	4692.1	2154.5	4692.4
2226.2	4692.5	2270.2	4691.5	2309.8	4691.4	2354.3	4689.1	2390	4688.5
2403.1	4688.6	2417.4	4691.6	2439.4	4691.3	2457	4691.2	2470.5	4693.1
2487.7	4696.6	2497.2	4700	2505.3	4701.1	2508.9	4701.9	2514.9	4701.9
2524.3	4700.5	2537.7	4700.1	2554.4	4701.5	2560.6	4702.9	2572.9	4709.4
2580.9	4709.5	2594.4	4710.1	2607.3	4710.1	2618.4	4711.6	2642.1	4711.6
2656.2	4706.1	2675.3	4700.9	2685.9	4703.2	2698.3	4702.9	2740.1	4703.5
2773.8	4703.5	2803.5	4702.6	2820.9	4701.4	2844.6	4701.8		

#Mann= 3 , -1 , 0  
1000 .08 0 1491.8 .03 0 2110.2 .05 0

#XS Ineff= 2 , 0  
0 1152.2 4710 2618.4 0 4711.6

Permanent Ineff=  
F F

Bank Sta=1152.2,2618.4  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 6400 , 220,219,218  
Node Last Edited Time=Mar/02/2005 12:44:30  
#Sta/Elev= 80

1000	4714.5	1029.9	4712.6	1046.2	4711.6	1069.2	4709.5	1083.9	4708.8
1114.5	4708	1129	4708.4	1135.5	4708.5	1141.8	4708	1156	4704.2
1174.2	4698.6	1200.4	4695.5	1279.1	4693	1325.8	4693.3	1364.3	4692.7
1396.4	4692.9	1427.2	4692.7	1462.8	4692.7	1517.8	4692.9	1563.3	4693.2
1591.9	4692.5	1631.2	4691.8	1664.7	4691.4	1693.5	4690.5	1708.1	4688.9
1708.1	4688	1790.2	4688	1823.1	4686.4	1839.7	4688.3	1864	4688.3
1876	4687.1	1897	4688.2	1919.4	4688.2	1922.7	4691.3	1952.1	4690.5
1997.1	4689.7	2021.8	4690.2	2029.4	4691.1	2058.4	4691	2095.1	4690.7
2141.7	4690.3	2208.5	4690.9	2247.1	4691.5	2278.7	4691.5	2363.9	4690.1
2401.4	4690.1	2435	4691.1	2468.1	4690.5	2483.2	4691.2	2496.1	4693.8
2514.6	4698.4	2519.6	4699.7	2540.7	4700.4	2549.6	4699.5	2558.4	4701.9
2563.8	4701.9	2575.6	4700.7	2600.9	4699.4	2615.7	4701.2	2630.6	4704.7
2643.4	4707.1	2666	4706.4	2692.4	4700.8	2700.6	4702.9	2740.1	4703
2756.4	4703.4	2786.6	4702.2	2801.8	4702.2	2832.3	4700.6	2857.1	4701.3
2872.1	4701.7	2914.7	4701.7	2969.8	4702	3026.5	4702.1	3077.3	4702.4
3128.4	4702.4	3179.9	4702.6	3228.2	4702.6	3251	4703.3	3287.3	4703.3

#Mann= 3 , -1 , 0  
 1000 .08 0 1427.2 .03 0 2435 .05 0  
 #XS Ineff= 2 , 0  
 0 1427.2 4692.7 2643.4 0 4707.1  
 Permanent Ineff=  
 F F  
 Bank Sta=1427.2,2643.4  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 6300 , 215,219,224  
 Node Last Edited Time=Mar/02/2005 12:44:02  
 #Sta/Elev= 79

1000	4714.3	1028.6	4712.5	1058.7	4711.2	1076.6	4709.6	1097.6	4709.2
1106.5	4709.4	1121	4708.3	1139.1	4707.4	1143.7	4707.4	1165.3	4707.5
1184.8	4707.8	1210.8	4708.4	1231.6	4708.6	1262.7	4708.3	1300.9	4707.9
1336.3	4707.8	1375	4707.3	1408.7	4706.9	1430.6	4705.8	1446.8	4704.9
1468.1	4700.4	1489	4699.6	1516.6	4699.1	1535.4	4699.3	1566.8	4698.2
1573.5	4697.3	1589.6	4691.2	1594.2	4691.2	1603.4	4691.2	1627.3	4691.3
1657	4691.4	1684.4	4692.2	1704.5	4692.7	1720.1	4692.2	1731.4	4691.1
1742.3	4686.8	1742.3	4685.6	1824.4	4686.3	1857.3	4685.4	1858.8	4687.7
1883.1	4687.5	1884.3	4686.4	1893.4	4686.6	1895.2	4686	1915.5	4686.5
1915.7	4686.9	1984.2	4687.1	1989	4689.3	1998.4	4689.2	2023.9	4688.7
2050.8	4688.2	2075.5	4688.7	2096.9	4689.8	2128.2	4690.1	2143.2	4690.1
2184.4	4690.8	2232.4	4689.6	2255	4690.1	2291.4	4689.9	2333.6	4690.2
2391.4	4688.8	2453.8	4688.1	2465.4	4689.1	2485.8	4694	2492.9	4695.5
2514.8	4698.2	2532.5	4698.5	2550.9	4700.2	2562.5	4699.3	2571.1	4700.7
2576.5	4700.7	2592.6	4699.2	2602.4	4699.7	2620.7	4701.5	2630.5	4701.5
2650.6	4701.9	2669	4701.7	2709.4	4701.7	2718.3	4701.7		

#Mann= 3 , -1 , 0  
 1000 .08 0 1704.5 .03 0 2184.4 .05 0  
 Bank Sta=1704.5,2184.4  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 6200 , 218,212,208  
 Node Last Edited Time=Mar/02/2005 12:43:35  
 #Sta/Elev= 83

1000	4719.7	1026.5	4717.7	1063.1	4714.2	1098.7	4712.1	1114.8	4709.2
1137.9	4708.2	1156.6	4706.9	1180.1	4706	1184.6	4707	1189.8	4707
1199.2	4706.7	1233.4	4705.8	1244.8	4705.8	1266.3	4707.8	1282.7	4712.7
1303.3	4716.5	1461.4	4708.6	1493.3	4707.1	1516.6	4706.9	1541.3	4705.6
1594.8	4704.8	1601.9	4704.2	1618.2	4693.3	1631.4	4690.4	1640.3	4690.4
1652.7	4688.6	1666.9	4687.5	1694.6	4688.1	1722.3	4688.4	1744.9	4687.6
1789.2	4687.4	1796.9	4686.1	1796.9	4684.9	1805	4684.6	1880	4685.6
1913	4684.4	1923.7	4686.9	1960.9	4686.3	1972.6	4685.5	2000	4684.8
2020	4685.5	2051	4685.5	2056.8	4687.5	2088.9	4687.5	2134.9	4687.7
2178.5	4688.1	2206.2	4688.9	2232.2	4689.5	2254.6	4689.7	2280.8	4690.3
2317.9	4689.7	2372.6	4688.6	2439	4688.3	2500.9	4687.6	2514.9	4689
2538.1	4692.7	2557.9	4696.8	2569.1	4698.7	2593	4691.8	2601.9	4687.9
2603.2	4697.3	2605.7	4700.8	2611.8	4700.8	2623.4	4699.3	2632	4698.7
2634.6	4697.4	2642.6	4697.4	2652.6	4700.5	2659	4700.8	2700.4	4700.6
2714.4	4700.4	2752	4699.3	2766.8	4698.7	2788	4698.2	2799.1	4697.9
2815.7	4698.7	2854.9	4698.5	2908.8	4698.9	2971.9	4699.6	3035.9	4699.5
3087.2	4700	3139.2	4700.1	3207.1	4700.1				

#Mann= 3 , -1 , 0  
 1000 .08 0 1744.9 .03 0 2280.8 .05 0  
 #XS Ineff= 2 , 0  
 0 1303.3 4716.5 2569.1 0 4698.7  
 Permanent Ineff=  
 F F  
 Bank Sta=1303.3,2569.1  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 6100 , 223,222,214  
 Node Last Edited Time=Mar/02/2005 12:42:36

#Sta/Elev= 80

1000	4722.3	1040.5	4720.8	1079.4	4717.8	1118.6	4714.9	1144.5	4712.3
1171	4709.9	1200.3	4705.7	1238.9	4705.8	1277.8	4705.4	1282.3	4705.4
1304.2	4705.6	1317.3	4705	1337.3	4705.4	1359.2	4705.3	1376.2	4705.5
1393.4	4705.8	1425.6	4705.2	1470.7	4705.1	1503.6	4704.5	1544.5	4704.6
1587.2	4704.1	1629.5	4704	1663.8	4703.3	1684.6	4703.8	1697.1	4701.8
1712.2	4694.1	1723.7	4687.5	1731.6	4687.5	1748.3	4687.6	1769.5	4687.9
1806.5	4687.1	1828.4	4686.7	1849.4	4686.9	1873.8	4686.3	1891.9	4687.5
1902.3	4685.7	1908.2	4685.3	1908.2	4683.6	1918	4683.4	1951	4684.1
2020.3	4685.3	2026.8	4685.8	2034.6	4686	2038.4	4685	2070	4683.8
2090	4685	2142.3	4685	2145.3	4686.1	2155.3	4686.9	2213.5	4687.2
2267.5	4686.8	2302.2	4688.1	2345.6	4688.5	2388	4688.9	2436.6	4689
2460.3	4686.7	2523.8	4686	2561.4	4687.4	2596	4689.1	2611.3	4691
2622.4	4695.5	2643.3	4697.8	2664.2	4697.7	2680.2	4698.9	2691.7	4698
2700	4700.1	2705.3	4700.1	2719.1	4698.5	2735.1	4697.4	2742.9	4699.1
2751	4699.6	2793.3	4698.7	2835.9	4698	2852.3	4696.9	2860.2	4698.5
2883.8	4699.3	2885.8	4699.9	2910.9	4700.3	2945.4	4701	2961.3	4700.9

#Mann= 3 , -1 , 0

1000	.08	0	1849.4	.03	0	2388	.05	0
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Bank Sta=1849.4,2700

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 6000 , 209,209,209

Node Last Edited Time=Mar/02/2005 12:42:17

#Sta/Elev= 71

1000	4708.5	1030.5	4705.6	1044.6	4705.3	1046.5	4704.5	1087.8	4704.1
1113.2	4704.2	1118.3	4704.2	1125.8	4704.2	1137.4	4703.5	1166.7	4703.8
1194.4	4704.4	1207.9	4703.8	1235.2	4703.4	1283.2	4703.6	1331.5	4703.7
1346.3	4704.4	1385.5	4704.1	1420.9	4703.8	1462	4703.3	1506.3	4702.9
1529.2	4702.8	1539.5	4699.2	1561.8	4686.1	1567.9	4686.1	1594.2	4685.4
1637.4	4685.1	1683.9	4686	1727.8	4685.7	1761.9	4686.1	1783.2	4684.4
1804	4685.2	1817.2	4684.9	1819.3	4684.3	1819.3	4682.4	1828.3	4682.3
1861	4683	1898	4683.7	1979	4683.7	1999	4683	2013	4683.6
2024.4	4684.2	2041.4	4686	2054.2	4686.8	2079.8	4686.2	2134.1	4686.3
2177.6	4686.4	2214.1	4687.4	2251	4687.7	2280.6	4687.1	2320.3	4685.8
2358.5	4686.1	2409.6	4686.5	2423.8	4688.4	2441.4	4695.1	2456.4	4695.7
2485.8	4694.1	2509	4695	2521.5	4696.9	2526.7	4697.6	2532.5	4699.4
2538.9	4699.4	2546.4	4698.5	2568.7	4697.2	2581.8	4697.6	2626.4	4697
2668.6	4695.9	2682.3	4695.2	2697.4	4698	2732.9	4699.2	2795.2	4699.5
2838.6	4699.7								

#Mann= 3 , -1 , 0

1000	.08	0	1761.9	.03	0	2251	.05	0
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#XS Ineff= 2 , 0

0	1761.9	4686.1	2532.5	0	4699.4
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Permanent Ineff=

F F

Bank Sta=1761.9,2532.5

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 5900 , 290,321,360

Node Last Edited Time=Mar/02/2005 12:41:51

#Sta/Elev= 87

1000	4709	1005.1	4708.8	1015.8	4703.3	1023.3	4703.2	1025	4702.7
1066.4	4702.6	1069.7	4703.1	1077.7	4702.2	1091.7	4702.1	1096.8	4702.1
1100.1	4701.5	1149.2	4700	1370.8	4704.2	1386.5	4703.9	1416	4702.9
1441.8	4702.7	1453.4	4704.7	1466.6	4705.8	1487.9	4705.2	1500.5	4702.9
1528.7	4701.9	1538.2	4702.7	1556.4	4693.2	1576.6	4685.1	1585.5	4685.1
1603.2	4685.6	1641	4683.9	1664.1	4682.4	1686.1	4683	1714.3	4683.7
1756.6	4684.2	1798.7	4684	1831.8	4684	1848.8	4682.8	1848.8	4682.1
1857.8	4682	1890.4	4682.8	1915.6	4682.7	1921.3	4682.1	1927.3	4682.7
1935.6	4682.1	1967.8	4682.5	2008	4682.6	2028.8	4681.3	2050.6	4682.2
2068	4682.2	2079.3	4682.2	2089.8	4685.3	2109	4685.2	2145.7	4684.5
2174.8	4685.3	2227.4	4684.4	2270.7	4685.3	2317.8	4685	2364.8	4685.8
2407.1	4686.4	2451.8	4687.5	2481.1	4692.2	2499.2	4696.2	2508.4	4697.8

2514.2	4697.8	2521.3	4696	2532.7	4696	2544.6	4694.8	2602.4	4695.5
2644.5	4694	2659.2	4692.9	2675.7	4693.7	2687.8	4694.3	2732.8	4694.8
2772.9	4695.8	2829.2	4696.4	2881.4	4697	2943.9	4697.7	2997	4698.4
3018.2	4698.4	3021.3	4698.2	3055	4698.2	3057.1	4698.7	3073	4700.4
3105.2	4701.4	3111.2	4697.1	3156.7	4695.7	3173.2	4692.8	3178.5	4693.6
3179.2	4700.8	3193.6	4701.5						

#Mann= 3 , -1 , 0  
1000 .08 0 1831.8 .03 0 2364.8 .05 0  
#XS Ineff= 2 , 0  
0 1466.6 4705.8 2508.4 0 4697.8  
Permanent Ineff=  
F F  
Bank Sta=1466.6,2508.4  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5800 ,390,435,450  
Node Last Edited Time=Mar/03/2005 08:52:59  
#Sta/Elev= 76

1000	4706.1	1016.6	4703.7	1036.4	4701.7	1075.5	4701.6	1078.7	4702
1093	4701	1099	4701	1107.7	4700	1150.2	4698.9	1297	4704.8
1323.2	4702.7	1354.1	4701.3	1365.2	4700.5	1396.7	4701	1421.4	4701.4
1458.7	4700.4	1468.8	4701.6	1482.6	4700.6	1494.9	4701.3	1517.2	4700.8
1536.6	4691.6	1551.1	4684.9	1558.2	4684.9	1582.9	4683.8	1632.7	4681.5
1678	4682.6	1726	4683.3	1778.3	4682.9	1830.2	4683.4	1876.9	4683.4
1909.4	4683.4	1928.3	4683.4	1932	4681.4	1932	4680	1941	4679.9
1986.7	4680.5	2041.8	4681	2148	4681.4	2153.5	4682.6	2182.1	4682.8
2201.3	4682	2213.7	4681	2225.6	4681.8	2235.2	4682.7	2252.5	4683.3
2286	4682.8	2314.8	4683.3	2348.8	4683.9	2394	4683.8	2434.1	4683.8
2455.5	4685.2	2473.1	4694.3	2479.1	4694.2	2485.8	4695	2491.4	4695
2500.4	4693.4	2517.3	4693.3	2522.3	4692.3	2534	4692.5	2579.9	4693
2620.7	4692	2643	4691.5	2648.9	4690.7	2658.2	4690.7	2659.5	4689.1
2784.9	4689.1	2786.3	4690.9	2834.6	4691.1	2879.7	4691.4	2932.7	4691.7
2976.6	4693	3020.2	4693	3052.5	4693.8	3067.7	4694.4	3075.6	4695.2
3091.6	4696.3								

#Mann= 3 , -1 , 0  
1000 .08 0 1778.3 .03 0 2348.8 .05 0  
#XS Ineff= 2 , 0  
0 1830.2 4683.4 2485.8 0 4695  
Permanent Ineff=  
F F  
Bank Sta=1830.2,2485.8  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5700 ,270,276,270  
Node Last Edited Time=Mar/07/2005 11:24:38  
#Sta/Elev= 74

1000	4716.8	1052.4	4716.4	1067.6	4714.3	1234.7	4710.7	1342.4	4709.9
1441.4	4706.5	1508.5	4705.9	1523	4701.9	1529.7	4701.9	1538.1	4700.1
1562	4699.8	1585.3	4699.2	1587.7	4699.3	1593.2	4699.9	1613.4	4698.1
1619.7	4698.1	1632.4	4697	1646.6	4697.6	1664.3	4695.8	1696.2	4695.2
1715.1	4695.2	1728.7	4700.3	1746.8	4695.8	1795.4	4694.3	1816.9	4697.3
1846.6	4696.5	1882.8	4696.2	1898.5	4698.1	1918.5	4698.7	1941.9	4697.8
1967.1	4697.1	1990.7	4682.2	1997.3	4682.2	2029.2	4680.7	2087.2	4680.2
2158.2	4681.4	2222.6	4680.8	2277.4	4682.6	2321.4	4683.1	2365.8	4683.7
2406	4682.4	2408.8	4682.1	2501.2	4681.5	2525.8	4680.4	2530	4679.1
2530	4677.9	2575.7	4678.6	2630.8	4678.5	2736	4679.1	2744	4680.6
2762.1	4680.5	2765.7	4679.6	2797.8	4679.6	2823	4678.9	2839.6	4680
2876.3	4682.6	2911.4	4686.9	2920.4	4690.3	2924.7	4689.9	2932.7	4691.1
2937	4691.1	2941.9	4691.1	2954.7	4691	2967.2	4690	2979.1	4693.4
2984.5	4694.3	2999.6	4694.6	3009	4693.7	3016.8	4695.6	3025.4	4695.9
3039.5	4692.5	3042.27	4700.72	3220.2	4702	3222.3	4691.28		

#Mann= 2 , -1 , 0  
1000 .08 0 2839.6 .05 0  
Levee=-1,1000,4720,-1,3212.8,4710,,

#XS Ineff= 2 , 0  
 0 2365.8 4683.7 3039.5 0 4696.7  
 Permanent Ineff=  
 F F  
 Bank Sta=2365.8,3039.5  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5600 ,340,335,335  
 Node Last Edited Time=Mar/03/2005 08:47:39  
 #Sta/Elev= 76

1000	4712.3	1025.7	4710.8	1061.2	4710.2	1121.2	4708.9	1156	4707.7
1174.2	4705.5	1208.2	4706.1	1243.4	4705.8	1264.7	4703.2	1280	4696.5
1302.5	4697.1	1326	4696.6	1329	4696.8	1366.2	4696.1	1400.4	4694.8
1447.3	4695.5	1502.7	4695	1534	4693.8	1579.8	4692.7	1620.8	4692.6
1656.7	4693	1687	4693.6	1694.8	4690.7	1716.3	4680.6	1728.6	4680.6
1785.1	4679.7	1826.3	4679.1	1870.9	4679.4	1915.5	4680.3	1951	4680.5
2005.6	4681.7	2053.4	4681.3	2100.8	4681.1	2161.9	4681	2182.3	4681.1
2212.5	4680.2	2252.9	4679.9	2301.3	4679.9	2336.3	4680.2	2344.7	4678.5
2344.7	4676.9	2368.4	4677.8	2390.4	4677.7	2397.1	4677.4	2445.5	4677.6
2462.4	4677.2	2471.3	4677.6	2552.5	4677.7	2574	4676.8	2591.9	4677.1
2603.2	4683.7	2615.8	4687.4	2620.9	4687.5	2626.4	4689	2632	4689
2641.3	4688	2653.2	4688	2663.5	4686.8	2679.2	4690.9	2705	4691.4
2714.9	4690.7	2732.6	4694.5	2752.4	4702.7	2764.7	4703.4	2788	4705.3
2799.8	4705.9	2824.1	4706.7	2837.5	4706.7	2848.6	4704.7	2876	4696.8
2899.1	4693.1	2921.3	4693.9	2946.5	4693.4	2966.6	4691.6	3007.2	4691.1
3030.1	4690.6								

#Mann= 3 , -1 , 0  
 1000 .08 0 2182.3 .03 0 2603.2 .05 0

Levee=-1,1730,4700,-1,3030.1,4700,,

#XS Ineff= 2 , 0  
 0 2005.6 4681.7 2626.4 0 4689  
 Permanent Ineff=  
 F F  
 Bank Sta=2005.6,2626.4  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5500 ,240,329,340  
 Node Last Edited Time=Mar/03/2005 08:47:25  
 #Sta/Elev= 76

1000	4737.8	1021.8	4736.8	1047.1	4730.9	1062.5	4734.2	1080.6	4731.8
1096.4	4726	1136.9	4725.5	1161.8	4726.5	1178.2	4717.4	1199.6	4708.3
1233.9	4707.4	1283.8	4705.7	1335.9	4703.7	1390.4	4701.9	1452.3	4699.7
1521.4	4697.1	1574.1	4695.1	1612.9	4693.4	1639.9	4693.7	1662.8	4693
1695.9	4692.4	1747.8	4690.9	1802.8	4690.1	1860.1	4689.9	1910.9	4689.3
1969.8	4688.5	2015.7	4687.9	2030.3	4687.9	2044.8	4681.7	2061.6	4678.4
2071.6	4678.4	2115.7	4677.5	2188.7	4677.4	2259.3	4678.3	2314.9	4678.3
2372.1	4678.2	2412.5	4678.7	2462.2	4678.4	2509.9	4677.7	2557.9	4678.1
2577.3	4678	2590.9	4678.3	2607.1	4677.2	2647.2	4677.8	2676.4	4677.8
2688.7	4676.9	2706.5	4677.1	2713.5	4675.7	2713.5	4675.1	2750.3	4675.2
2772.3	4675.2	2850.3	4675.7	2861	4680.3	2874.5	4684.8	2883.7	4685.2
2888.9	4686.7	2895	4686.7	2906.4	4684.9	2914.4	4686.1	2920.8	4685.8
2925.4	4684.4	2941	4686	2969	4685.8	3011.3	4685.8	3042.5	4686
3138.1	4686.5	3193.2	4687	3251.2	4687.1	3310.4	4687.6	3380.4	4687.3
3443	4687.6	3505.6	4687.9	3572.1	4688.2	3631.1	4688.6	3681	4689.8
3697.2	4689.9								

#Mann= 3 , -1 , 0  
 1000 .08 0 2509.9 .03 0 2888.9 .05 0

Levee=-1,2080,4720,-1,3697.2,4720,,

Bank Sta=2509.9,2874.5  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5400 ,280,330,330  
 Node Last Edited Time=Mar/03/2005 08:47:07  
 #Sta/Elev= 82

1000	4720.5	1019.5	4720.1	1053.5	4717.7	1106.3	4716.2	1166.4	4714.6
1214.3	4713	1266.4	4711.8	1326.4	4710.6	1375.1	4709.1	1407.9	4707.8
1450.4	4707	1474.9	4705.8	1517.3	4704.4	1567	4702.7	1607.9	4700.9
1645.8	4699.4	1684.3	4697.8	1742.5	4696.5	1784.7	4693.9	1838	4691.6
1862.1	4692.5	1885	4691.6	1905.2	4691.6	1952.7	4690.6	1995.4	4690.3
2035.5	4690.3	2039.2	4689.7	2088.5	4689	2128.2	4689.3	2187.1	4688.3
2234.6	4688.3	2270	4686.8	2290.6	4685.2	2306.1	4677.8	2311.7	4678.3
2338.2	4678.6	2434.9	4678.4	2561.7	4676.3	2611.7	4676	2652.8	4676.9
2703.1	4677.4	2736.6	4677.6	2776.2	4676.8	2803.6	4677.2	2835.9	4676.4
2851.9	4677.1	2866.1	4677.5	2886.7	4674.8	2923.5	4674.5	2935.7	4675.8
2936.7	4674.2	2969	4673.8	3015.8	4674.8	3035.2	4678	3046.5	4681.8
3052.3	4683.3	3058.1	4684.7	3063.4	4684.7	3069.9	4682.8	3085.4	4683.1
3099.5	4680.8	3105.1	4680.8	3108.5	4691.8	3134.7	4691.3	3149.6	4691.2
3168.2	4695.3	3186.6	4702.4	3201.3	4703	3223.5	4703.5	3234.8	4704.1
3260.7	4704.7	3272.5	4704.6	3293.4	4698.5	3314.6	4691.9	3333.6	4687.6
3350.7	4689.2	3376.3	4689.2	3397.8	4687.7	3421.7	4685.2	3441.2	4685.8
3461.3	4686	3468.7	4685.3						

#Mann= 3 , -1 , 0  
 1000 .08 0 2611.7 .03 0 3035.2 .05 0

Levee=-1,2310,4720,-1,3468.7,4700,,

#XS Ineff= 2 , 0  
 0 2866.1 4677.5 3260.7 0 4704.7

Permanent Ineff=  
 F F

Bank Sta=2866.1,3260.7

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5300 ,295,280,270  
 Node Last Edited Time=Mar/03/2005 08:46:53

#Sta/Elev= 93									
1000	4718.9	1051.5	4717.5	1115	4715.7	1177.6	4714.1	1244.1	4711.9
1306.4	4710.3	1371.5	4707.6	1428.9	4706.7	1460.7	4705.8	1508.4	4705.5
1557.3	4704.9	1599.7	4703.3	1637.1	4701.8	1677.8	4699.4	1735	4695.4
1784.7	4692.7	1841.3	4690.2	1865.1	4690.6	1888	4690.1	1943.6	4689.5
1998	4688.6	2056.1	4688	2111.6	4687.6	2137.9	4687.6	2161.2	4688.2
2205.8	4688.4	2253.9	4687.9	2291.9	4688.5	2324.4	4678.3	2338.1	4678.3
2361.4	4676.8	2409	4678.5	2417	4675.5	2521.6	4675.5	2594.1	4675.7
2641.5	4675.7	2662.5	4674.4	2671	4675.2	2702.8	4676.1	2734.2	4676.9
2758.8	4672.7	2795.6	4672.5	2807.8	4674.9	2808.8	4672.6	2841.1	4672.2
2854.8	4672.9	2902.2	4672.4	2912	4672.7	2923.2	4678.1	2933.2	4679.3
2962.9	4679.2	2977.7	4679.6	3005.5	4681.5	3025.3	4678.1	3036.9	4680
3043.8	4682	3050.7	4682	3062	4680.2	3070.6	4680.2	3078.4	4680
3091.6	4677.9	3094.3	4695.2	3142.2	4693.9	3180.1	4692.9	3206	4692.4
3219.8	4691.2	3237.1	4688.4	3264.1	4688.6	3285.6	4683.7	3299.4	4680.9
3311	4682	3328.5	4681.3	3370.2	4681.9	3408.8	4681.2	3444.2	4681.7
3476.9	4681.7	3512.4	4680.4	3525	4680.5	3528.8	4679.1	3548.7	4679.7
3573.2	4680.6	3603.9	4681.7	3636.9	4682.7	3680.9	4683.7	3711.2	4684.7
3753.9	4684.7	3798.7	4685.2	3834.6	4686	3879.5	4685.9	3925.3	4686.2
3964.1	4685.9	3994.7	4686.9	4002.1	4686.8				

#Mann= 3 , -1 , 0  
 1000 .08 0 2409 .03 0 2923.2 .05 0

Levee=-1,2331.6,4720,-1,3107.7,4720,,

Bank Sta=2409,3005.5

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5200 ,380,375,350  
 Node Last Edited Time=Mar/03/2005 08:46:44

#Sta/Elev= 83									
1000	4719.3	1022.3	4720	1027.1	4720.6	1051.2	4719	1098.2	4717.6
1161	4716.3	1221.8	4715.3	1283.4	4714.7	1327.8	4713.4	1367.8	4711.8
1379.6	4710.7	1404.6	4706.6	1411.6	4705.5	1434.8	4705.6	1460.9	4705.2
1494.7	4702.7	1540.7	4698.6	1600.5	4693.1	1660.5	4689	1722.8	4687.7
1777.3	4687.3	1841	4686.5	1865	4687.2	1888.4	4686.4	1912.9	4686.5
1972.5	4686.3	2027.6	4686.6	2064.6	4686.4	2078.1	4686.2	2134.1	4684.5

2140.1	4685.3	2168.6	4685.6	2195.1	4692.4	2203.9	4688.4	2231.1	4685.2
2253.9	4684.8	2282	4678.5	2301.9	4678.6	2312.4	4675.2	2327.5	4673.9
2377.3	4674.3	2432.4	4674.5	2487.3	4673.8	2535.1	4674.1	2575.8	4674.6
2592.9	4674.3	2605.7	4671.5	2642.5	4671.3	2654.7	4672.7	2658.1	4671.3
2690.4	4671.1	2729.8	4671.5	2738.1	4674.5	2802.3	4674.5	2810.9	4677.9
2850.6	4678.6	2892	4679.3	2934.9	4678	2954	4679	2964.4	4678.6
2967.7	4680	2978.7	4680	2990.4	4678.6	2999.7	4678.4	3011.2	4677.2
3028.6	4682.4	3085.4	4683.4	3092.8	4681.4	3134.2	4679.2	3153.9	4677.9
3180.7	4677.9	3215.2	4678.9	3260.8	4679.3	3312	4679.2	3356.3	4679.1
3406	4678.9	3455.9	4679.4	3489.7	4679.9	3503.1	4681.3	3513.5	4681.3
3516.2	4681	3538.7	4681.1	3556.4	4681.1				

#Mann= 3 , -1 , 0  
1000 .08 0 2432.4 .03 0 2810.9 .05 0  
Levee=-1,2320,4720,-1,3010.4,4720,,  
Bank Sta=2575.8,2810.9  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5100 ,280,256,205  
Node Last Edited Time=Mar/02/2005 12:22:13  
#Sta/Elev= 86

1000	4711.3	1011.8	4711.9	1027.4	4712.8	1071.2	4711.8	1111.5	4710.8
1166.8	4710.4	1212.2	4708.9	1252.5	4707.3	1309.7	4697.3	1350.3	4695.7
1394.3	4694.3	1409.9	4694.5	1440.6	4693.6	1442.6	4693.6	1482.4	4691.2
1530.9	4688.2	1588.3	4686.2	1636.2	4686	1686	4685	1736.6	4684.3
1802.7	4683.9	1823.4	4683.4	1848.4	4684.3	1869.6	4683.6	1910.5	4682.9
1965.3	4681.2	2017.8	4680.8	2072.1	4680.5	2129.4	4680	2183.5	4680.2
2201.4	4679.6	2223.5	4672	2265.7	4671.7	2315.8	4673	2350.2	4673.1
2365.2	4672.1	2371.3	4670.6	2371.3	4669.8	2439.6	4671	2449.6	4670.3
2469.6	4670.8	2516.2	4670.6	2532.9	4672.4	2544.6	4673.6	2590.3	4673.6
2628.6	4673.6	2739.6	4678	2768.7	4678.4	2826.6	4677.7	2858.4	4678.8
2866.8	4677.4	2873.2	4678.3	2877.9	4678.3	2892.9	4677.2	2900.4	4677.6
2905.3	4677.6	2919.7	4678	2926.1	4678.4	2931.3	4678.4	2942.2	4677.5
2962.3	4678.6	2977.3	4679.1	2996.3	4675.4	3004.9	4677.9	3046.7	4678.2
3086.6	4677.4	3098.7	4676.1	3126.2	4678.1	3140.6	4679.1	3148.5	4678.6
3194.5	4678.9	3243.7	4679	3295.5	4680	3348.2	4680.5	3399.1	4680.9
3427.5	4681.9	3501.6	4682.1	3557	4682.6	3616.4	4683.2	3679.1	4683.8
3741.1	4683.7	3801.5	4684	3862.8	4684.2	3909	4684.1	3934.5	4684.2
3959.5	4684.8								

#Mann= 3 , -1 , 0  
1000 .08 0 2223.5 .03 0 2739.6 .05 0  
Levee=-1,2235,4700,-1,2930,4700,,  
Bank Sta=2350.2,2739.6  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5000 ,264,262,200  
Node Last Edited Time=Mar/03/2005 08:46:31  
#Sta/Elev= 60

1000	4706.9	1046.2	4707	1104.1	4706.4	1153.6	4705.2	1196.2	4702.6
1233.4	4699.5	1275	4695.6	1325.2	4690.7	1360.7	4687.1	1384.9	4685.6
1400.4	4685.6	1422	4684.7	1468.8	4683.5	1525.3	4683.2	1581	4682.5
1642	4682.3	1685.7	4682	1737.1	4681.5	1786.6	4681.3	1816.5	4682
1838.3	4682.5	1860.9	4681.9	1881.9	4681.8	1931.8	4681.3	1983.9	4680.8
2033.3	4679.8	2060	4677.3	2085.1	4674.4	2094.5	4674.4	2110.1	4671.9
2131.6	4671.3	2154.2	4671	2159.6	4668.8	2370.8	4668.8	2398.9	4669.8
2416.6	4670.2	2436.6	4672	2465	4672	2488.5	4672.3	2503.6	4672.3
2518.9	4672.3	2597	4672.3	2610.9	4677.7	2642.9	4677.8	2691.5	4678.1
2733.1	4677.9	2782.5	4677.2	2793.8	4676.2	2799.7	4677.1	2804.4	4677.1
2817	4676.3	2826.3	4676.8	2830.3	4676.8	2837.7	4676.5	2873.8	4676.6
2910.4	4676.4	2940.8	4675.4	2966.1	4677.7	3008.6	4678.4	3044.8	4677.6

#Mann= 3 , -1 , 0  
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Levee=-1,2110,4700,-1,2880,4700,,  
#XS Ineff= 2 , 0  
0 2094.5 2691.5 0 4678.1



4688.04	4688.04	4688.32	4688.79	4689.5	4690.07	4690.4	4690.4	4690.51	4690.51
4690.6	4690.85	4691.49	4692.15	4692.54	4692.88	4692.9	4693.04	4693.04	4693.12
4693.77	4694.68	4695.24	4695.49	4695.49	4695.66	4695.7	4696.02	4696.49	4697.19
4697.8	4698.24	4698.24	4698.34	4698.9	4698.9	4705	4708	4710	4711
4710.5	4709								
4685.2	4684.5	4683.6	4681.7	4682.4	4682.4	4681.7	4680.8	4679.1	4667.1
4667.1	4681.3	4683.5	4684.6	4684.6	4683.3	4680.8	4666.1	4666.1	4683.7
4685.1	4686.1	4687.2	4686.9	4685.6	4683.5	4666.4	4666.4	4686.2	4688.1
4689.6	4689.6	4688.2	4686.2	4666.4	4666.4	4688.7	4691	4692.1	4692.2
4691	4688.8	4666.4	4666.4	4680.8	4691.5	4700	4703	4705	4706
4705.5	4704								
1000	1002	1021	1025	1046	1055	1069	1084	1096	1096.1
1101.9	1102	1112	1129	1155	1175	1185	1185.1	1190.9	1191
1194	1203	1226	1250	1264	1276	1276.1	1281.9	1282	1292
1308	1341	1361	1370	1370.1	1375.9	1376	1389	1406	1431
1453	1469	1469.1	1472	1487	1487.1	1496.7	1566.7	1636.7	1706.7

1776.7	1846.7								
4685.2	4685.3	4685.78	4685.9	4686.48	4686.73	4687.1	4687.54	4687.87	4687.87
4688.04	4688.04	4688.32	4688.79	4689.5	4690.07	4690.4	4690.4	4690.51	4690.51
4690.6	4690.85	4691.49	4692.15	4692.54	4692.88	4692.9	4693.04	4693.04	4693.12
4693.77	4694.68	4695.24	4695.49	4695.49	4695.66	4695.7	4696.02	4696.49	4697.19
4697.8	4698.24	4698.24	4698.34	4698.9	4698.9	4705	4708	4710	4711
4710.5	4709								
4685.2	4684.5	4683.6	4681.7	4682.4	4682.4	4681.7	4680.8	4679.1	4667.1
4667.1	4681.3	4683.5	4684.6	4684.6	4683.3	4680.8	4666.1	4666.1	4683.7
4685.1	4686.1	4687.2	4686.9	4685.6	4683.5	4666.4	4666.4	4686.2	4688.1
4689.6	4689.6	4688.2	4686.2	4666.4	4666.4	4688.7	4691	4692.1	4692.2
4691	4688.8	4666.4	4666.4	4680.8	4691.5	4700	4703	4705	4706
4705.5	4704								

Pier Skew, UpSta & Num, DnSta & Num= ,1496.7, 2 ,1496.7, 2 , 0 , 0 , 0 , ,

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0 4706  
3 3  
0 4706

Pier Skew, UpSta & Num, DnSta & Num= ,1566.7, 2 ,1566.7, 2 , 0 , 0 , 0 , ,

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3 3  
0 4706

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3 3  
0 4706

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0 4706  
3 3  
0 4706

Pier Skew, UpSta & Num, DnSta & Num= ,1776.7, 2 ,1776.7, 2 , 0 , 0 , 0 , ,

3 3  
0 4706  
3 3  
0 4706

Abutment Skew #Up #Dn= , 2 , 2

1806.7 1846.7  
4681.2 4701  
1806.7 1846.7  
4681.2 4701

BR Coef=-1 , 0 , 0 , , 0 , , , 0.8, -1, , 0,  
WSPro=, , , 1 , , , 0 , , , 0 , , , -1 , -1 , -1 , 0 , 0 , 0 , 0 , 0 , 0  
BC Design=, , 0 , , 0 , , , , ,

Type RM Length L Ch R = 1 , 4825 , 50, 50, 50

Node Last Edited Time=Mar/30/2005 11:09:42

#Sta/Elev= 24

1000	4685.2	1002	4684.5	1021	4683.6	1046	4671.9	1055	4671.5
1069	4667.3	1101	4667.1	1188	4666.1	1194	4666.4	1483	4666.4
1487	4680.2	1617	4678.8	1623	4678.8	1661	4677.7	1667	4677.7
1714	4677.2	1720	4677.2	1757	4677.3	1779	4677.2	1785	4677.2
1820	4676.9	1826	4676.9	1846.7	4677.1	1846.7	4709		

#Mann= 3 , -1 , 0

1000	.08	0	1021	.03	0	1487	.05	0
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Levee=0,,, -1,1846.7,4695,,

#XS Ineff= 2 , 0

0	1002	0
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Permanent Ineff=

F F

Bank Sta=1021,1487

Exp/Cntr=0.3,0.1

Chan Stop Cuts=-1

Use User Specified Reach Order=0

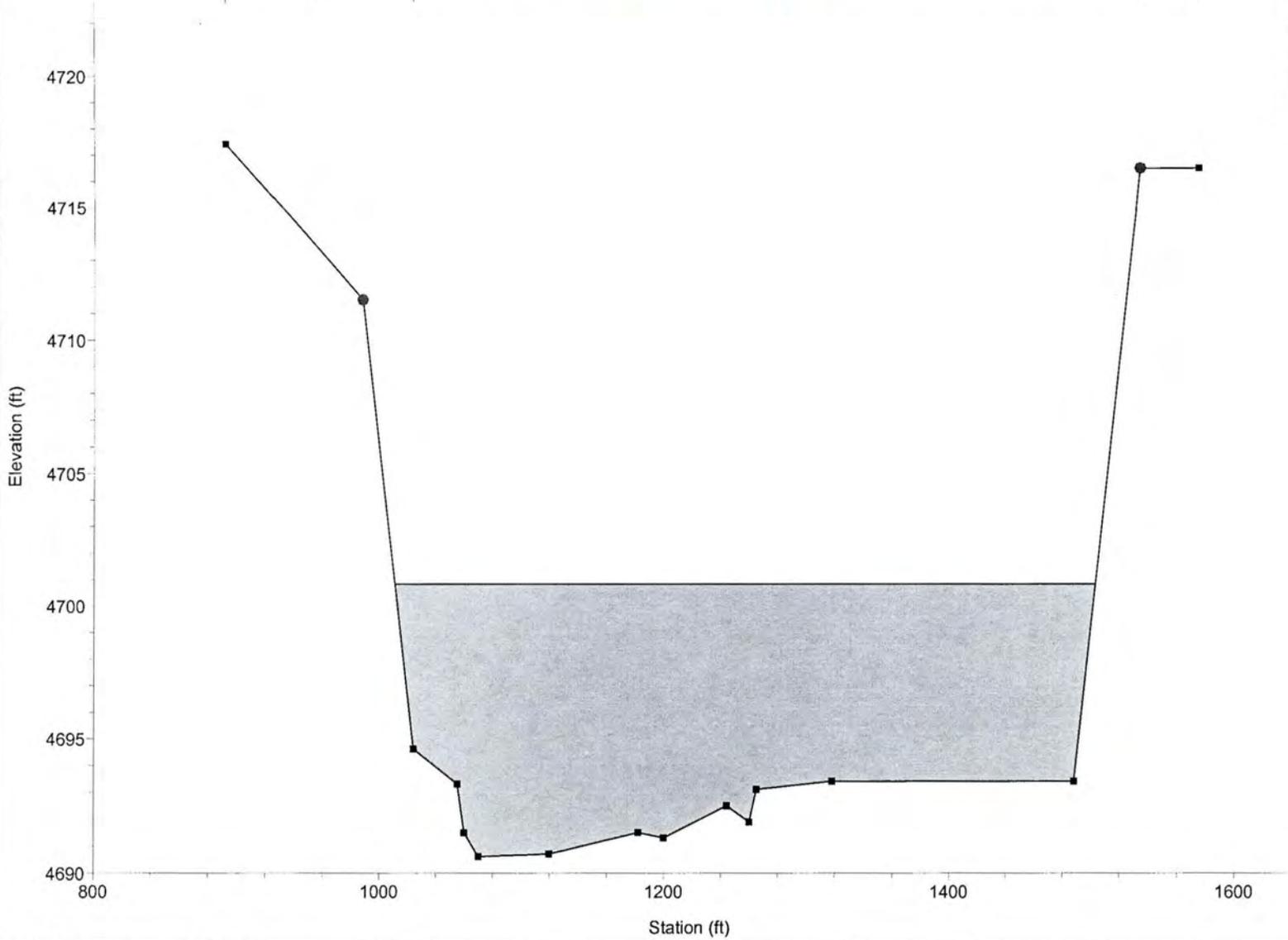
User Specified Reach Order=Fountain Creek ,Reach1

Fountain Creek Improved 5-10-05 Plan: Fountain Creek 05/12/2005  
Downstream cross-section of HWY 50 bridge

SECTION 6749



Legend	
WS PF 1	■
Ground	●
Bank Sta	●



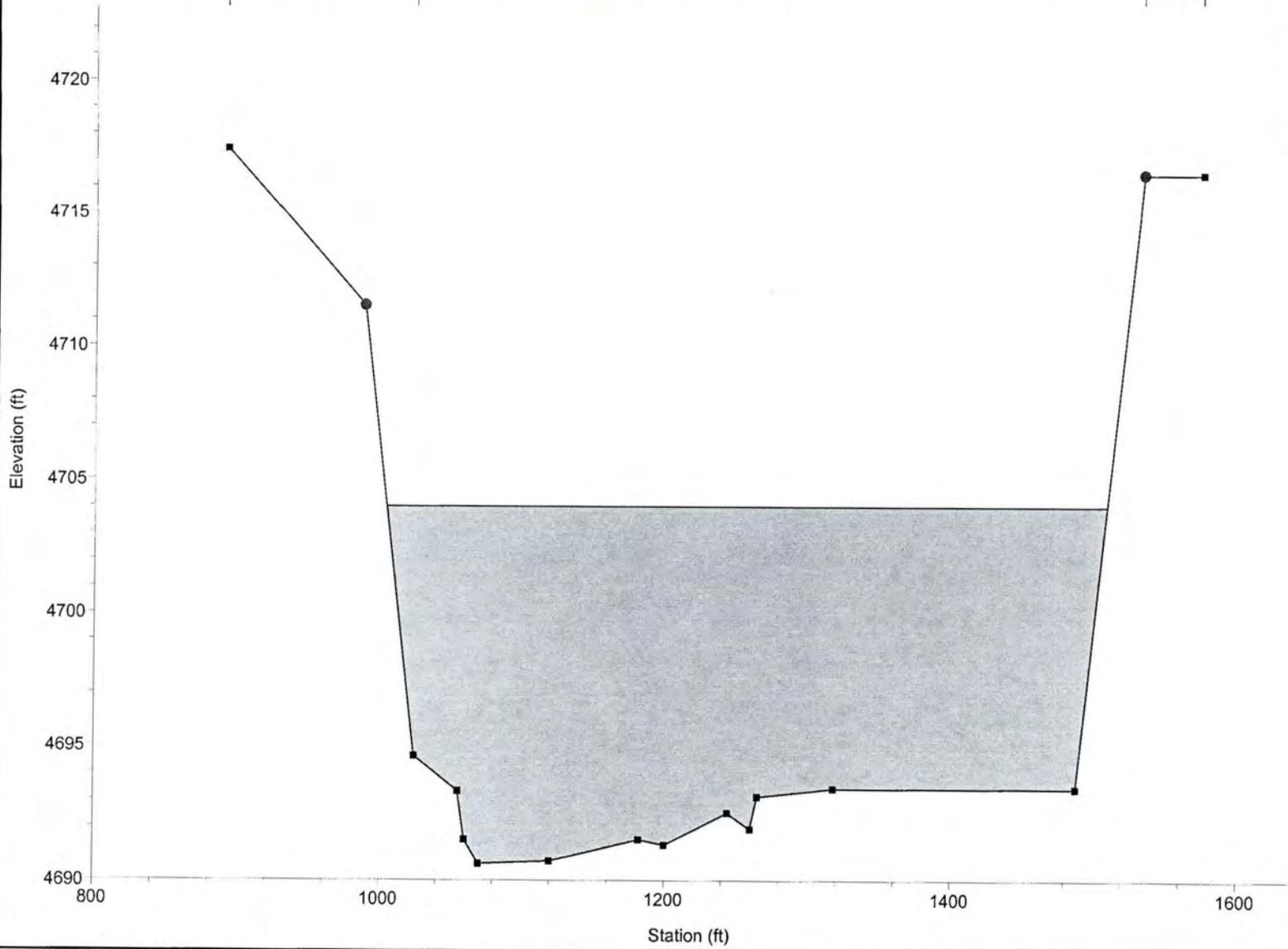
1 in Horiz. = 110 ft 1 in Vert. = 6 ft

Fountain Creek Improved 5-10-05 Plan: Fountain Creek 05/12/2005  
Upstream cross-section of HWY 50 bridge

SECTION 1117



Legend	
WS PF 1	■
Ground	●
Bank Sta	●



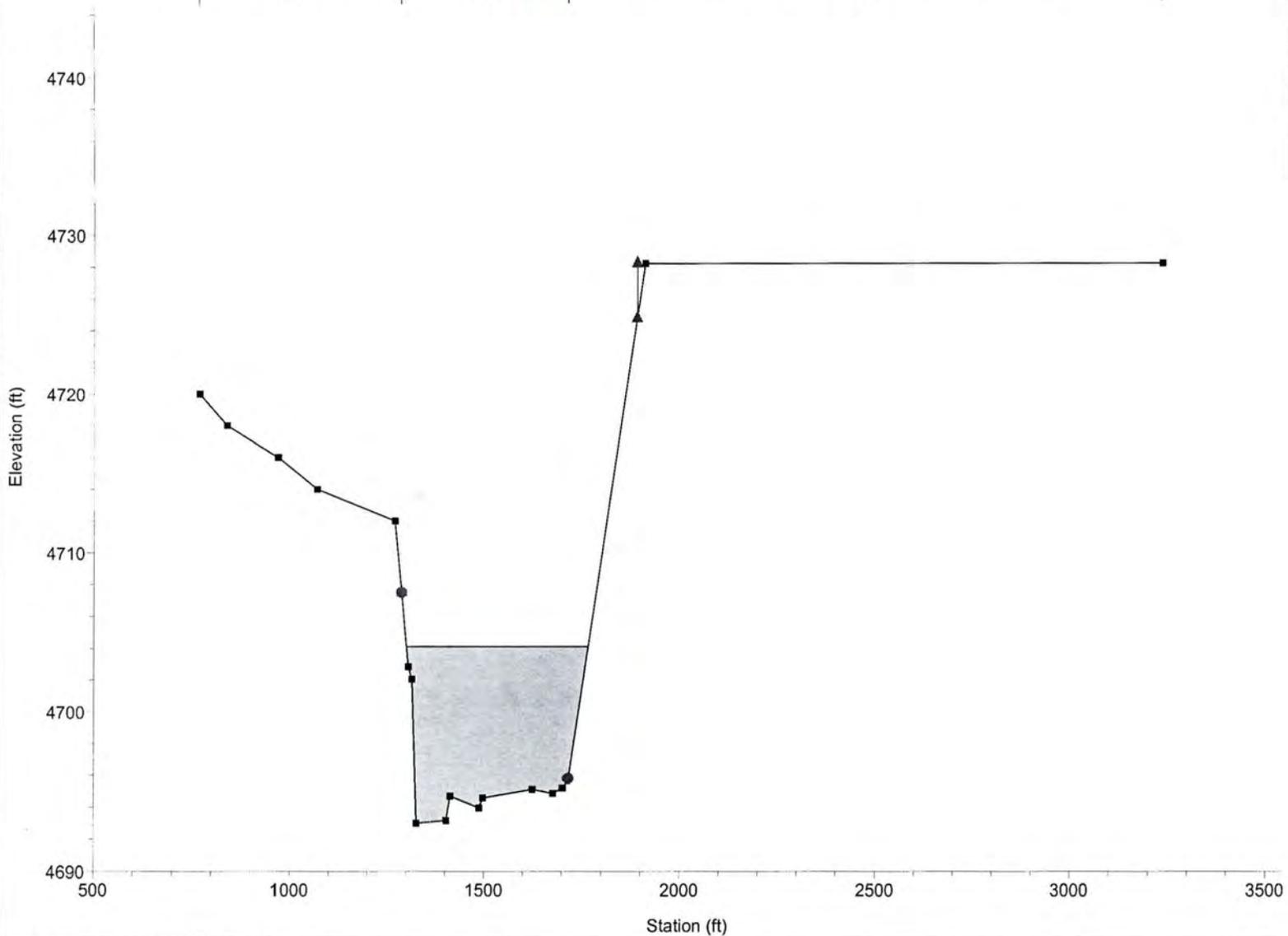
1 in Horiz. = 110 ft 1 in Vert. = 6 ft

Fountain Creek Improved 5-10-05 Plan: Fountain Creek 05/12/2005

Downstream CLOMR



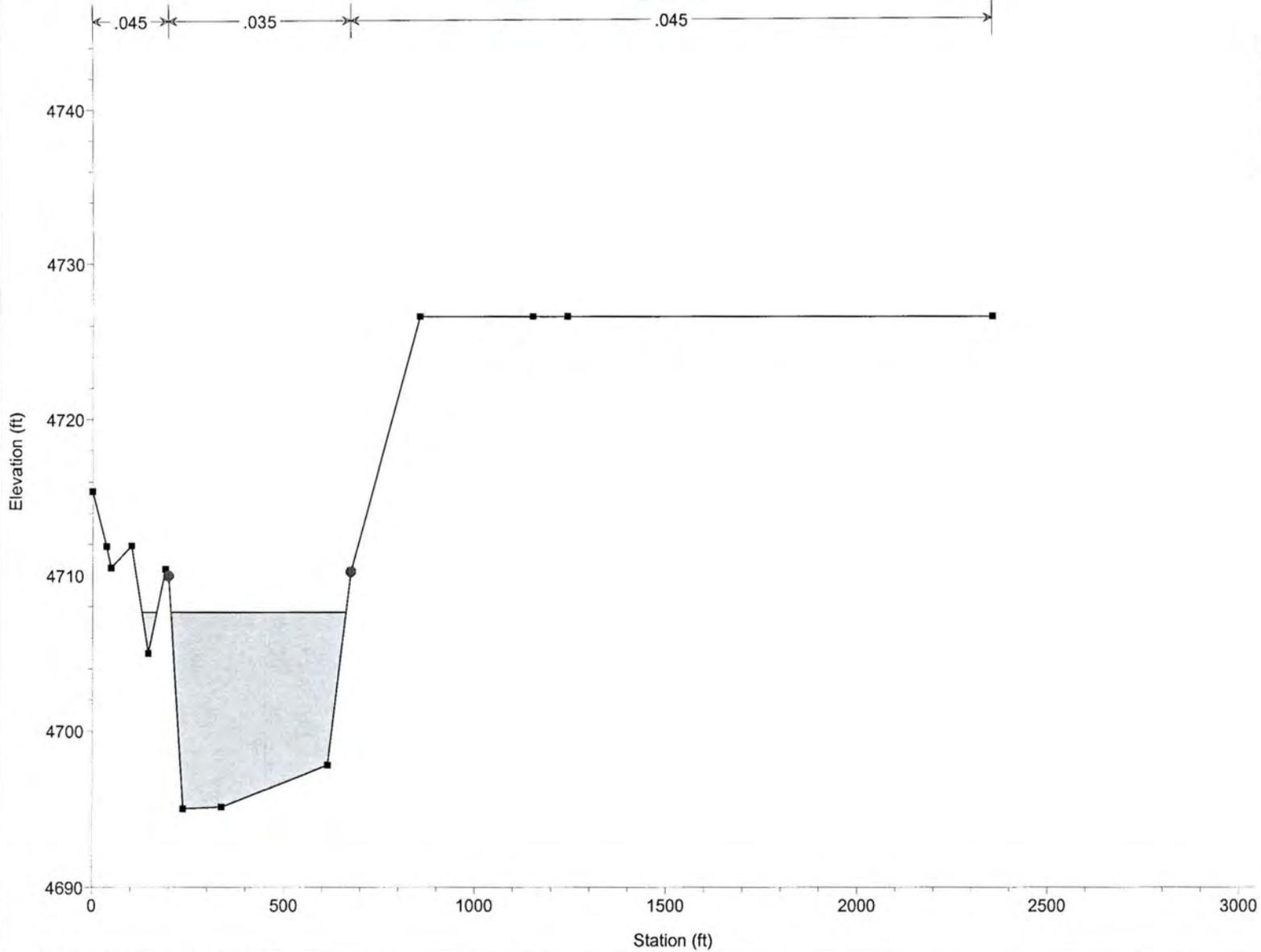
Legend	
WS PF 1	■
Ground	▲
Ineff	●
Bank Sta	●



1 in Horiz. = 400 ft 1 in Vert. = 10 ft

Fountain Creek Improved 5-10-05 Plan: Fountain Creek 05/12/2005

SECTION 6900



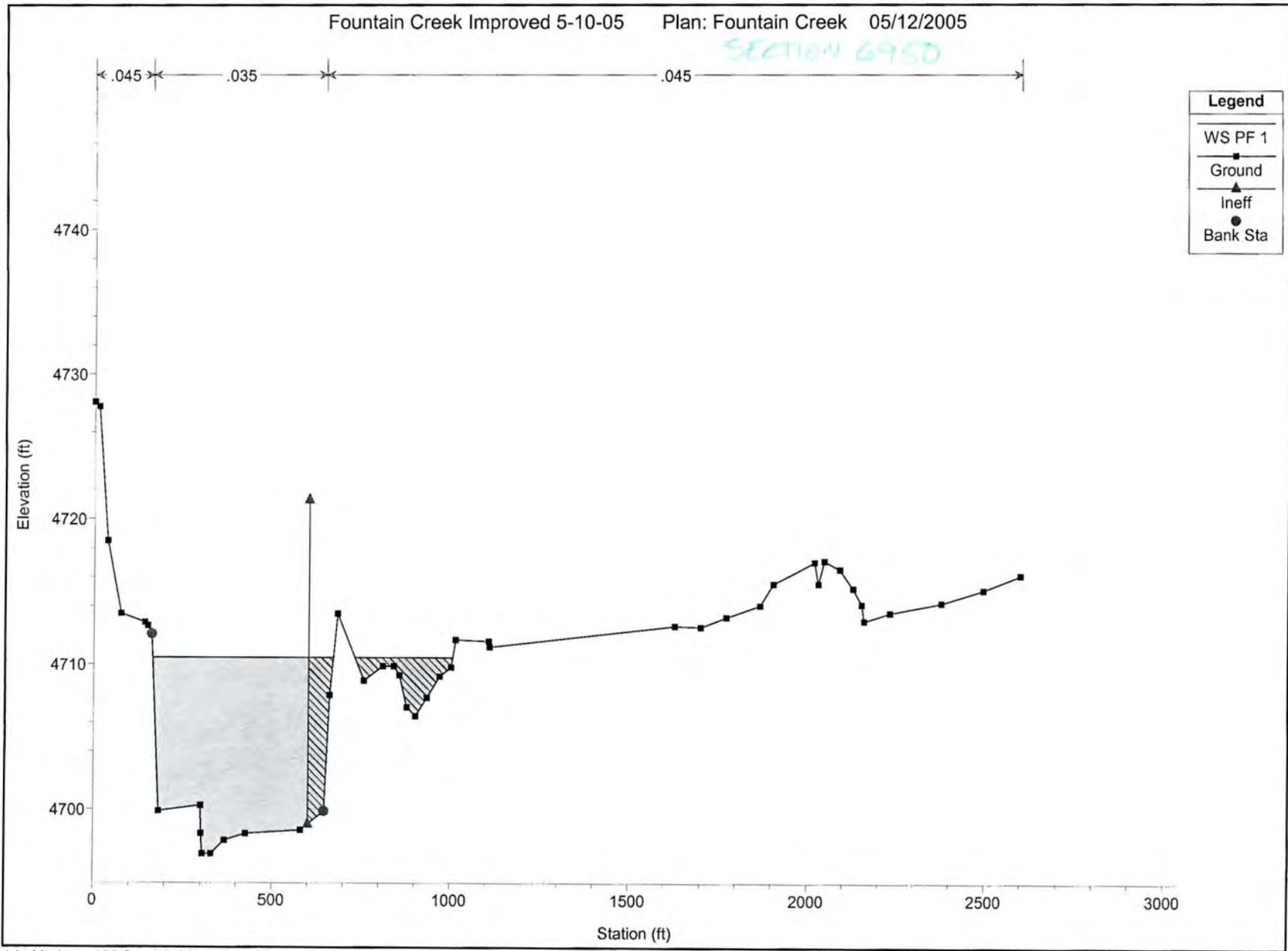
Legend	
WS PF 1	■
Ground	—
Bank Sta	●

1 in Horiz. = 400 ft 1 in Vert. = 10 ft

Fountain Creek Improved 5-10-05

Plan: Fountain Creek 05/12/2005

SECTION 6950



HEC-RAS Plan: Plan 05 River: Fountain Creek Reach: Reach1 Profile: PF 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Cnl
Reach1	8600	PF 1	64000.00	4742.28	4751.21		4753.07	0.007127	10.95	5844.54	1091.84	0.83
Reach1	8550	PF 1	64000.00	4736.58	4745.96	4744.12	4746.94	0.003371	7.91	8094.17	2121.83	0.58
Reach1	8500	PF 1	64000.00	4732.88	4745.31	4740.07	4745.79	0.000873	5.54	11554.86	2094.86	0.32
Reach1	8450	PF 1	64000.00	4728.48	4743.94	4739.54	4744.87	0.001548	7.73	8274.99	1655.38	0.43
Reach1	8400	PF 1	64000.00	4727.18	4741.61	4738.73	4743.85	0.003464	12.00	5331.26	500.68	0.65
Reach1	8350	PF 1	64000.00	4727.18	4741.60	4738.73	4743.84	0.003470	12.01	5328.58	500.67	0.65
Reach1	8325	Bridge										
Reach1	8300	PF 1	64000.00	4726.78	4738.31	4738.31	4742.41	0.008889	16.26	3936.44	475.27	1.00
Reach1	8250	PF 1	64000.00	4723.88	4735.48		4736.83	0.002908	9.34	8851.74	893.79	0.57
Reach1	8200	PF 1	64000.00	4718.38	4728.39	4727.90	4731.38	0.007781	13.88	4609.75	663.16	0.91
Reach1	8150	PF 1	64000.00	4711.98	4723.00		4724.61	0.004064	10.20	6277.20	860.84	0.66
Reach1	8100	PF 1	64000.00	4711.98	4721.36		4723.08	0.004143	10.53	6075.61	913.83	0.67
Reach1	8050	PF 1	64000.00	4709.98	4720.67	4718.12	4721.92	0.002867	8.97	7133.08	1003.86	0.56
Reach1	8000	PF 1	64000.00	4707.48	4719.23		4720.09	0.002185	7.67	9404.45	1807.35	0.49
Reach1	7950	PF 1	64000.00	4703.28	4713.69	4713.69	4717.12	0.009578	14.86	4307.85	634.30	1.00
Reach1	7900	PF 1	64000.00	4699.98	4711.99		4713.41	0.002432	9.57	6686.31	678.91	0.54
Reach1	6950	PF 1	64000.00	4696.98	4708.63		4711.46	0.005140	13.54	4822.28	589.76	0.77
Reach1	6900	PF 1	64000.00	4693.28	4709.43		4709.90	0.000574	5.57	12172.79	1354.01	0.27
Reach1	6850	PF 1	64000.00	4692.98	4708.89	4701.46	4709.61	0.000787	6.81	9399.34	1483.78	0.32
Reach1	6817	PF 1	64000.00	4690.60	4706.13	4702.64	4708.71	0.003042	12.88	4970.83	389.57	0.64
Reach1	6749.5	Bridge										
Reach1	6749	PF 1	64000.00	4690.60	4702.64	4702.64	4707.45	0.007618	17.62	3633.09	374.29	1.00
Reach1	6700	PF 1	64000.00	4689.70	4700.46	4700.46	4704.38	0.006485	16.14	4295.34	892.11	1.00
Reach1	6600	PF 1	64000.00	4688.30	4698.95	4696.29	4699.82	0.002210	7.49	8542.99	1229.53	0.50
Reach1	6500	PF 1	64000.00	4687.30	4698.38	4696.15	4699.30	0.002836	7.71	8303.42	1283.33	0.53
Reach1	6400	PF 1	64000.00	4686.40	4697.95	4695.40	4698.86	0.001808	7.78	8695.80	1333.07	0.51
Reach1	6300	PF 1	64000.00	4685.40	4695.09	4694.99	4697.97	0.006809	14.91	5433.14	911.63	0.99
Reach1	6200	PF 1	64000.00	4684.40	4695.15	4693.02	4696.49	0.003350	9.32	6865.79	955.96	0.61
Reach1	6100	PF 1	64000.00	4683.40	4693.96		4695.68	0.004015	10.79	6479.95	906.15	0.70
Reach1	6000	PF 1	64000.00	4682.30	4692.68	4691.46	4694.67	0.004852	11.87	6271.60	884.44	0.78
Reach1	5900	PF 1	64000.00	4681.30	4692.52	4689.65	4693.65	0.002842	8.52	7508.74	924.48	0.53
Reach1	5800	PF 1	64000.00	4679.90	4691.84	4688.39	4692.92	0.001827	8.92	8474.54	1242.18	0.52
Reach1	5700	PF 1	64000.00	4677.90	4690.74	4686.28	4691.51	0.006480	7.30	9179.86	1018.01	0.41
Reach1	5600	PF 1	64000.00	4676.80	4689.06	4685.41	4690.10	0.004009	8.80	8381.07	942.14	0.51
Reach1	5500	PF 1	64000.00	4675.10	4686.62	4684.71	4688.72	0.003566	13.33	7377.06	1063.93	0.76
Reach1	5400	PF 1	64000.00	4673.80	4686.10	4683.76	4687.60	0.002934	12.20	7040.12	852.36	0.72
Reach1	5300	PF 1	64000.00	4672.20	4685.27	4682.47	4686.82	0.002089	10.27	6925.50	761.15	0.58
Reach1	5200	PF 1	64000.00	4671.10	4683.82	4682.06	4686.03	0.003266	13.96	6080.41	690.40	0.74
Reach1	5100	PF 1	64000.00	4669.80	4680.84	4680.84	4684.29	0.005981	15.20	4591.52	695.00	0.95
Reach1	5000	PF 1	64000.00	4668.80	4679.91	4678.91	4682.36	0.003508	12.73	5405.48	770.00	0.77
Reach1	4900	PF 1	64000.00	4667.00	4679.44		4681.46	0.002533	11.65	6333.34	1023.43	0.64
Reach1	4875	PF 1	64000.00	4666.10	4679.49	4675.41	4681.36	0.001794	11.06	6334.11	891.30	0.55
Reach1	4850	Bridge										
Reach1	4825	PF 1	64000.00	4666.10	4678.40	4675.42	4680.72	0.002471	12.27	5476.36	729.86	0.64

F  
E  
R

Geom Title=Fountain Creek Geo w-exapanded x-section  
Program Version=3.12  
Viewing Rectangle= 0 , 1 , 1 , 0

River Reach=Fountain Creek ,Reach1  
Reach XY= 2

.4176471 .8776471 .4317647 .3223529  
Rch Text X Y=0.4211765,0.7388235  
Reverse River Text= 0

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Node Last Edited Time=Feb/28/2005 13:30:07

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0 4761.28 142 4757.48 340 4756.48 448 4755.88 528 4751.08  
723 4743.88 814 4743.48 895 4742.28 905 4743.68 1072 4743.98  
1128 4745.28 1241 4747.98 1316 4746.48 1355 4745.58 1422 4746.58  
1471 4747.68 1616 4747.68 1621 4757.98 1695 4760.68 1727 4758.98  
1902 4760.38 1962 4766.18 1967 4766.18 2033 4766.98 2042 4767.68  
2075 4767.38  
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Node Last Edited Time=Feb/28/2005 14:02:31

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262 4739.78 280 4747.98 360 4738.08 536 4740.18 625 4739.68  
632 4737.18 691 4736.58 740 4737.08 753 4739.18 774 4741.08  
911 4739.48 1273 4739.08 1298 4740.98 1318 4745.08 1574 4739.08  
1663 4744.68 1694 4742.98 1721 4752.28 1765 4741.08 1803 4748.38  
2125 4745.58 2607 4745.88 2844 4747.28 2870 4752.78 2875 4752.78  
2882 4751.18 2910 4748.98 2955 4751.18 3013 4754.71  
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0 .045 0 280 .035 0 1721 .045 0  
Levee=0,,,-1,2870,4752.78,,  
#XS Ineff= 2 , 0  
0 280 4747.98 1721 0 4749.18  
Permanent Ineff=  
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Bank Sta=280,1721  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8500 ,760,770,820  
Node Last Edited Time=Feb/28/2005 14:05:49

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331 4732.88 411 4733.78 457 4732.88 491 4733.68 559 4735.08  
576 4733.68 667 4734.78 743 4734.98 879 4732.88 893 4736.38  
1003 4736.38 1245 4735.88 1295 4738.48 1329 4748.28 1375 4739.78  
1402 4738.08 1426 4742.58 1497 4740.78 1810 4741.08 2092 4738.58  
2170 4738.88 2270 4762.88 2340 4764.28 2625 4777.98 2670 4777.18  
2710 4746.18 2780 4746.18 2820 4777.98  
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0 .045 0 42 .035 0 1329 .045 0  
#XS Ineff= 2 , 0  
0 42 4747.68 1329 0 4748.28  
Permanent Ineff=  
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Bank Sta=42,1329  
Exp/Cntr=0.3,0.1

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Node Last Edited Time=Feb/28/2005 14:06:42

#Sta/Elev= 45

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643.12	4729.68	651.62	4729.08	687.62	4729.77	807.62	4733.18	814.22	4729.84
832.62	4728.48	846.62	4729.98	847.62	4731.28	1048.62	4732.78	1077.62	4736.48
1236.62	4737.48	1276.62	4743.28	1298.62	4743.48	1342	4734.18	1480	4733.68
1558	4734.18	1568	4735.18	1580	4736.18	1650	4736.18	1762	4735.18
1930	4734.18	2025	4734.18	2060	4735.18	2175	4735.18	2295	4735.18
2312	4735.18	2318	4734.18	2645	4734.18	2680	4735.18	2865	4736.18
2878	4737.18	2892	4741.18	2900	4741.18	2915	4740.18	2920	4741.18
2935	4739.18	2950	4740.18	3300	4740.78	3365	4755.68	3410	4757.18

#Mann= 3 , 0 , 0

0	.045	0	450	.035	0	1276.62	.045	0
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Levee=0,,, -1,1700,4757.18,,

#XS Ineff= 2 , 0

0	450	4757.18	1276.62	0	4745.18
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Permanent Ineff=

F F

Bank Sta=450,1276.62

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8400 ,1,1,1

Node Last Edited Time=Feb/28/2005 14:14:15

#Sta/Elev= 27

0	4753.08	1	4744.58	19.07	4741.88	31.07	4735.28	67.07	4731.68
70.07	4728.58	72.37	4728.28	111.07	4727.18	167.07	4728.29	174.07	4730.88
347.07	4730.38	455.07	4729.38	465.07	4732.9	475.07	4732.9	478	4731.9
498.07	4739.48	520.07	4740.48	521	4746.58	522	4748.88	710	4747.88
955	4747.18	1095	4747.18	1165	4748.48	1270	4747.88	1330	4748.48
1855	4764.28	2080	4768.18						

#Mann= 3 , 0 , 0

0	.045	0	1	.035	0	520.07	.045	0
---	------	---	---	------	---	--------	------	---

#XS Ineff= 2 , 0

0	1	4753.08	520.07	0	4747.18
---	---	---------	--------	---	---------

Permanent Ineff=

F F

Bank Sta=1,520.07

Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 1 ,8350 ,156,156,156

BEGIN DESCRIPTION:

Upstream cross-section of HWY 47 bridge

END DESCRIPTION:

Node Last Edited Time=Mar/02/2005 13:19:17

#Sta/Elev= 27

0	4753.08	1	4744.58	19.07	4741.88	31.07	4735.28	67.07	4731.68
70.07	4728.58	72.37	4728.28	111.07	4727.18	167.07	4728.29	174.07	4730.88
347.07	4730.38	455.07	4729.38	465.07	4732.9	475.07	4732.9	478	4731.9
498.07	4739.48	520.07	4740.48	521	4746.58	522	4748.88	710	4747.88
955	4747.18	1095	4747.18	1165	4748.48	1270	4747.88	1330	4748.48
1855	4764.28	2080	4768.18						

#Mann= 3 , 0 , 0

0	.045	0	1	.035	0	520.07	.045	0
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#XS Ineff= 2 , 0

0	1	4753.08	520.07	0	4747.18
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Permanent Ineff=

F F

Bank Sta=1,520.07

Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 3 ,8325 ,,,

BEGIN DESCRIPTION:

HWY 47

END DESCRIPTION:

Node Last Edited Time=Mar/02/2005 13:16:51

Bridge Culvert--1,0,-1,-1, 0

Deck	Dist	Width	WeirC	Skew	NumUp	NumDn	MinLoCord	MaxHiCord	MaxSubmerge	Is_Ogee
20,15,2.7,0	11	11	, ,	0.95	0	3.2,3.2,				
0	522	522		710	955	1095	1165	1270	1330	1855
2080										
4753.08	4749.58	4748.88	4747.88	4747.18	4747.18	4748.48	4747.88	4748.48	4764.28	
4768.18										
4745.68	4745.68									

0	522	522		710	955	1095	1165	1270	1330	1855
2080										
4753.08	4749.58	4748.88	4747.88	4747.18	4747.18	4748.48	4747.88	4748.48	4764.28	
4768.18										
4745.68	4745.68									

BR Coef=-1 , 0 , 0 , 0.9, 0 , , , 0.8, -1, 1.33, 0,  
 WSPro= , , , 1 , , , 0 , , , 0 , , , -1 , -1 , -1 , 0 , 0 , 0 , 0 , 0 , 0  
 BC Design= , , 0 , , 0 , , , ,

Type RM Length L Ch R = 1 , 8300 , 620, 620, 620

BEGIN DESCRIPTION:

Downstream cross-section of HWY 47 bridge

END DESCRIPTION:

Node Last Edited Time=Mar/14/2005 14:37:13

#Sta/Elev= 32

0	4753.08	2	4746.08	15	4743.98	33	4733.68	45	4733.93
46	4733.48	50	4734.38	62	4734.18	65	4732.78	98	4729.98
102	4729.68	140	4726.78	185	4727.58	186	4728.18	232	4727.48
234	4730.18	460	4729.48	470	4732.78	480	4732.58	483	4731.58
507	4740.98	520	4741.68	521	4746.58	522	4748.88	710	4747.88
955	4747.18	1095	4747.18	1165	4748.48	1270	4747.88	1330	4748.48
1855	4764.28	2080	4768.18						

#Mann= 3 , 0 , 0

0	.045	0	2	.035	0	520	.045	0
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#XS Ineff= 2 , 0

0	2	520	0
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Permanent Ineff=

F F

Bank Sta=2,520

Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 1 , 8250 , 1260, 1180, 1070

Node Last Edited Time=Feb/28/2005 14:08:14

#Sta/Elev= 43

0	4750.68	31.1	4745.88	49.1	4727.88	331.1	4726.48	334.38	4724.39
364.1	4723.88	419.29	4724.39	424.1	4727.68	836.1	4727.18	883.1	4739.78
897.1	4740.28	956.44	4739.76	1021.87	4739.98	1076.5	4740.27	1182.6	4739.38
1241.17	4739.18	1306.61	4738.93	1364.62	4738.38	1423	4739.3	1450.5	4738.38
1568.8	4738.68	1615.32	4739.74	1620.25	4738.88	1620.25	4762.18	2000	4762.18
2100	4762.18	2200	4762.18	2310	4762.18	2310	4736.78	2356.3	4735.98
2391.39	4735.68	2405.23	4735.15	2422.11	4736.08	2450.95	4735.05	2450.95	4762.18
2690	4747.18	2904.14	4738.28	2917.6	4737.68	2935.25	4734.35	2977.87	4735.68
3014.76	4744.08	3047.13	4752.28	3058.64	4752.58				

#Mann= 3 , 0 , 0

0	.045	0	31.1	.035	0	883.1	.045	0
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#XS Ineff= 2 , 0

0	1620.25	0	4762.18
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Permanent Ineff=

F T

Bank Sta=31.1, 883.1

Exp/Cntr=0.3, 0.1

Type RM Length L Ch R = 1 , 8200 , 1080, 1160, 1230

Node Last Edited Time=Feb/28/2005 14:08:33

#Sta/Elev= 49

0	4740.88	50.9	4738.78	170.9	4729.38	274.9	4718.88	709.9	4722.38
716.12	4719.48	746.9	4718.38	772.78	4719.31	775.9	4725.18	801.9	4721.98
833.9	4732.98	864.9	4734.48	898.21	4736.18	1005.2	4737.1	1017.38	4735.99
1107.82	4736.08	1158.92	4732.92	1204.23	4733.48	1246.6	4733.38	1289.02	4734
1457.54	4737.58	1496.46	4738.85	1500	4738.85	1500	4757.18	2180	4757.18
2180	4739.28	2244.28	4737.17	2339.42	4734.28	2364.53	4733.51	2404.83	4732.6
2433.24	4725.18	2456.65	4731.95	2471.53	4731.78	2502.01	4731.77	2511.05	4731.06
2538.52	4731.78	2604.76	4731.62	2729.45	4732.68	2786.42	4732.51	2816.01	4732.44
2841.38	4730.08	2850.14	4729.81	2864.6	4732.28	2887.79	4731.86	2902.22	4729.52
2951.44	4730.68	2999.1	4738.3	3017.85	4740.18	3056.59	4740.99		

#Mann= 3 , 0 , 0

0	.045	0	170.9	.035	0	833.9	.045	0
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#XS Ineff= 2 , 0

0	1500	0	4757.18
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Permanent Ineff=

F T

Bank Sta=170.9,833.9

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8150 ,320,370,475

Node Last Edited Time=Feb/28/2005 14:08:40

#Sta/Elev= 69

0	4738.98	198.7	4731.18	229.7	4715.58	279.7	4715.78	282.7	4712.18
303.7	4712.38	306.7	4714.88	788.7	4716.88	796.03	4713.71	810.7	4711.98
830.36	4713.98	832.7	4715.58	1032	4714.58	1080	4726.18	1091	4725.98
1091.1	4725.48	1132	4726.18	1175	4725.48	1175.1	4725.98	1185	4726.18
1185.1	4726.18	1202.45	4727	1233.33	4726.49	1292.57	4727.91	1413.45	4729.06
1503.23	4730.38	1547.67	4730.48	1581.79	4729.99	1646.07	4730.07	1692.5	4729.81
1694.74	4729.78	1745.2	4729.86	1773.72	4729.7	1825.03	4730.21	1986.74	4731.48
2042.11	4730.08	2072.82	4732.13	2093.18	4732.13	2155.18	4732.73	2261.26	4732.45
2328.21	4732.48	2342.7	4731.92	2366.72	4728.89	2378.63	4727.35	2399.86	4721.79
2421.15	4727.68	2445.46	4729.43	2457.77	4725.7	2469.66	4728.14	2567.52	4726.91
2608.56	4725.28	2627.09	4725.36	2642.26	4724.48	2651.38	4724.6	2666.7	4730.02
2695.54	4730.68	2703.64	4729.51	2722.1	4737.65	2737.37	4742.94	2787.55	4743.99
2833.57	4744.88	2837.45	4745.23	2864.36	4731.18	2874.34	4729.67	2886.49	4730.81
2908.25	4729.98	2933.6	4729.14	2951.86	4731.06	3027.29	4731.81		

#Mann= 3 , 0 , 0

0	.045	0	198.7	.035	0	1080	.045	0
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#XS Ineff= 2 , 0

0	2342.7	0	4731.92
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Permanent Ineff=

F T

Bank Sta=198.7,1080

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8100 ,280,300,300

Node Last Edited Time=Feb/28/2005 13:35:34

#Sta/Elev= 82

130	4731.18	220	4725.88	285	4717.18	370	4714.18	415.71	4713.91
430.77	4712.28	467.34	4712.18	473.93	4713.98	490.15	4712.68	528.28	4714.24
554.88	4714.58	587.49	4714.28	634.32	4712.88	689.48	4712.8	706.11	4712.47
726.2	4713.58	732.22	4711.98	770.27	4712.18	814.38	4712.68	855.1	4712.46
900.15	4713.08	989.08	4713.28	1006.29	4712.38	1014.76	4713.25	1020	4712.18
1072	4726.18	1083	4725.98	1083.1	4725.78	1121	4724.28	1155	4722.98
1155.1	4723.48	1161	4723.58	1210	4724.18	1250.8	4725.21	1283.71	4726.42
1301.93	4728.28	1315.26	4728.78	1432.06	4728.68	1452.84	4728.39	1542.22	4726.99
1652.22	4726.08	1665.46	4726.12	1709.98	4725.28	1798.64	4724.85	1912.56	4725.57
1990.48	4725.98	2132.98	4725.62	2155.31	4726.38	2189.34	4726.1	2274.32	4726.29
2359.48	4729.38	2387.04	4726.68	2398.65	4725.18	2415.05	4727.1	2424.54	4724.41
2468.79	4724.28	2495.46	4718.19	2509.33	4715.28	2545.65	4714.42	2553.02	4713.6
2563.91	4715.78	2578.76	4720.17	2589.25	4721.28	2632.11	4721.86	2647.86	4726.54
2684.72	4743.48	2726.22	4744.69	2786.06	4745.88	2793.51	4743.03	2812.96	4732.41

2829.7 4730.38 2856.48 4729.53 2882.3 4724.88 2917.74 4725.91 2956.52 4726.03  
 3008.02 4725.58 3080.68 4726.67 3101.35 4727.88 3104.63 4729.66 3144.79 4729.88  
 3196.7 4729.28 3234.39 4728.91  
 #Mann= 3 , 0 , 0  
 130 .045 0 220 .035 0 1072 .045 0  
 #XS Ineff= 2 , 0  
 0 220 1072 0  
 Permanent Ineff=  
 F F  
 Bank Sta=220,1072  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8050 ,659,687,725  
 Node Last Edited Time=Apr/06/2005 12:41:00

#Sta/Elev= 80  
 0 4731.48 19.2 4725.08 167.5 4720.48 197.2 4715.28 371.2 4713.78  
 570.2 4712.58 577.2 4710.98 765.2 4710.48 795.2 4709.98 816.2 4710.78  
 820.2 4711.88 1040 4712.58 1085 4722.88 1096 4722.68 1096.1 4722.18  
 1128 4722.88 1160 4722.18 1160.1 4722.28 1230 4724.18 1237.2 4724.18  
 1241.15 4724.98 1250 4725.28 1250 4737.18 1300 4737.18 1350 4737.18  
 1400 4737.18 1410 4737.18 1420 4737.18 1440 4737.18 1440 4728.88  
 1469.48 4727.78 1526.66 4726.68 1560.89 4726.78 1600 4727.18 1600 4737.18  
 1700 4737.18 1800 4737.18 2000 4737.18 2150 4737.18 2150 4724.18  
 2153.99 4723.98 2175.57 4723.5 2199.59 4722.48 2220.44 4715.44 2228.47 4714.89  
 2235.76 4712.58 2254.65 4713.47 2269.29 4718.28 2278.85 4718.48 2289.67 4722.02  
 2317.06 4722.58 2331.15 4724.63 2337.46 4722.58 2363.9 4722 2380.88 4720.16  
 2411.96 4723.38 2442.43 4723 2459.37 4721.38 2489.38 4725.21 2519.37 4725.52  
 2530.82 4724.68 2561.33 4734.53 2598.43 4735.48 2611.03 4733.16 2625.87 4735.76  
 2659.62 4736.18 2698.44 4733.02 2714.27 4724.98 2728.25 4722.47 2734.53 4723.21  
 2742.73 4722.38 2783.18 4723.81 2813.22 4724.38 2865.24 4723.58 2958.33 4725.83  
 2965.57 4725.08 2986.11 4725.65 3034.78 4725.78 3111.39 4728.14 3131.82 4728.85  
 #Mann= 3 , 0 , 0  
 0 .045 0 167.5 .035 0 1085 .045 0  
 #XS Ineff= 2 , 0  
 0 1250 0 4737.18  
 Permanent Ineff=  
 F F  
 Bank Sta=167.5,1085  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8000 ,700,690,475  
 Node Last Edited Time=Feb/28/2005 13:34:30

#Sta/Elev= 61  
 0 4731.08 10.2 4731.38 275.2 4717.48 290.2 4713.98 453.2 4709.78  
 561.2 4710.18 866.2 4710.28 872.2 4708.38 909.2 4707.48 935.2 4708.08  
 1007.2 4708.48 1011.2 4711.88 1032.2 4714.18 1123.2 4715.98 1129.31 4715.34  
 1142.01 4713.18 1210.26 4713.51 1226.21 4714.48 1235 4714.58 1262 4720.28  
 1275 4720.08 1275.1 4719.58 1307 4720.28 1339 4719.58 1339.1 4720.08  
 1387 4715.98 1511.72 4716.28 1665.9 4716.54 1709.61 4716.78 1723.4 4720.07  
 1733.18 4716.98 1766.56 4717.18 1808.52 4718.14 1920.06 4717.98 1936.1 4717.55  
 1965.64 4714.78 2004.1 4718.48 2125.11 4718.3 2152.36 4719.68 2168 4720.74  
 2194.17 4719.88 2228 4721.18 2285.49 4721.4 2307.79 4721.88 2318 4718.65  
 2332.12 4722.68 2401.91 4723.68 2431.06 4722.62 2449.07 4723.28 2489.3 4722.43  
 2503.29 4719.58 2519.14 4721.08 2553.41 4720.47 2631.7 4722.28 2671.8 4722.65  
 2701.88 4721.38 2738.78 4722.38 2775.12 4722.35 2798.12 4724.28 2881.7 4724.69  
 2957.05 4724.98  
 #Mann= 3 , 0 , 0  
 0 .045 0 10.2 .035 0 1262 .045 0  
 #XS Ineff= 2 , 0  
 0 4731.38 0 4721.18  
 Permanent Ineff=  
 F F  
 Bank Sta=10.2,1262  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,7050 ,680,680,530  
Node Last Edited Time=Feb/28/2005 13:21:39  
#Sta/Elev= 48

0	4730.18	19	4729.38	56	4718.78	115	4715.28	126	4708.68
289	4707.18	296	4704.38	362	4703.28	384	4704.38	441	4706.18
735	4708.28	766	4718.18	871	4717.08	874.9	4716.96	906.59	4717.09
952.45	4716.38	1020.61	4717.03	1055.76	4717.95	1094.2	4717.72	1112.3	4718
1132.38	4715.48	1178.14	4715.23	1250.24	4716.06	1298.77	4716.02	1323	4716.38
1329	4717.38	1340	4717.18	1340.1	4716.68	1370	4717.68	1513	4719.98
1805	4717.98	1863	4718.28	1938	4720.08	1974	4720.08	2023	4720.18
2180	4720.68	2246	4721.48	2260	4721.48	2299.4	4722.28	2323.7	4722.28
2336.31	4720.18	2352.51	4722.49	2395.36	4721.9	2412.3	4717.88	2452.9	4719.78
2653.88	4720.88	2746.72	4721.94	2889.81	4723.85				

#Mann= 3 , 0 , 0

0	.045	0	115	.035	0	766	.045	0
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Bank Sta=115,766

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,7000 ,550,530,490  
Node Last Edited Time=Feb/28/2005 13:21:31

#Sta/Elev= 54

0	4726.58	23.1	4725.78	42.1	4716.48	65.1	4713.28	92.8	4701.01
118.1	4699.98	188.1	4700.18	192.6	4700.89	198.1	4702.78	491.1	4701.78
727.1	4702.08	747.1	4712.08	796.1	4713.08	826.67	4712.88	905.56	4713.97
1007.04	4714.58	1095.18	4714.79	1145.99	4714.1	1185.22	4714.08	1214.9	4714
1248.97	4714.28	1251.93	4713.99	1302.44	4714.6	1331.93	4715.48	1331.93	4727.18
1419.24	4727.18	1419.24	4714.77	1479.03	4714.91	1555.98	4714.34	1568.52	4714.48
1583.48	4716.28	1595.55	4715.09	1641.21	4714.56	1680.49	4715.03	1731.16	4714.66
1758.97	4714.38	1767.59	4715.08	1785.19	4716.43	1815.33	4714.54	1857.81	4714.45
1926.85	4715.28	1982.87	4715.47	2060.42	4718.67	2137.05	4719.91	2147.55	4717.82
2168.59	4720.08	2211.83	4719.25	2230.12	4714.92	2239.55	4716.66	2288.5	4716.45
2402.73	4716.68	2470.9	4717.47	2668.13	4718.54	2709.87	4719.04		

#Mann= 3 , 0 , 0

0	.045	0	65.1	.035	0	747.1	.045	0
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Bank Sta=65.1,747.1

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6950 ,630,665,670  
Node Last Edited Time=Feb/28/2005 13:21:25

#Sta/Elev= 53

0	4728.075	12.84	4727.775	37.84	4718.475	75.84	4713.475	142.44	4712.885
150.44	4712.675	161.84	4712.075	182.84	4699.875	300.84	4700.275	302.24	4698.345
305.84	4696.975	330.84	4696.975	367.84	4697.875	427.34	4698.355	579.84	4698.575
645.84	4699.875	660.84	4707.875	681.84	4713.475	756.84	4708.875	809.84	4709.875
840.84	4709.875	856.79	4709.255	877.66	4707.045	901.81	4706.435	933.68	4707.705
969.85	4709.175	1037.03	4709.775	1124.15	4710.565	1143.37	4710.395	1154.58	4710.275
1218.71	4709.875	1289.84	4709.215	1300	4709.175	1300	4727.175	1560	4727.175
1560	4711.475	1590.64	4711.675	1628.67	4712.675	1701.31	4712.595	1772.84	4713.265
1867.19	4714.075	1904.77	4715.575	2019.56	4717.075	2029.79	4715.575	2046.35	4717.165
2090.74	4716.575	2127.72	4715.275	2152.72	4714.175	2159.45	4713.025	2231.75	4713.575
2377.16	4714.275	2495.17	4715.175	2599.65	4716.18				

#Mann= 3 , 0 , 0

0	.045	0	161.8	.035	0	681.8	.045	0
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Bank Sta=161.8,681.8

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6900 ,400,400,360  
Node Last Edited Time=Feb/28/2005 13:41:22

#Sta/Elev= 51

0	4715.375	36.65	4711.845	48.62	4710.485	102.32	4711.875	146.32	4704.975
190.52	4710.375	198.72	4709.945	237.32	4694.975	338.32	4695.075	614.32	4697.775
719.62	4694.575	726.32	4694.275	790.32	4693.675	852.32	4693.275	853.52	4694.405
956.52	4696.875	1077.32	4704.575	1296.72	4709.375	1346.32	4707.575	1349.32	4708.015

1354.324707.775 1356.524706.995 1360.324706.045 1371.214704.635 1387.454704.385  
14004714.675 14004722.175 15004722.175 15504722.175 15604722.175  
16004722.175 16454722.175 16454708.575 1660.584708.475 1694.14711.145  
1726.064711.275 1739.844713.675 1769.894712.905 1867.664712.745 1886.684711.775  
1899.264709.475 1947.414709.085 1969.044709.735 1988.614713.505 2013.174711.975  
2027.044709.775 2132.444710.265 2204.324709.385 2266.824709.615 2326.324710.575  
2352.474710.275

#Mann= 3 , 0 , 0  
0 .045 0 198.72 .035 0 1077.32 .045 0  
#XS Ineff= 2 , 0  
0 1400 0 4722.18

Permanent Ineff=  
F T  
Bank Sta=198.72,1077.32  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6850 ,300,250,250  
BEGIN DESCRIPTION:

Downstream CLOMR  
END DESCRIPTION:  
Node Last Edited Time=Feb/28/2005 14:10:36

#Sta/Elev= 65  
7704719.975 8404717.975 9704715.975 10704713.975 12704711.975  
1287.064707.475 1304.374702.815 1314.034702.035 1326.24692.975 1403.644693.145  
1413.054694.675 1487.984693.935 1497.314694.555 1624.74695.075 1677.584694.835  
1701.014695.175 1807.624694.925 1842.784695.305 1909.454695.075 1926.14695.195  
1970.084696.275 2016.384696.105 2049.634696.695 2088.864696.175 2108.814694.865  
2156.344695.175 2165.734696.785 2191.844697.275 2217.324701.175 2233.214703.115  
2287.954703.275 2311.734704.225 2323.984704.965 2333.564703.575 23604703.875  
23604722.175 24004722.175 25004722.175 2541.44722.175 2541.444707.215  
2569.644707.875 2579.394709.075 2596.824716.685 2612.274723.075 2638.394722.655  
2665.044709.775 2693.964707.455 2714.94709.475 2777.234709.675 2815.644708.755  
2827.734707.575 2875.34705.585 2931.634706.715 3030.944707.075 3061.834707.295  
3079.994712.275 3110.084715.725 3134.124716.725 3139.674715.375 3159.214708.115  
3186.964707.575 3192.084706.155 3198.14707.925 3206.884707.375 3236.054708.285

#Mann= 3 , 0 , 0  
770 .045 0 1287.06 .035 0 1970.08 .045 0  
#XS Ineff= 2 , 0  
0 1287.06 4707.48 1970.08 0 4722.18

Permanent Ineff=  
F F  
Bank Sta=1287.06,1970.08  
Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 1 ,6817 ,68.1,68.1,68.1  
BEGIN DESCRIPTION:

Upstream cross-section of HWY 50 bridge  
END DESCRIPTION:  
Node Last Edited Time=Mar/14/2005 14:43:42

#Sta/Elev= 17  
1000 4711.5 1036 4694.6 1067 4693.3 1072 4691.5 1082 4690.6  
1120 4690.7 1182 4691.5 1200 4691.3 1244 4692.5 1260 4691.9  
1265 4693.1 1318 4693.4 1331 4694.1 1355 4693 1367 4693.4  
1401 4705.4 1401.1 4714.4

#Mann= 3 , -1 , 0  
1000 .08 0 1036 .03 0 1401 .05 0  
#XS Ineff= 2 , 0  
0 1000 4709.2 1401 0 4712.1

Permanent Ineff=  
F F  
Bank Sta=1000,1401  
Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 3 ,6749.5 , , ,

BEGIN DESCRIPTION:

HWY 50

END DESCRIPTION:

Node Last Edited Time=Mar/14/2005 14:42:55

Bridge Culvert--1,0,-1,-1, 0

Deck Dist Width WeirC Skew NumUp NumDn MinLoCord MaxHiCord MaxSubmerge Is\_Ogee  
0.01,68,2.7,0, 9, 9, , , 0.95, 0, 2,2,,

1000	1000	1003	1072	1159	1244	1331	1401	1401.1
4711.5	4711.5	4711.5	4712	4712.4	4713	4713.6	4714.4	4714.4
4709.9	4711.5	4708.2	4707.5	4707.9	4708.5	4709.1	4709.9	4714.4
1000	1000	1003	1072	1159	1244	1331	1401	1401.1
4711.5	4711.5	4711.5	4712	4712.4	4713	4713.6	4714.4	4714.4
4709.9	4711.5	4708.2	4707.5	4707.9	4708.5	4709.1	4709.9	4714.4

Pier Skew, UpSta & Num, DnSta & Num= ,1182, 2 ,1182, 2 , 0 , 0 , 0 , ,

20	20
0	4710
20	20
0	4710

BR Coef=-1 , 0 , 0 ,1.05, 0 , , ,0.8,0,,1,

WSPro= , , , , 1 , , , , 0 , , , , 0 , , , -1 , -1 , -1 , 0 , 0 , 0 , 0 , 0

BC Design= , , 0 , , 0 , , , , ,

Type RM Length L Ch R = 1 ,6749 ,45,49,40

BEGIN DESCRIPTION:

Downstream cross-section of HWY 50 bridge

END DESCRIPTION:

Node Last Edited Time=Mar/02/2005 13:18:51

#Sta/Elev= 17

1000	4711.5	1036	4694.6	1067	4693.3	1072	4691.5	1082	4690.6
1120	4690.7	1182	4691.5	1200	4691.3	1244	4692.5	1260	4691.9
1265	4693.1	1318	4693.4	1331	4694.1	1355	4693	1367	4693.4
1401	4705.4	1401.1	4714.4						

#Mann= 3 , -1 , 0

1000	.08	0	1036	.03	0	1401	.05	0
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#XS Ineff= 2 , 0

0	1000	4709.2	1401	0	4712.1
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Permanent Ineff=

F F

Bank Sta=1000,1401

Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 1 ,6700 ,255,304,330

Node Last Edited Time=Mar/02/2005 12:45:35

#Sta/Elev= 65

1000	4717	1027.3	4716.1	1067.5	4714.6	1101.4	4711.9	1127.9	4709.4
1151.4	4710.1	1175.4	4709.1	1186.9	4710.8	1213.1	4710.5	1246.3	4709.8
1257.9	4708.6	1277.6	4705	1299.3	4703.2	1314.9	4702	1341.7	4694.4
1366.3	4692.9	1379.7	4695.7	1392.4	4697.3	1418.2	4696.6	1445.9	4695.5
1476.3	4693.1	1503.3	4692.1	1520.3	4691.9	1524.9	4690.4	1635.3	4690.4
1644	4689.7	1689.3	4689.9	1689.3	4690.4	1697.1	4691.6	1721	4691.5
1731.8	4690	1739.4	4692.6	1756.9	4693.1	1790.6	4693	1818.4	4692.3
1834.2	4693.2	1840.1	4693.6	1861.3	4695.9	1887.3	4697.4	1923.1	4695.4
1952.8	4695.6	1997.1	4695.6	2043.4	4695.1	2099.2	4696.2	2154.3	4698.1
2213.3	4700.5	2268.3	4704.6	2319.4	4708.3	2366.2	4710.5	2403.2	4713.8
2424.2	4713.3	2439.2	4708.4	2453.7	4702.3	2464.8	4700.8	2471.9	4702.1
2480.6	4702.1	2486.9	4701	2509.2	4702.2	2527.8	4706.1	2542.4	4706.3
2550.3	4707.5	2551.9	4711	2572.2	4716.1	2589.4	4720.5	2605.5	4724.9

#Mann= 3 , -1 , 0

1000	.08	0	1392.4	.03	0	1861.3	.05	0
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#XS Ineff= 2 , 0

0	1299.3	4697.3	1887.3	0	4720
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Permanent Ineff=

T T

Bank Sta=1392.4,1861.3

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6600 ,208,207,205  
Node Last Edited Time=Mar/02/2005 12:45:07

#Sta/Elev= 75

1000	4714.5	1033.1	4713.7	1049.3	4713.3	1072.8	4710.9	1104.1	4710
1130.5	4709.9	1152	4709.8	1175.1	4701.9	1200.1	4698.8	1230.1	4696.9
1247.6	4695.6	1294.2	4695.6	1301.6	4695.6	1333.9	4695.4	1353.9	4696.3
1389.8	4695.5	1431.7	4694.3	1456.5	4693	1472.3	4692.1	1502.2	4692
1512.3	4689.4	1515.6	4688.8	1520.2	4689.5	1573	4689.2	1575.3	4688.7
1591.3	4689.3	1631.6	4689.3	1632.2	4688.8	1638.7	4688.3	1656	4688.4
1684	4688.9	1684.9	4689.4	1690.1	4690.6	1712.2	4690.6	1737.5	4690.2
1748.7	4689.3	1755	4691.8	1774.7	4691.5	1812.1	4690.9	1836.3	4690.9
1859.1	4693	1879.6	4692.3	1912.1	4692	1962.6	4692.1	1996.9	4692.9
2029.7	4692.3	2071.2	4691.7	2107.1	4691.7	2142.5	4690.5	2189.3	4690.2
2219.5	4691	2291.5	4688.5	2310.2	4691	2333.8	4691.5	2386.7	4692
2408.3	4693.5	2420.7	4696	2430.1	4699.6	2439.8	4701.8	2445	4701.8
2456	4700.1	2476.8	4700.3	2497.6	4708.5	2514.2	4709	2530.6	4707.5
2540.3	4708.5	2562.1	4713.1	2580.9	4717.5	2590.8	4718.4	2618.2	4719.3
2631	4714.3	2648.6	4706	2661.1	4702.2	2670.4	4703	2693.5	4703.7

#Mann= 3 , -1 , 0

1000	.08	0	1353.9	.03	0	2107.1	.05	0
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#XS Ineff= 2 , 0

0	1152	4709.8	2618.2	0	4719.3
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Permanent Ineff=

F F

Bank Sta=1152,2618.2

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6500 ,218,196,175  
Node Last Edited Time=Mar/02/2005 12:44:48

#Sta/Elev= 84

1000	4714.9	1029.5	4714.2	1049	4713.2	1068.3	4712.1	1080.2	4710.8
1099.5	4709.4	1127.2	4709.4	1139.1	4709.4	1152.2	4710	1163	4708.5
1192.5	4701.3	1221.9	4696.2	1248.7	4694.7	1275.6	4694.9	1308.2	4694.9
1348.8	4694	1376.2	4693.8	1382.8	4693.8	1387	4693.9	1412.3	4693.7
1444.5	4694.6	1471.6	4694.9	1491.8	4694.9	1513.6	4693.5	1540	4693.6
1556.8	4692.4	1575.3	4691.9	1601.4	4692.4	1610.7	4690.1	1647.4	4689.9
1654.2	4690.2	1657.2	4689	1657.2	4688.5	1739	4689	1772	4688
1782	4687.3	1802	4688	1820	4689	1838.5	4689	1847.7	4691.9
1877.9	4691.4	1911.8	4691	1947.9	4690.9	1958.7	4692.2	1991.7	4692.4
2007.4	4692.6	2019.6	4692.2	2063.7	4692.2	2110.2	4692.1	2154.5	4692.4
2226.2	4692.5	2270.2	4691.5	2309.8	4691.4	2354.3	4689.1	2390	4688.5
2403.1	4688.6	2417.4	4691.6	2439.4	4691.3	2457	4691.2	2470.5	4693.1
2487.7	4696.6	2497.2	4700	2505.3	4701.1	2508.9	4701.9	2514.9	4701.9
2524.3	4700.5	2537.7	4700.1	2554.4	4701.5	2560.6	4702.9	2572.9	4709.4
2580.9	4709.5	2594.4	4710.1	2607.3	4710.1	2618.4	4711.6	2642.1	4711.6
2656.2	4706.1	2675.3	4700.9	2685.9	4703.2	2698.3	4702.9	2740.1	4703.5
2773.8	4703.5	2803.5	4702.6	2820.9	4701.4	2844.6	4701.8		

#Mann= 3 , -1 , 0

1000	.08	0	1491.8	.03	0	2110.2	.05	0
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#XS Ineff= 2 , 0

0	1152.2	4710	2618.4	0	4711.6
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Permanent Ineff=

F F

Bank Sta=1152.2,2618.4

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6400 ,220,219,218  
Node Last Edited Time=Mar/02/2005 12:44:30

#Sta/Elev= 80

1000	4714.5	1029.9	4712.6	1046.2	4711.6	1069.2	4709.5	1083.9	4708.8
1114.5	4708	1129	4708.4	1135.5	4708.5	1141.8	4708	1156	4704.2
1174.2	4698.6	1200.4	4695.5	1279.1	4693	1325.8	4693.3	1364.3	4692.7

1396.4	4692.9	1427.2	4692.7	1462.8	4692.7	1517.8	4692.9	1563.3	4693.2
1591.9	4692.5	1631.2	4691.8	1664.7	4691.4	1693.5	4690.5	1708.1	4688.9
1708.1	4688	1790.2	4688	1823.1	4686.4	1839.7	4688.3	1864	4688.3
1876	4687.1	1897	4688.2	1919.4	4688.2	1922.7	4691.3	1952.1	4690.5
1997.1	4689.7	2021.8	4690.2	2029.4	4691.1	2058.4	4691	2095.1	4690.7
2141.7	4690.3	2208.5	4690.9	2247.1	4691.5	2278.7	4691.5	2363.9	4690.1
2401.4	4690.1	2435	4691.1	2468.1	4690.5	2483.2	4691.2	2496.1	4693.8
2514.6	4698.4	2519.6	4699.7	2540.7	4700.4	2549.6	4699.5	2558.4	4701.9
2563.8	4701.9	2575.6	4700.7	2600.9	4699.4	2615.7	4701.2	2630.6	4704.7
2643.4	4707.1	2666	4706.4	2692.4	4700.8	2700.6	4702.9	2740.1	4703
2756.4	4703.4	2786.6	4702.2	2801.8	4702.2	2832.3	4700.6	2857.1	4701.3
2872.1	4701.7	2914.7	4701.7	2969.8	4702	3026.5	4702.1	3077.3	4702.4
3128.4	4702.4	3179.9	4702.6	3228.2	4702.6	3251	4703.3	3287.3	4703.3

#Mann= 3 , -1 , 0  
1000 .08 0 1427.2 .03 0 2435 .05 0

#XS Ineff= 2 , 0  
0 1427.2 4692.7 2643.4 0 4707.1

Permanent Ineff=  
F F

Bank Sta=1427.2,2643.4  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 6300 , 215,219,224  
Node Last Edited Time=Mar/02/2005 12:44:02  
#Sta/Elev= 79

1000	4714.3	1028.6	4712.5	1058.7	4711.2	1076.6	4709.6	1097.6	4709.2
1106.5	4709.4	1121	4708.3	1139.1	4707.4	1143.7	4707.4	1165.3	4707.5
1184.8	4707.8	1210.8	4708.4	1231.6	4708.6	1262.7	4708.3	1300.9	4707.9
1336.3	4707.8	1375	4707.3	1408.7	4706.9	1430.6	4705.8	1446.8	4704.9
1468.1	4700.4	1489	4699.6	1516.6	4699.1	1535.4	4699.3	1566.8	4698.2
1573.5	4697.3	1589.6	4691.2	1594.2	4691.2	1603.4	4691.2	1627.3	4691.3
1657	4691.4	1684.4	4692.2	1704.5	4692.7	1720.1	4692.2	1731.4	4691.1
1742.3	4686.8	1742.3	4685.6	1824.4	4686.3	1857.3	4685.4	1858.8	4687.7
1883.1	4687.5	1884.3	4686.4	1893.4	4686.6	1895.2	4686	1915.5	4686.5
1915.7	4686.9	1984.2	4687.1	1989	4689.3	1998.4	4689.2	2023.9	4688.7
2050.8	4688.2	2075.5	4688.7	2096.9	4689.8	2128.2	4690.1	2143.2	4690.1
2184.4	4690.8	2232.4	4689.6	2255	4690.1	2291.4	4689.9	2333.6	4690.2
2391.4	4688.8	2453.8	4688.1	2465.4	4689.1	2485.8	4694	2492.9	4695.5
2514.8	4698.2	2532.5	4698.5	2550.9	4700.2	2562.5	4699.3	2571.1	4700.7
2576.5	4700.7	2592.6	4699.2	2602.4	4699.7	2620.7	4701.5	2630.5	4701.5
2650.6	4701.9	2669	4701.7	2709.4	4701.7	2718.3	4701.7		

#Mann= 3 , -1 , 0  
1000 .08 0 1704.5 .03 0 2184.4 .05 0

Bank Sta=1704.5,2184.4  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 6200 , 218,212,208  
Node Last Edited Time=Mar/02/2005 12:43:35  
#Sta/Elev= 83

1000	4719.7	1026.5	4717.7	1063.1	4714.2	1098.7	4712.1	1114.8	4709.2
1137.9	4708.2	1156.6	4706.9	1180.1	4706	1184.6	4707	1189.8	4707
1199.2	4706.7	1233.4	4705.8	1244.8	4705.8	1266.3	4707.8	1282.7	4712.7
1303.3	4716.5	1461.4	4708.6	1493.3	4707.1	1516.6	4706.9	1541.3	4705.6
1594.8	4704.8	1601.9	4704.2	1618.2	4693.3	1631.4	4690.4	1640.3	4690.4
1652.7	4688.6	1666.9	4687.5	1694.6	4688.1	1722.3	4688.4	1744.9	4687.6
1789.2	4687.4	1796.9	4686.1	1796.9	4684.9	1805	4684.6	1880	4685.6
1913	4684.4	1923.7	4686.9	1960.9	4686.3	1972.6	4685.5	2000	4684.8
2020	4685.5	2051	4685.5	2056.8	4687.5	2088.9	4687.5	2134.9	4687.7
2178.5	4688.1	2206.2	4688.9	2232.2	4689.5	2254.6	4689.7	2280.8	4690.3
2317.9	4689.7	2372.6	4688.6	2439	4688.3	2500.9	4687.6	2514.9	4689
2538.1	4692.7	2557.9	4696.8	2569.1	4698.7	2593	4691.8	2601.9	4687.9
2603.2	4697.3	2605.7	4700.8	2611.8	4700.8	2623.4	4699.3	2632	4698.7
2634.6	4697.4	2642.6	4697.4	2652.6	4700.5	2659	4700.8	2700.4	4700.6
2714.4	4700.4	2752	4699.3	2766.8	4698.7	2788	4698.2	2799.1	4697.9

2815.7	4698.7	2854.9	4698.5	2908.8	4698.9	2971.9	4699.6	3035.9	4699.5
3087.2	4700	3139.2	4700.1	3207.1	4700.1				
#Mann= 3 , -1 , 0									
1000	.08	0	1744.9	.03	0	2280.8	.05	0	
#XS Ineff= 2 , 0									
0	1303.3	4716.5	2569.1	0	4698.7				
Permanent Ineff=									
F F									
Bank Sta=1303.3,2569.1									
Exp/Cntr=0.3,0.1									

Type RM Length L Ch R = 1 , 6100 , 223,222,214  
Node Last Edited Time=Mar/02/2005 12:42:36

#Sta/Elev= 80									
1000	4722.3	1040.5	4720.8	1079.4	4717.8	1118.6	4714.9	1144.5	4712.3
1171	4709.9	1200.3	4705.7	1238.9	4705.8	1277.8	4705.4	1282.3	4705.4
1304.2	4705.6	1317.3	4705	1337.3	4705.4	1359.2	4705.3	1376.2	4705.5
1393.4	4705.8	1425.6	4705.2	1470.7	4705.1	1503.6	4704.5	1544.5	4704.6
1587.2	4704.1	1629.5	4704	1663.8	4703.3	1684.6	4703.8	1697.1	4701.8
1712.2	4694.1	1723.7	4687.5	1731.6	4687.5	1748.3	4687.6	1769.5	4687.9
1806.5	4687.1	1828.4	4686.7	1849.4	4686.9	1873.8	4686.3	1891.9	4687.5
1902.3	4685.7	1908.2	4685.3	1908.2	4683.6	1918	4683.4	1951	4684.1
2020.3	4685.3	2026.8	4685.8	2034.6	4686	2038.4	4685	2070	4683.8
2090	4685	2142.3	4685	2145.3	4686.1	2155.3	4686.9	2213.5	4687.2
2267.5	4686.8	2302.2	4688.1	2345.6	4688.5	2388	4688.9	2436.6	4689
2460.3	4686.7	2523.8	4686	2561.4	4687.4	2596	4689.1	2611.3	4691
2622.4	4695.5	2643.3	4697.8	2664.2	4697.7	2680.2	4698.9	2691.7	4698
2700	4700.1	2705.3	4700.1	2719.1	4698.5	2735.1	4697.4	2742.9	4699.1
2751	4699.6	2793.3	4698.7	2835.9	4698	2852.3	4696.9	2860.2	4698.5
2883.8	4699.3	2885.8	4699.9	2910.9	4700.3	2945.4	4701	2961.3	4700.9
#Mann= 3 , -1 , 0									
1000	.08	0	1849.4	.03	0	2388	.05	0	
Bank Sta=1849.4,2700									
Exp/Cntr=0.3,0.1									

Type RM Length L Ch R = 1 , 6000 , 209,209,209  
Node Last Edited Time=Mar/02/2005 12:42:17

#Sta/Elev= 71									
1000	4708.5	1030.5	4705.6	1044.6	4705.3	1046.5	4704.5	1087.8	4704.1
1113.2	4704.2	1118.3	4704.2	1125.8	4704.2	1137.4	4703.5	1166.7	4703.8
1194.4	4704.4	1207.9	4703.8	1235.2	4703.4	1283.2	4703.6	1331.5	4703.7
1346.3	4704.4	1385.5	4704.1	1420.9	4703.8	1462	4703.3	1506.3	4702.9
1529.2	4702.8	1539.5	4699.2	1561.8	4686.1	1567.9	4686.1	1594.2	4685.4
1637.4	4685.1	1683.9	4686	1727.8	4685.7	1761.9	4686.1	1783.2	4684.4
1804	4685.2	1817.2	4684.9	1819.3	4684.3	1819.3	4682.4	1828.3	4682.3
1861	4683	1898	4683.7	1979	4683.7	1999	4683	2013	4683.6
2024.4	4684.2	2041.4	4686	2054.2	4686.8	2079.8	4686.2	2134.1	4686.3
2177.6	4686.4	2214.1	4687.4	2251	4687.7	2280.6	4687.1	2320.3	4685.8
2358.5	4686.1	2409.6	4686.5	2423.8	4688.4	2441.4	4695.1	2456.4	4695.7
2485.8	4694.1	2509	4695	2521.5	4696.9	2526.7	4697.6	2532.5	4699.4
2538.9	4699.4	2546.4	4698.5	2568.7	4697.2	2581.8	4697.6	2626.4	4697
2668.6	4695.9	2682.3	4695.2	2697.4	4698	2732.9	4699.2	2795.2	4699.5
2838.6	4699.7								
#Mann= 3 , -1 , 0									
1000	.08	0	1761.9	.03	0	2251	.05	0	
#XS Ineff= 2 , 0									
0	1761.9	4686.1	2532.5	0	4699.4				
Permanent Ineff=									
F F									
Bank Sta=1761.9,2532.5									
Exp/Cntr=0.3,0.1									

Type RM Length L Ch R = 1 , 5900 , 290,321,360  
Node Last Edited Time=Mar/02/2005 12:41:51

#Sta/Elev= 87

1000	4709	1005.1	4708.8	1015.8	4703.3	1023.3	4703.2	1025	4702.7
1066.4	4702.6	1069.7	4703.1	1077.7	4702.2	1091.7	4702.1	1096.8	4702.1
1100.1	4701.5	1149.2	4700	1370.8	4704.2	1386.5	4703.9	1416	4702.9
1441.8	4702.7	1453.4	4704.7	1466.6	4705.8	1487.9	4705.2	1500.5	4702.9
1528.7	4701.9	1538.2	4702.7	1556.4	4693.2	1576.6	4685.1	1585.5	4685.1
1603.2	4685.6	1641	4683.9	1664.1	4682.4	1686.1	4683	1714.3	4683.7
1756.6	4684.2	1798.7	4684	1831.8	4684	1848.8	4682.8	1848.8	4682.1
1857.8	4682	1890.4	4682.8	1915.6	4682.7	1921.3	4682.1	1927.3	4682.7
1935.6	4682.1	1967.8	4682.5	2008	4682.6	2028.8	4681.3	2050.6	4682.2
2068	4682.2	2079.3	4682.2	2089.8	4685.3	2109	4685.2	2145.7	4684.5
2174.8	4685.3	2227.4	4684.4	2270.7	4685.3	2317.8	4685	2364.8	4685.8
2407.1	4686.4	2451.8	4687.5	2481.1	4692.2	2499.2	4696.2	2508.4	4697.8
2514.2	4697.8	2521.3	4696	2532.7	4696	2544.6	4694.8	2602.4	4695.5
2644.5	4694	2659.2	4692.9	2675.7	4693.7	2687.8	4694.3	2732.8	4694.8
2772.9	4695.8	2829.2	4696.4	2881.4	4697	2943.9	4697.7	2997	4698.4
3018.2	4698.4	3021.3	4698.2	3055	4698.2	3057.1	4698.7	3073	4700.4
3105.2	4701.4	3111.2	4697.1	3156.7	4695.7	3173.2	4692.8	3178.5	4693.6
3179.2	4700.8	3193.6	4701.5						

#Mann= 3 , -1 , 0

1000	.08	0	1831.8	.03	0	2364.8	.05	0
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#XS Ineff= 2 , 0

0	1466.6	4705.8	2508.4	0	4697.8
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Permanent Ineff=

F F

Bank Sta=1466.6,2508.4

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 5800 , 390,435,450

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#Sta/Elev= 76

1000	4706.1	1016.6	4703.7	1036.4	4701.7	1075.5	4701.6	1078.7	4702
1093	4701	1099	4701	1107.7	4700	1150.2	4698.9	1297	4704.8
1323.2	4702.7	1354.1	4701.3	1365.2	4700.5	1396.7	4701	1421.4	4701.4
1458.7	4700.4	1468.8	4701.6	1482.6	4700.6	1494.9	4701.3	1517.2	4700.8
1536.6	4691.6	1551.1	4684.9	1558.2	4684.9	1582.9	4683.8	1632.7	4681.5
1678	4682.6	1726	4683.3	1778.3	4682.9	1830.2	4683.4	1876.9	4683.4
1909.4	4683.4	1928.3	4683.4	1932	4681.4	1932	4680	1941	4679.9
1986.7	4680.5	2041.8	4681	2148	4681.4	2153.5	4682.6	2182.1	4682.8
2201.3	4682	2213.7	4681	2225.6	4681.8	2235.2	4682.7	2252.5	4683.3
2286	4682.8	2314.8	4683.3	2348.8	4683.9	2394	4683.8	2434.1	4683.8
2455.5	4685.2	2473.1	4694.3	2479.1	4694.2	2485.8	4695	2491.4	4695
2500.4	4693.4	2517.3	4693.3	2522.3	4692.3	2534	4692.5	2579.9	4693
2620.7	4692	2643	4691.5	2648.9	4690.7	2658.2	4690.7	2659.5	4689.1
2784.9	4689.1	2786.3	4690.9	2834.6	4691.1	2879.7	4691.4	2932.7	4691.7
2976.6	4693	3020.2	4693	3052.5	4693.8	3067.7	4694.4	3075.6	4695.2
3091.6	4696.3								

#Mann= 3 , -1 , 0

1000	.08	0	1778.3	.03	0	2348.8	.05	0
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#XS Ineff= 2 , 0

0	1830.2	4683.4	2485.8	0	4695
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Permanent Ineff=

F F

Bank Sta=1830.2,2485.8

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 5700 , 270,276,270

Node Last Edited Time=Mar/03/2005 08:47:50

#Sta/Elev= 78

1000	4716.8	1052.4	4716.4	1067.6	4714.3	1234.7	4710.7	1342.4	4709.9
1441.4	4706.5	1508.5	4705.9	1523	4701.9	1529.7	4701.9	1538.1	4700.1
1562	4699.8	1585.3	4699.2	1587.7	4699.3	1593.2	4699.9	1613.4	4698.1
1619.7	4698.1	1632.4	4697	1646.6	4697.6	1664.3	4695.8	1696.2	4695.2
1715.1	4695.2	1728.7	4700.3	1746.8	4695.8	1795.4	4694.3	1816.9	4697.3

1846.6	4696.5	1882.8	4696.2	1898.5	4698.1	1918.5	4698.7	1941.9	4697.8
1967.1	4697.1	1990.7	4682.2	1997.3	4682.2	2029.2	4680.7	2087.2	4680.2
2158.2	4681.4	2222.6	4680.8	2277.4	4682.6	2321.4	4683.1	2365.8	4683.7
2406	4682.4	2408.8	4682.1	2501.2	4681.5	2525.8	4680.4	2530	4679.1
2530	4677.9	2575.7	4678.6	2630.8	4678.5	2736	4679.1	2744	4680.6
2762.1	4680.5	2765.7	4679.6	2797.8	4679.6	2823	4678.9	2839.6	4680
2876.3	4682.6	2911.4	4686.9	2920.4	4690.3	2924.7	4689.9	2932.7	4691.1
2937	4691.1	2941.9	4691.1	2954.7	4691	2967.2	4690	2979.1	4693.4
2984.5	4694.3	2999.6	4694.6	3009	4693.7	3016.8	4695.6	3025.4	4695.9
3057	4696.6	3086.3	4696.7	3098.8	4696.6	3106.7	4695.9	3129.7	4695.2
3152	4691.9	3175.7	4688.4	3212.8	4688.5				

#Mann= 2 , -1 , 0  
1000 .08 0 2839.6 .05 0  
Levee=-1,1000,4720,-1,3212.8,4710,,  
#XS Ineff= 2 , 0  
0 2365.8 4683.7 3086.3 0 4696.7  
Permanent Ineff=  
F F  
Bank Sta=2365.8,3086.3  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5600 ,340,335,335  
Node Last Edited Time=Mar/03/2005 08:47:39  
#Sta/Elev= 76

1000	4712.3	1025.7	4710.8	1061.2	4710.2	1121.2	4708.9	1156	4707.7
1174.2	4705.5	1208.2	4706.1	1243.4	4705.8	1264.7	4703.2	1280	4696.5
1302.5	4697.1	1326	4696.6	1329	4696.8	1366.2	4696.1	1400.4	4694.8
1447.3	4695.5	1502.7	4695	1534	4693.8	1579.8	4692.7	1620.8	4692.6
1656.7	4693	1687	4693.6	1694.8	4690.7	1716.3	4680.6	1728.6	4680.6
1785.1	4679.7	1826.3	4679.1	1870.9	4679.4	1915.5	4680.3	1951	4680.5
2005.6	4681.7	2053.4	4681.3	2100.8	4681.1	2161.9	4681	2182.3	4681.1
2212.5	4680.2	2252.9	4679.9	2301.3	4679.9	2336.3	4680.2	2344.7	4678.5
2344.7	4676.9	2368.4	4677.8	2390.4	4677.7	2397.1	4677.4	2445.5	4677.6
2462.4	4677.2	2471.3	4677.6	2552.5	4677.7	2574	4676.8	2591.9	4677.1
2603.2	4683.7	2615.8	4687.4	2620.9	4687.5	2626.4	4689	2632	4689
2641.3	4688	2653.2	4688	2663.5	4686.8	2679.2	4690.9	2705	4691.4
2714.9	4690.7	2732.6	4694.5	2752.4	4702.7	2764.7	4703.4	2788	4705.3
2799.8	4705.9	2824.1	4706.7	2837.5	4706.7	2848.6	4704.7	2876	4696.8
2899.1	4693.1	2921.3	4693.9	2946.5	4693.4	2966.6	4691.6	3007.2	4691.1
3030.1	4690.6								

#Mann= 3 , -1 , 0  
1000 .08 0 2182.3 .03 0 2603.2 .05 0  
Levee=-1,1730,4700,-1,3030.1,4700,,  
#XS Ineff= 2 , 0  
0 2005.6 4681.7 2626.4 0 4689  
Permanent Ineff=  
F F  
Bank Sta=2005.6,2626.4  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5500 ,240,329,340  
Node Last Edited Time=Mar/03/2005 08:47:25  
#Sta/Elev= 76

1000	4737.8	1021.8	4736.8	1047.1	4730.9	1062.5	4734.2	1080.6	4731.8
1096.4	4726	1136.9	4725.5	1161.8	4726.5	1178.2	4717.4	1199.6	4708.3
1233.9	4707.4	1283.8	4705.7	1335.9	4703.7	1390.4	4701.9	1452.3	4699.7
1521.4	4697.1	1574.1	4695.1	1612.9	4693.4	1639.9	4693.7	1662.8	4693
1695.9	4692.4	1747.8	4690.9	1802.8	4690.1	1860.1	4689.9	1910.9	4689.3
1969.8	4688.5	2015.7	4687.9	2030.3	4687.9	2044.8	4681.7	2061.6	4678.4
2071.6	4678.4	2115.7	4677.5	2188.7	4677.4	2259.3	4678.3	2314.9	4678.3
2372.1	4678.2	2412.5	4678.7	2462.2	4678.4	2509.9	4677.7	2557.9	4678.1
2577.3	4678	2590.9	4678.3	2607.1	4677.2	2647.2	4677.8	2676.4	4677.8
2688.7	4676.9	2706.5	4677.1	2713.5	4675.7	2713.5	4675.1	2750.3	4675.2
2772.3	4675.2	2850.3	4675.7	2861	4680.3	2874.5	4684.8	2883.7	4685.2

2888.9	4686.7	2895	4686.7	2906.4	4684.9	2914.4	4686.1	2920.8	4685.8
2925.4	4684.4	2941	4686	2969	4685.8	3011.3	4685.8	3042.5	4686
3138.1	4686.5	3193.2	4687	3251.2	4687.1	3310.4	4687.6	3380.4	4687.3
3443	4687.6	3505.6	4687.9	3572.1	4688.2	3631.1	4688.6	3681	4689.8
3697.2	4689.9								

#Mann= 3 , -1 , 0  
 1000 .08 0 2509.9 .03 0 2888.9 .05 0  
 Levee=-1,2080,4720,-1,3697.2,4720,,  
 Bank Sta=2509.9,2874.5  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5400 ,280,330,330  
 Node Last Edited Time=Mar/03/2005 08:47:07  
 #Sta/Elev= 82

1000	4720.5	1019.5	4720.1	1053.5	4717.7	1106.3	4716.2	1166.4	4714.6
1214.3	4713	1266.4	4711.8	1326.4	4710.6	1375.1	4709.1	1407.9	4707.8
1450.4	4707	1474.9	4705.8	1517.3	4704.4	1567	4702.7	1607.9	4700.9
1645.8	4699.4	1684.3	4697.8	1742.5	4696.5	1784.7	4693.9	1838	4691.6
1862.1	4692.5	1885	4691.6	1905.2	4691.6	1952.7	4690.6	1995.4	4690.3
2035.5	4690.3	2039.2	4689.7	2088.5	4689	2128.2	4689.3	2187.1	4688.3
2234.6	4688.3	2270	4686.8	2290.6	4685.2	2306.1	4677.8	2311.7	4678.3
2338.2	4678.6	2434.9	4678.4	2561.7	4676.3	2611.7	4676	2652.8	4676.9
2703.1	4677.4	2736.6	4677.6	2776.2	4676.8	2803.6	4677.2	2835.9	4676.4
2851.9	4677.1	2866.1	4677.5	2886.7	4674.8	2923.5	4674.5	2935.7	4675.8
2936.7	4674.2	2969	4673.8	3015.8	4674.8	3035.2	4678	3046.5	4681.8
3052.3	4683.3	3058.1	4684.7	3063.4	4684.7	3069.9	4682.8	3085.4	4683.1
3099.5	4680.8	3105.1	4680.8	3108.5	4691.8	3134.7	4691.3	3149.6	4691.2
3168.2	4695.3	3186.6	4702.4	3201.3	4703	3223.5	4703.5	3234.8	4704.1
3260.7	4704.7	3272.5	4704.6	3293.4	4698.5	3314.6	4691.9	3333.6	4687.6
3350.7	4689.2	3376.3	4689.2	3397.8	4687.7	3421.7	4685.2	3441.2	4685.8
3461.3	4686	3468.7	4685.3						

#Mann= 3 , -1 , 0  
 1000 .08 0 2611.7 .03 0 3035.2 .05 0  
 Levee=-1,2310,4720,-1,3468.7,4700,,  
 #XS Ineff= 2 , 0  
 0 2866.1 4677.5 3260.7 0 4704.7  
 Permanent Ineff=  
 F F  
 Bank Sta=2866.1,3260.7  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5300 ,295,280,270  
 Node Last Edited Time=Mar/03/2005 08:46:53  
 #Sta/Elev= 93

1000	4718.9	1051.5	4717.5	1115	4715.7	1177.6	4714.1	1244.1	4711.9
1306.4	4710.3	1371.5	4707.6	1428.9	4706.7	1460.7	4705.8	1508.4	4705.5
1557.3	4704.9	1599.7	4703.3	1637.1	4701.8	1677.8	4699.4	1735	4695.4
1784.7	4692.7	1841.3	4690.2	1865.1	4690.6	1888	4690.1	1943.6	4689.5
1998	4688.6	2056.1	4688	2111.6	4687.6	2137.9	4687.6	2161.2	4688.2
2205.8	4688.4	2253.9	4687.9	2291.9	4688.5	2324.4	4678.3	2338.1	4678.3
2361.4	4676.8	2409	4678.5	2417	4675.5	2521.6	4675.5	2594.1	4675.7
2641.5	4675.7	2662.5	4674.4	2671	4675.2	2702.8	4676.1	2734.2	4676.9
2758.8	4672.7	2795.6	4672.5	2807.8	4674.9	2808.8	4672.6	2841.1	4672.2
2854.8	4672.9	2902.2	4672.4	2912	4672.7	2923.2	4678.1	2933.2	4679.3
2962.9	4679.2	2977.7	4679.6	3005.5	4681.5	3025.3	4678.1	3036.9	4680
3043.8	4682	3050.7	4682	3062	4680.2	3070.6	4680.2	3078.4	4680
3091.6	4677.9	3094.3	4695.2	3142.2	4693.9	3180.1	4692.9	3206	4692.4
3219.8	4691.2	3237.1	4688.4	3264.1	4688.6	3285.6	4683.7	3299.4	4680.9
3311	4682	3328.5	4681.3	3370.2	4681.9	3408.8	4681.2	3444.2	4681.7
3476.9	4681.7	3512.4	4680.4	3525	4680.5	3528.8	4679.1	3548.7	4679.7
3573.2	4680.6	3603.9	4681.7	3636.9	4682.7	3680.9	4683.7	3711.2	4684.7
3753.9	4684.7	3798.7	4685.2	3834.6	4686	3879.5	4685.9	3925.3	4686.2
3964.1	4685.9	3994.7	4686.9	4002.1	4686.8				

#Mann= 3 , -1 , 0

1000 .08 0 2409 .03 0 2923.2 .05 0  
 Levee=-1,2331.6,4720,-1,3107.7,4720,,  
 Bank Sta=2409,3005.5  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5200 ,380,375,350  
 Node Last Edited Time=Mar/03/2005 08:46:44  
 #Sta/Elev= 83

1000	4719.3	1022.3	4720	1027.1	4720.6	1051.2	4719	1098.2	4717.6
1161	4716.3	1221.8	4715.3	1283.4	4714.7	1327.8	4713.4	1367.8	4711.8
1379.6	4710.7	1404.6	4706.6	1411.6	4705.5	1434.8	4705.6	1460.9	4705.2
1494.7	4702.7	1540.7	4698.6	1600.5	4693.1	1660.5	4689	1722.8	4687.7
1777.3	4687.3	1841	4686.5	1865	4687.2	1888.4	4686.4	1912.9	4686.5
1972.5	4686.3	2027.6	4686.6	2064.6	4686.4	2078.1	4686.2	2134.1	4684.5
2140.1	4685.3	2168.6	4685.6	2195.1	4692.4	2203.9	4688.4	2231.1	4685.2
2253.9	4684.8	2282	4678.5	2301.9	4678.6	2312.4	4675.2	2327.5	4673.9
2377.3	4674.3	2432.4	4674.5	2487.3	4673.8	2535.1	4674.1	2575.8	4674.6
2592.9	4674.3	2605.7	4671.5	2642.5	4671.3	2654.7	4672.7	2658.1	4671.3
2690.4	4671.1	2729.8	4671.5	2738.1	4674.5	2802.3	4674.5	2810.9	4677.9
2850.6	4678.6	2892	4679.3	2934.9	4678	2954	4679	2964.4	4678.6
2967.7	4680	2978.7	4680	2990.4	4678.6	2999.7	4678.4	3011.2	4677.2
3028.6	4682.4	3085.4	4683.4	3092.8	4681.4	3134.2	4679.2	3153.9	4677.9
3180.7	4677.9	3215.2	4678.9	3260.8	4679.3	3312	4679.2	3356.3	4679.1
3406	4678.9	3455.9	4679.4	3489.7	4679.9	3503.1	4681.3	3513.5	4681.3
3516.2	4681	3538.7	4681.1	3556.4	4681.1				

#Mann= 3 , -1 , 0  
 1000 .08 0 2432.4 .03 0 2810.9 .05 0  
 Levee=-1,2320,4720,-1,3010.4,4720,,  
 Bank Sta=2575.8,2810.9  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5100 ,280,256,205  
 Node Last Edited Time=Mar/02/2005 12:22:13  
 #Sta/Elev= 86

1000	4711.3	1011.8	4711.9	1027.4	4712.8	1071.2	4711.8	1111.5	4710.8
1166.8	4710.4	1212.2	4708.9	1252.5	4707.3	1309.7	4697.3	1350.3	4695.7
1394.3	4694.3	1409.9	4694.5	1440.6	4693.6	1442.6	4693.6	1482.4	4691.2
1530.9	4688.2	1588.3	4686.2	1636.2	4686	1686	4685	1736.6	4684.3
1802.7	4683.9	1823.4	4683.4	1848.4	4684.3	1869.6	4683.6	1910.5	4682.9
1965.3	4681.2	2017.8	4680.8	2072.1	4680.5	2129.4	4680	2183.5	4680.2
2201.4	4679.6	2223.5	4672	2265.7	4671.7	2315.8	4673	2350.2	4673.1
2365.2	4672.1	2371.3	4670.6	2371.3	4669.8	2439.6	4671	2449.6	4670.3
2469.6	4670.8	2516.2	4670.6	2532.9	4672.4	2544.6	4673.6	2590.3	4673.6
2628.6	4673.6	2739.6	4678	2768.7	4678.4	2826.6	4677.7	2858.4	4678.8
2866.8	4677.4	2873.2	4678.3	2877.9	4678.3	2892.9	4677.2	2900.4	4677.6
2905.3	4677.6	2919.7	4678	2926.1	4678.4	2931.3	4678.4	2942.2	4677.5
2962.3	4678.6	2977.3	4679.1	2996.3	4675.4	3004.9	4677.9	3046.7	4678.2
3086.6	4677.4	3098.7	4676.1	3126.2	4678.1	3140.6	4679.1	3148.5	4678.6
3194.5	4678.9	3243.7	4679	3295.5	4680	3348.2	4680.5	3399.1	4680.9
3427.5	4681.9	3501.6	4682.1	3557	4682.6	3616.4	4683.2	3679.1	4683.8
3741.1	4683.7	3801.5	4684	3862.8	4684.2	3909	4684.1	3934.5	4684.2
3959.5	4684.8								

#Mann= 3 , -1 , 0  
 1000 .08 0 2223.5 .03 0 2739.6 .05 0  
 Levee=-1,2235,4700,-1,2930,4700,,  
 Bank Sta=2350.2,2739.6  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5000 ,264,262,200  
 Node Last Edited Time=Mar/03/2005 08:46:31  
 #Sta/Elev= 60

1000	4706.9	1046.2	4707	1104.1	4706.4	1153.6	4705.2	1196.2	4702.6
1233.4	4699.5	1275	4695.6	1325.2	4690.7	1360.7	4687.1	1384.9	4685.6
1400.4	4685.6	1422	4684.7	1468.8	4683.5	1525.3	4683.2	1581	4682.5

1642	4682.3	1685.7	4682	1737.1	4681.5	1786.6	4681.3	1816.5	4682
1838.3	4682.5	1860.9	4681.9	1881.9	4681.8	1931.8	4681.3	1983.9	4680.8
2033.3	4679.8	2060	4677.3	2085.1	4674.4	2094.5	4674.4	2110.1	4671.9
2131.6	4671.3	2154.2	4671	2159.6	4668.8	2370.8	4668.8	2398.9	4669.8
2416.6	4670.2	2436.6	4672	2465	4672	2488.5	4672.3	2503.6	4672.3
2518.9	4672.3	2597	4672.3	2610.9	4677.7	2642.9	4677.8	2691.5	4678.1
2733.1	4677.9	2782.5	4677.2	2793.8	4676.2	2799.7	4677.1	2804.4	4677.1
2817	4676.3	2826.3	4676.8	2830.3	4676.8	2837.7	4676.5	2873.8	4676.6
2910.4	4676.4	2940.8	4675.4	2966.1	4677.7	3008.6	4678.4	3044.8	4677.6

#Mann= 3 , -1 , 0  
 1000 .08 0 2110.1 .03 0 2610.9 .05 0

Levee=-1,2110,4700,-1,2880,4700,,

#XS Ineff= 2 , 0  
 0 2094.5 2691.5 0 4678.1

Permanent Ineff=  
 F F  
 Bank Sta=2094.5,2691.5  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,4900 ,27,27,27

BEGIN DESCRIPTION:

Downstream LOMR

END DESCRIPTION:

Node Last Edited Time=Mar/02/2005 11:51:17

#Sta/Elev= 90

1000	4702.1	1043.3	4701.8	1095.8	4700.9	1146.6	4700.3	1210.5	4698.9
1248.3	4699.2	1271.6	4697.9	1277.7	4699	1320.5	4700.3	1357.3	4700.3
1457.8	4693.2	1518.6	4691.7	1571.6	4690.5	1624.1	4689.4	1671	4687.4
1714.3	4685.6	1765.7	4684.8	1799.8	4683.5	1817.3	4682.5	1819.8	4682.3
1836.2	4682.3	1854	4681.5	1855.5	4682	1885.6	4682.6	1928.6	4682
1966.2	4682.1	2010.2	4681.3	2047.5	4680.7	2084.7	4681.1	2143.4	4680.9
2188.3	4680.7	2232.6	4680.2	2247.2	4679.5	2250	4679.4	2273.1	4680.3
2294.9	4680.2	2324.6	4681.2	2371.1	4682.8	2400.9	4683.6	2437.2	4684.1
2469.6	4682.7	2495.3	4672.1	2502.7	4672.1	2508.7	4667.4	2528	4667.2
2568	4667.4	2618	4667	2655.7	4667.4	2663.6	4669.3	2711.3	4669.4
2754.8	4669.5	2810.8	4669.3	2815	4670	2832.3	4670	2866.5	4670
2888.9	4670	2907	4670	2925.6	4670	2938.5	4670	2951.7	4670
2990	4670	3014.1	4679.3	3053.4	4678.3	3098.2	4677.6	3169.5	4676.6
3184.2	4675.9	3191.2	4676.8	3196.7	4676.8	3208.7	4676.4	3216.8	4676.8
3221.4	4676.8	3239	4676.6	3281.1	4676.5	3343.8	4676.6	3373.5	4676.2
3395.7	4678.7	3432.5	4678.9	3467.1	4678.2	3478.9	4677.3	3505.3	4680.1
3550.2	4681	3616.5	4682.2	3668.4	4683.9	3706.1	4685.8	3788.8	4687
3840.3	4687.8	3866.2	4688.2	3880.8	4687.8	3902.1	4687.5	3920.7	4687.6

#Mann= 3 , -1 , 0  
 1000 .08 0 2495.3 .03 0 3014.1 .05 0

Bank Sta=2495.3,3014.1

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,4875 ,81,81,81

Node Last Edited Time=Mar/30/2005 10:41:08

#Sta/Elev= 56

1000	4685.2	1002	4684.5	1021	4683.6	1046	4671.9	1055	4671.5
1069	4667.3	1101	4667.1	1188	4666.1	1194	4666.4	1483	4666.4
1487	4680.2	1617	4678.8	1617	4695	1623	4695	1623	4678.8
1661	4677.7	1661	4695	1667	4695	1667	4677.7	1714	4677.2
1714	4695	1720	4695	1720	4677.2	1757	4677.3	1779	4677.2
1779	4695	1785	4695	1785	4677.2	1820	4676.9	1820	4695
1826	4695	1826	4676.9	1862	4677.1	1862	4695	1868	4695
1868	4677.1	1903	4677.2	1903	4695	1909	4695	1909	4677.2
1928	4677.2	1943	4678	1943	4695	1949	4695	1949	4679.3
1985	4679.5	1985	4695	1991	4695	1991	4679.5	2026	4678.7
2026	4695	2032	4695	2032	4678.7	2035	4678	2062	4681
2062	4695								

#Mann= 3 , -1 , 0



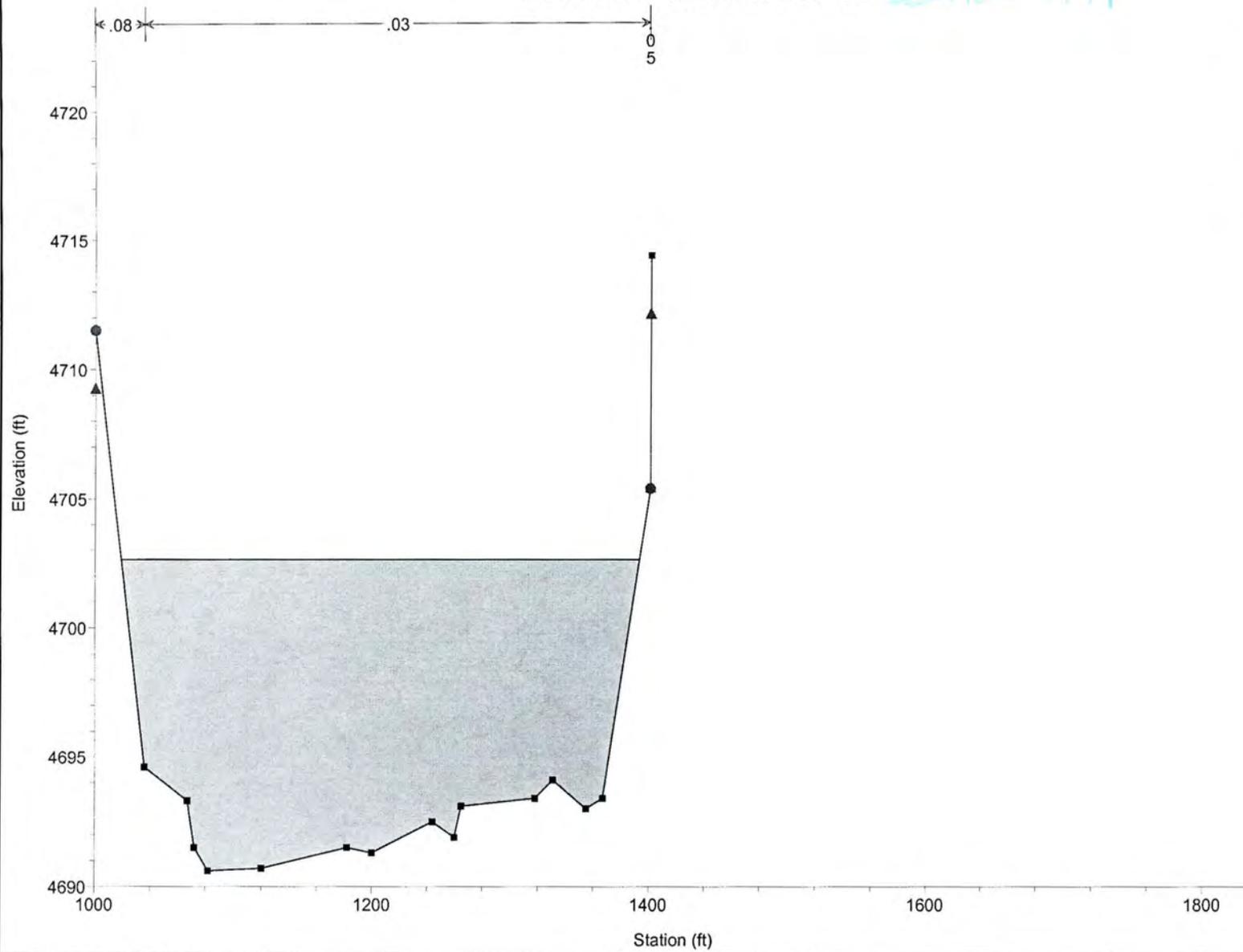
#Mann= 3 , -1 , 0  
1000 .08 0 1021 .03 0 1487 .05 0  
Bank Sta=1021,1487  
Exp/Cntr=0.3,0.1

Chan Stop Cuts=-1  
Use User Specified Reach Order=0  
User Specified Reach Order=Fountain Creek ,Reach1

Fountain Crk Existing Conditions 5-5-05 Plan: Plan 05 05/12/2005

Downstream cross-section of HWY 50 bridge

SECTION 6747



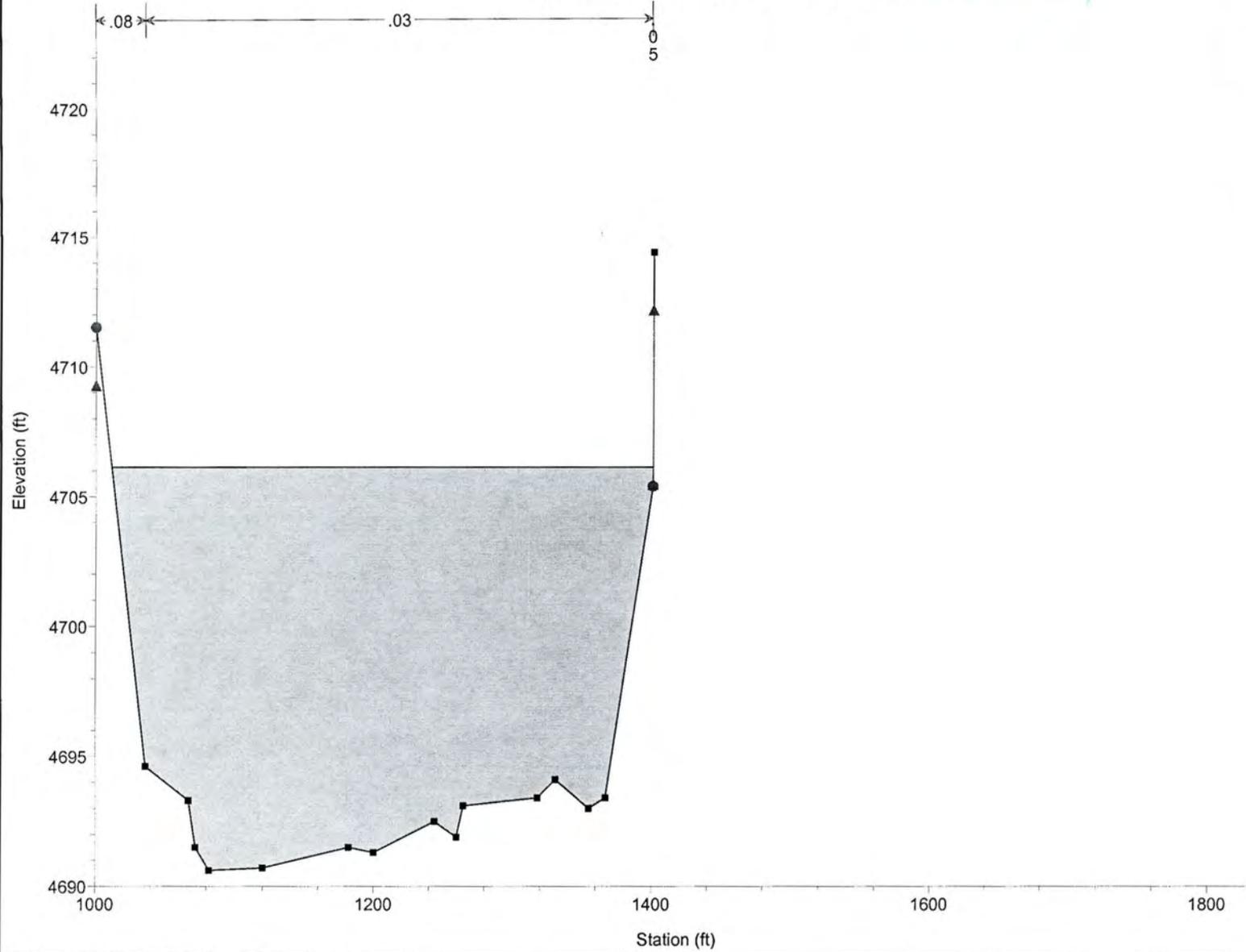
Legend	
WS PF 1	■
Ground	▲
Ineff	●
Bank Sta	●

1 in Horiz. = 110 ft 1 in Vert. = 6 ft

Fountain Crk Existing Conditions 5-5-05 Plan: Plan 05 05/12/2005

Upstream cross-section of HWY 50 bridge

SECTION 6817



Legend	
WS PF 1	■
Ground	▲
Ineff	●
Bank Sta	●

1 in Horiz. = 110 ft 1 in Vert. = 6 ft

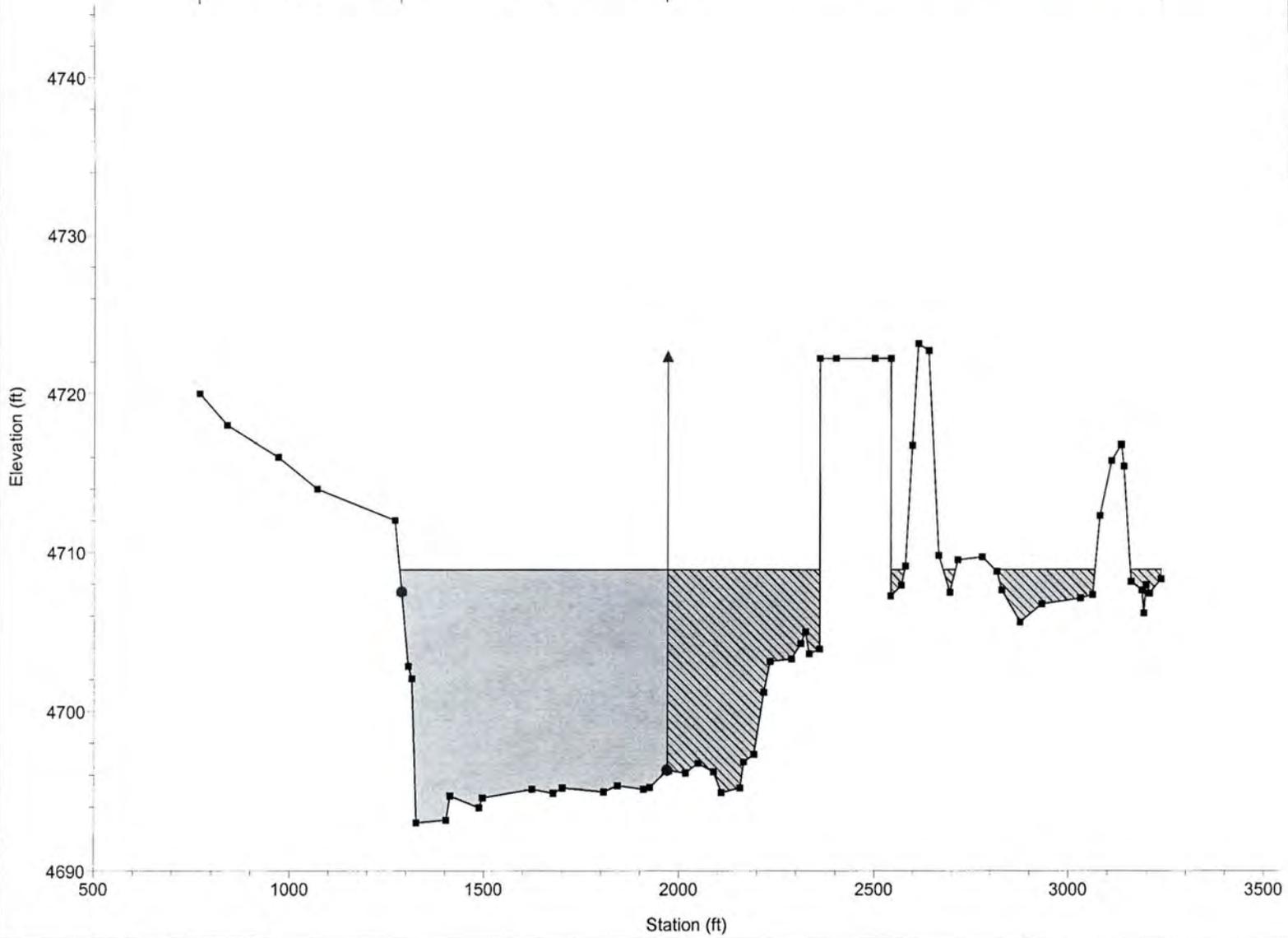
Fountain Crk Existing Conditions 5-5-05 Plan: Plan 05 05/12/2005

Downstream CLOMR

SECTION 6850



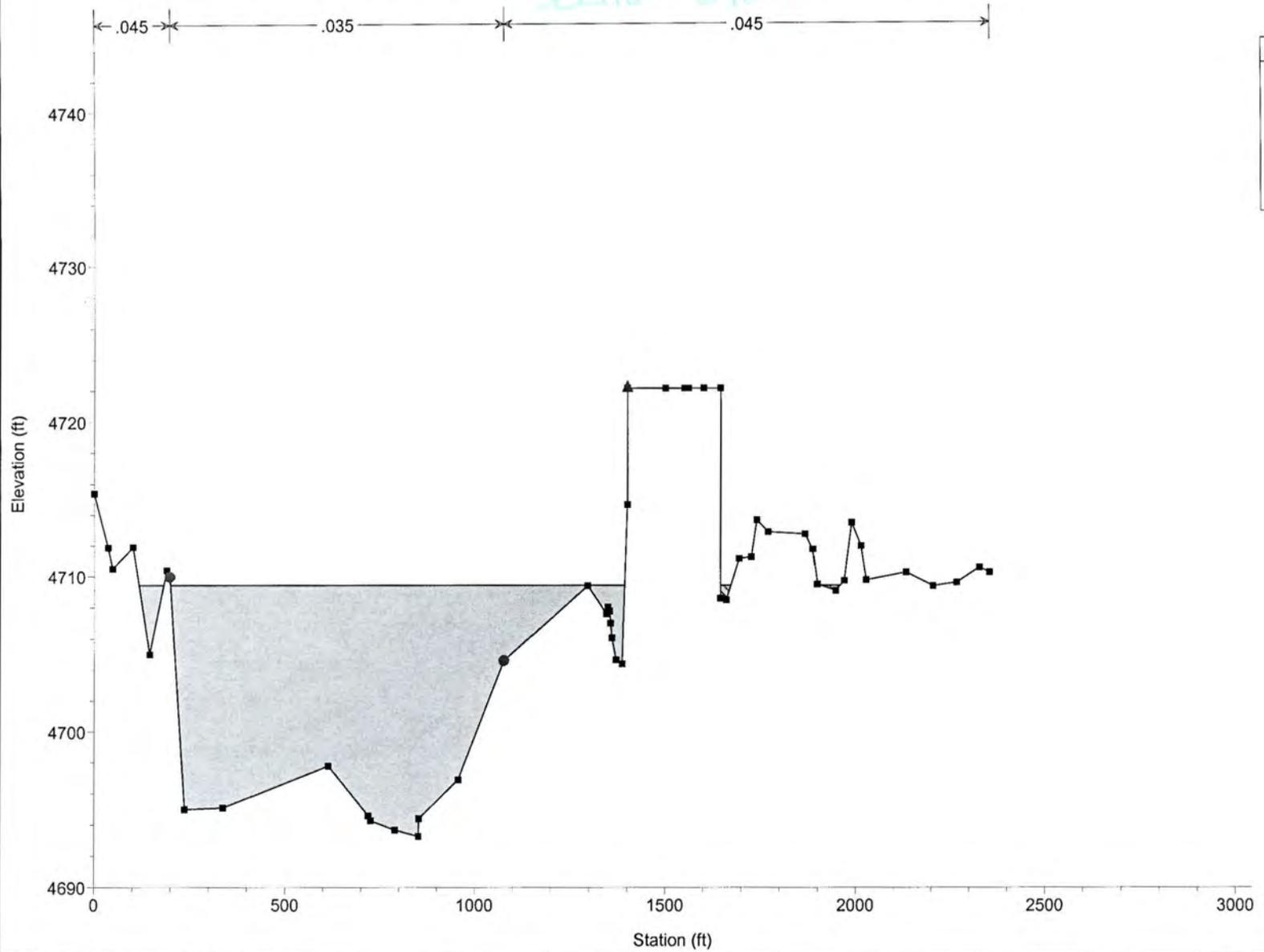
Legend	
—■—	WS PF 1
—▲—	Ground
—●—	Ineff
●	Bank Sta



1 in Horiz. = 400 ft 1 in Vert. = 10 ft

Fountain Crk Existing Conditions 5-5-05 Plan: Plan 05 05/12/2005

SECTION 6900

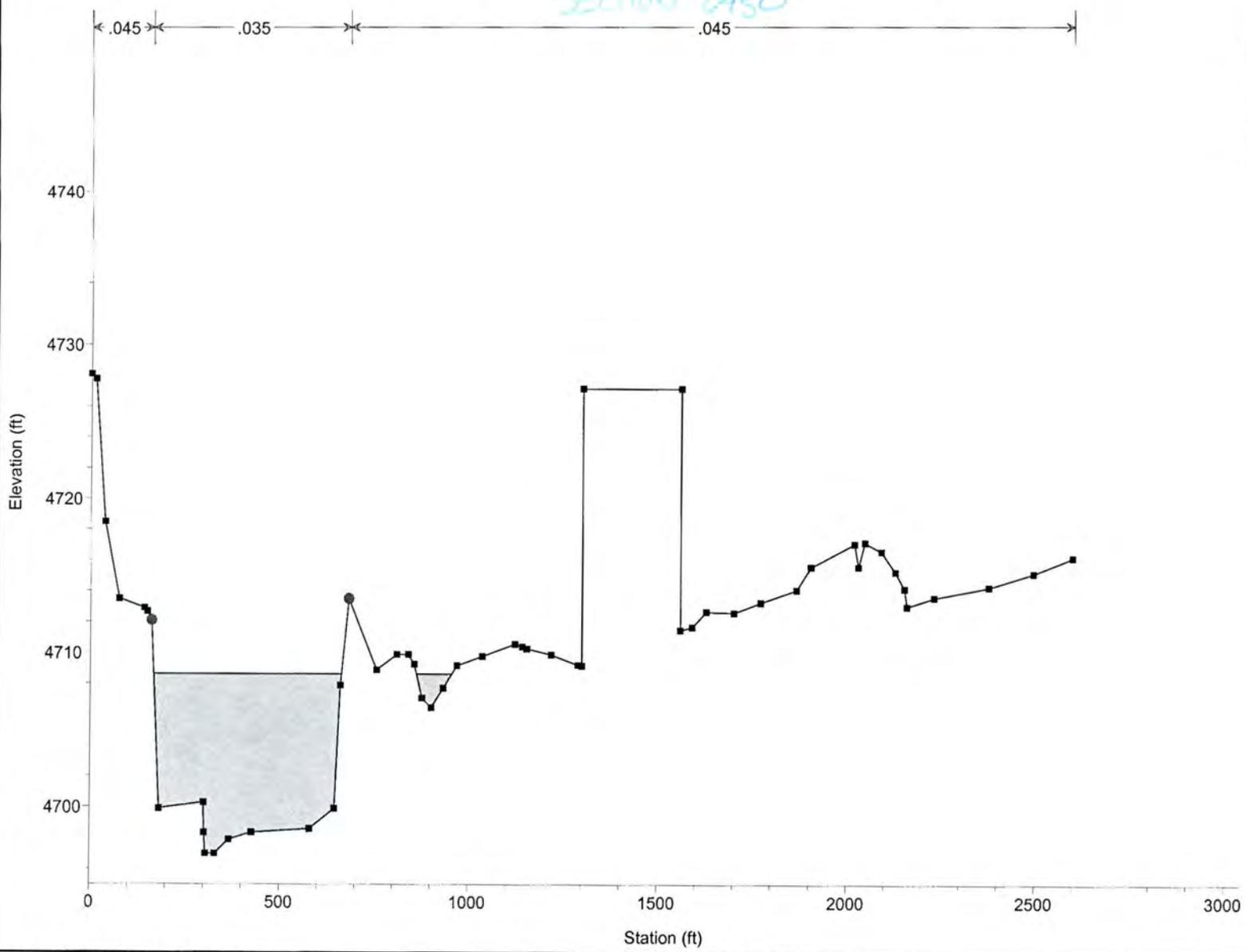


Legend	
WS PF 1	—
Ground	■
Ineff	▲
Bank Sta	●

1 in Horiz. = 400 ft 1 in Vert. = 10 ft

Fountain Crk Existing Conditions 5-5-05 Plan: Plan 05 05/12/2005

SECTION 6450



1 in Horiz. = 400 ft 1 in Vert. = 10 ft

HEC-RAS Plan: Plan 05 River: Fountain Creek Reach: Reach1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach1	8200	PF 1	64000.00	4718.38	4728.39	4727.90	4731.38	0.007781	13.88	4609.75	663.16	0.91
Reach1	8200	PF 2	64000.00	4718.38	4728.36	4727.90	4731.38	0.007862	13.93	4594.44	639.49	0.92
Reach1	8150	PF 1	64000.00	4711.98	4723.00		4724.61	0.004064	10.20	6277.20	860.84	0.66
Reach1	8150	PF 2	64000.00	4711.98	4723.04		4724.63	0.003992	10.14	6311.73	852.12	0.66
Reach1	8100	PF 1	64000.00	4711.98	4721.36		4723.08	0.004143	10.53	6075.61	913.83	0.67
Reach1	8100	PF 2	64000.00	4711.98	4721.53		4723.18	0.003866	10.31	6209.02	802.18	0.65
Reach1	8050	PF 1	64000.00	4709.98	4720.57	4718.12	4721.92	0.002867	8.97	7133.08	1003.86	0.56
Reach1	8050	PF 2	64000.00	4709.98	4720.92	4718.12	4722.09	0.002579	8.69	7366.94	909.45	0.54
Reach1	8000	PF 1	64000.00	4707.48	4719.23		4720.09	0.002165	7.67	9404.45	1807.35	0.49
Reach1	8000	PF 2	64000.00	4707.48	4719.28		4720.34	0.002447	8.26	7744.71	985.02	0.52
Reach1	7050	PF 1	64000.00	4703.28	4713.69	4713.69	4717.12	0.009578	14.86	4307.85	634.30	1.00
Reach1	7050	PF 2	64000.00	4703.28	4713.69	4713.69	4717.12	0.009578	14.86	4307.85	634.30	1.00
Reach1	7000	PF 1	64000.00	4699.98	4711.99		4713.41	0.002432	9.57	6686.31	678.91	0.54
Reach1	7000	PF 2	64000.00	4699.98	4712.05		4713.45	0.002389	9.52	6723.44	679.15	0.53
Reach1	6950	PF 1	64000.00	4696.98	4708.63		4711.46	0.005140	13.54	4822.28	589.76	0.77
Reach1	6950	PF 2	64000.00	4696.98	4708.65		4711.51	0.005167	13.58	4711.53	496.00	0.78
Reach1	6900	PF 1	64000.00	4693.28	4709.43		4709.90	0.000574	5.57	12172.79	1354.01	0.27
Reach1	6900	PF 2	64000.00	4693.28	4709.41		4709.91	0.000605	5.70	11221.02	869.89	0.28
Reach1	6850	PF 1	64000.00	4692.98	4708.89	4701.46	4709.61	0.000787	6.81	9399.34	1483.78	0.32
Reach1	6850	PF 2	64000.00	4692.98	4708.89	4701.46	4709.61	0.000805	6.81	9403.71	688.39	0.32
Reach1	6817	PF 1	64000.00	4690.60	4706.13	4702.64	4708.71	0.003042	12.88	4970.83	389.57	0.64
Reach1	6817	PF 2	64000.00	4690.60	4706.13	4702.64	4708.71	0.003042	12.88	4970.83	389.57	0.64
Reach1	6749.5		Bridge									
Reach1	6749	PF 1	64000.00	4690.60	4702.64	4702.64	4707.45	0.007618	17.62	3633.09	374.29	1.00
Reach1	6749	PF 2	64000.00	4690.60	4702.64	4702.64	4707.45	0.007618	17.62	3633.09	374.29	1.00
Reach1	6700	PF 1	64000.00	4689.70	4700.46	4700.46	4704.38	0.006485	16.14	4295.34	892.11	1.00
Reach1	6700	PF 2	64000.00	4689.70	4700.49	4700.49	4704.38	0.006409	16.06	4311.10	679.40	0.99
Reach1	6600	PF 1	64000.00	4688.30	4698.95	4696.29	4699.82	0.002210	7.49	8542.99	1229.53	0.50
Reach1	6600	PF 2	64000.00	4688.30	4699.78	4696.75	4700.86	0.002002	8.36	7652.42	907.59	0.51
Reach1	6500	PF 1	64000.00	4687.30	4696.38	4696.15	4699.30	0.002836	7.71	8303.42	1283.33	0.53
Reach1	6500	PF 2	64000.00	4687.30	4699.30	4696.65	4700.40	0.002441	8.42	7596.81	974.71	0.53
Reach1	6400	PF 1	64000.00	4686.40	4697.95	4695.40	4698.86	0.001808	7.78	8995.80	1333.07	0.51
Reach1	6400	PF 2	64000.00	4686.40	4699.00	4695.78	4700.00	0.001546	8.03	8102.68	964.00	0.49
Reach1	6300	PF 1	64000.00	4685.40	4695.09	4694.99	4697.97	0.006809	14.91	5433.14	911.63	0.99
Reach1	6300	PF 2	64000.00	4685.40	4695.64	4695.64	4699.13	0.006811	15.68	4743.01	704.15	1.00
Reach1	6200	PF 1	64000.00	4684.40	4695.15	4693.02	4696.49	0.003350	9.32	6865.79	955.96	0.61
Reach1	6200	PF 2	64000.00	4684.40	4695.86	4693.69	4697.60	0.003208	10.59	6042.74	709.49	0.64
Reach1	6100	PF 1	64000.00	4683.40	4693.96		4695.68	0.004015	10.79	6479.95	906.15	0.70
Reach1	6100	PF 2	64000.00	4683.40	4694.71		4696.83	0.003750	11.84	5708.44	695.23	0.73
Reach1	6000	PF 1	64000.00	4682.30	4692.68	4691.46	4694.67	0.004852	11.87	6271.60	884.44	0.78
Reach1	6000	PF 2	64000.00	4682.30	4692.36	4692.20	4695.60	0.007135	14.90	4831.52	688.50	0.99
Reach1	5900	PF 1	64000.00	4681.30	4692.52	4689.65	4693.65	0.002842	8.52	7508.74	924.48	0.53
Reach1	5900	PF 2	64000.00	4681.30	4692.26	4690.17	4694.09	0.003941	10.80	5925.72	691.11	0.65
Reach1	5800	PF 1	64000.00	4679.90	4691.84	4688.39	4692.92	0.001827	8.93	8474.08	1242.14	0.52
Reach1	5800	PF 2	64000.00	4679.90	4691.84	4688.49	4693.05	0.001948	9.45	7974.73	850.00	0.54
Reach1	5700	PF 1	64000.00	4677.90	4690.74	4686.28	4691.51	0.006481	7.30	9179.39	1018.00	0.41
Reach1	5700	PF 2	64000.00	4677.90	4690.72	4686.27	4691.54	0.006770	7.56	8901.02	890.00	0.41
Reach1	5600	PF 1	64000.00	4676.80	4689.05	4685.41	4690.10	0.004010	8.80	8380.15	942.13	0.51
Reach1	5600	PF 2	64000.00	4676.80	4689.07	4685.41	4690.11	0.004001	8.80	8360.78	920.00	0.50
Reach1	5500	PF 1	64000.00	4675.10	4686.61	4684.71	4688.72	0.003571	13.34	7372.91	1063.46	0.76
Reach1	5500	PF 2	64000.00	4675.10	4686.60	4684.71	4688.73	0.003596	13.38	7252.98	852.95	0.76

HEC-RAS Plan: Plan 05 River: Fountain Creek Reach: Reach1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach1	5400	PF 1	64000.00	4673.80	4686.10	4683.76	4687.60	0.002939	12.21	7036.23	852.31	0.72
Reach1	5400	PF 2	64000.00	4673.80	4686.09	4683.73	4687.60	0.002947	12.24	7027.20	795.02	0.72
Reach1	5300	PF 1	64000.00	4672.20	4685.26	4682.47	4686.82	0.002075	10.28	6919.55	761.15	0.58
Reach1	5300	PF 2	64000.00	4672.20	4685.26	4682.47	4686.82	0.002075	10.28	6918.81	761.15	0.58
Reach1	5200	PF 1	64000.00	4671.10	4683.80	4682.06	4686.02	0.003288	13.99	6066.93	690.40	0.74
Reach1	5200	PF 2	64000.00	4671.10	4683.80	4682.06	4686.02	0.003288	13.99	6066.93	690.40	0.74

Geom Title=Fountain Creek Geo w-exapanded x-section

Program Version=3.12

Viewing Rectangle= 0 , 1 , 1 , 0

River Reach=Fountain Creek ,Reach1

Reach XY= 2

.4176471 .8776471 .4317647 .3223529

Rch Text X Y=0.4211765,0.7388235

Reverse River Text= 0

Type RM Length L Ch R = 1 ,8200 ,1080,1160,1230

Node Last Edited Time=Feb/28/2005 14:08:33

#Sta/Elev= 49

0	4740.88	50.9	4738.78	170.9	4729.38	274.9	4718.88	709.9	4722.38
716.12	4719.48	746.9	4718.38	772.78	4719.31	775.9	4725.18	801.9	4721.98
833.9	4732.98	864.9	4734.48	898.21	4736.18	1005.2	4737.1	1017.38	4735.99
1107.82	4736.08	1158.92	4732.92	1204.23	4733.48	1246.6	4733.38	1289.02	4734
1457.54	4737.58	1496.46	4738.85	1500	4738.85	1500	4757.18	2180	4757.18
2180	4739.28	2244.28	4737.17	2339.42	4734.28	2364.53	4733.51	2404.83	4732.6
2433.24	4725.18	2456.65	4731.95	2471.53	4731.78	2502.01	4731.77	2511.05	4731.06
2538.52	4731.78	2604.76	4731.62	2729.45	4732.68	2786.42	4732.51	2816.01	4732.44
2841.38	4730.08	2850.14	4729.81	2864.6	4732.28	2887.79	4731.86	2902.22	4729.52
2951.44	4730.68	2999.1	4738.3	3017.85	4740.18	3056.59	4740.99		

#Mann= 3 , 0 , 0

0 .045 0 170.9 .035 0 833.9 .045 0

#XS Ineff= 2 , 0

0 1500 0 4757.18

Permanent Ineff=

F T

Bank Sta=170.9,833.9

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8150 ,32

Node Last Edited Time=Feb/28/2005 14:08

#Sta/Elev= 69

0	4738.98	198.7	4731.18	229.7			4715.78	282.7	4712.18
303.7	4712.38	306.7	4714.88	788.7		1080.03	4713.71	810.7	4711.98
830.36	4713.98	832.7	4715.58	1032.4		1080	4726.18	1091	4725.98
1091.1	4725.48	1132	4726.18	1175	4733.48	1175.1	4725.98	1185	4726.18
1185.1	4726.18	1202.45	4727	1233.33	4726.49	1292.57	4727.91	1413.45	4729.06
1503.23	4730.38	1547.67	4730.48	1581.79	4729.99	1646.07	4730.07	1692.5	4729.81
1694.74	4729.78	1745.2	4729.86	1773.72	4729.7	1825.03	4730.21	1986.74	4731.48
2042.11	4730.08	2072.82	4732.13	2093.18	4732.13	2155.18	4732.73	2261.26	4732.45
2328.21	4732.48	2342.7	4731.92	2366.72	4728.89	2378.63	4727.35	2399.86	4721.79
2421.15	4727.68	2445.46	4729.43	2457.77	4725.7	2469.66	4728.14	2567.52	4726.91
2608.56	4725.28	2627.09	4725.36	2642.26	4724.48	2651.38	4724.6	2666.7	4730.02
2695.54	4730.68	2703.64	4729.51	2722.1	4737.65	2737.37	4742.94	2787.55	4743.99
2833.57	4744.88	2837.45	4745.23	2864.36	4731.18	2874.34	4729.67	2886.49	4730.81
2908.25	4729.98	2933.6	4729.14	2951.86	4731.06	3027.29	4731.81		

#Mann= 3 , 0 , 0

0 .045 0 198.7 .035 0 1080 .045 0

#XS Ineff= 2 , 0

0 2342.7 0 4731.92

Permanent Ineff=

F T

Bank Sta=198.7,1080

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8100 ,280,300,300

Node Last Edited Time=Feb/28/2005 13:35:34

#Sta/Elev= 82

130	4731.18	220	4725.88	285	4717.18	370	4714.18	415.71	4713.91
430.77	4712.28	467.34	4712.18	473.93	4713.98	490.15	4712.68	528.28	4714.24
554.88	4714.58	587.49	4714.28	634.32	4712.88	689.48	4712.8	706.11	4712.47

726.2	4713.58	732.22	4711.98	770.27	4712.18	814.38	4712.68	855.1	4712.46
900.15	4713.08	989.08	4713.28	1006.29	4712.38	1014.76	4713.25	1020	4712.18
1072	4726.18	1083	4725.98	1083.1	4725.78	1121	4724.28	1155	4722.98
1155.1	4723.48	1161	4723.58	1210	4724.18	1250.8	4725.21	1283.71	4726.42
1301.93	4728.28	1315.26	4728.78	1432.06	4728.68	1452.84	4728.39	1542.22	4726.99
1652.22	4726.08	1665.46	4726.12	1709.98	4725.28	1798.64	4724.85	1912.56	4725.57
1990.48	4725.98	2132.98	4725.62	2155.31	4726.38	2189.34	4726.1	2274.32	4726.29
2359.48	4729.38	2387.04	4726.68	2398.65	4725.18	2415.05	4727.1	2424.54	4724.41
2468.79	4724.28	2495.46	4718.19	2509.33	4715.28	2545.65	4714.42	2553.02	4713.6
2563.91	4715.78	2578.76	4720.17	2589.25	4721.28	2632.11	4721.86	2647.86	4726.54
2684.72	4743.48	2726.22	4744.69	2786.06	4745.88	2793.51	4743.03	2812.96	4732.41
2829.7	4730.38	2856.48	4729.53	2882.3	4724.88	2917.74	4725.91	2956.52	4726.03
3008.02	4725.58	3080.68	4726.67	3101.35	4727.88	3104.63	4729.66	3144.79	4729.88
3196.7	4729.28	3234.39	4728.91						

#Mann= 3 , 0 , 0

130	.045	0	220	.035	0	1072	.045	0
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#XS Ineff= 2 , 0

0	220	1072	0
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Permanent Ineff=

F F

Bank Sta=220,1072

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8050 ,659,687,725

Node Last Edited Time=Apr/06/2005 12:41:00

#Sta/Elev= 80

0	4731.48	19.2	4725.08	167.5	4720.48	197.2	4715.28	371.2	4713.78
570.2	4712.58	577.2	4710.98	765.2	4710.48	795.2	4709.98	816.2	4710.78
820.2	4711.88	1040	4712.58	1085	4722.88	1096	4722.68	1096.1	4722.18
1128	4722.88	1160	4722.18	1160.1	4722.28	1230	4724.18	1237.2	4724.18
1241.15	4724.98	1250	4725.28	1250	4737.18	1300	4737.18	1350	4737.18
1400	4737.18	1410	4737.18	1420	4737.18	1440	4737.18	1440	4728.88
1469.48	4727.78	1526.66	4726.68	1560.89	4726.78	1600	4727.18	1600	4737.18
1700	4737.18	1800	4737.18	2000	4737.18	2150	4737.18	2150	4724.18
2153.99	4723.98	2175.57	4723.5	2199.59	4722.48	2220.44	4715.44	2228.47	4714.89
2235.76	4712.58	2254.65	4713.47	2269.29	4718.28	2278.85	4718.48	2289.67	4722.02
2317.06	4722.58	2331.15	4724.63	2337.46	4722.58	2363.9	4722	2380.88	4720.16
2411.96	4723.38	2442.43	4723	2459.37	4721.38	2489.38	4725.21	2519.37	4725.52
2530.82	4724.68	2561.33	4734.53	2598.43	4735.48	2611.03	4733.16	2625.87	4735.76
2659.62	4736.18	2698.44	4733.02	2714.27	4724.98	2728.25	4722.47	2734.53	4723.21
2742.73	4722.38	2783.18	4723.81	2813.22	4724.38	2865.24	4723.58	2958.33	4725.83
2965.57	4725.08	2986.11	4725.65	3034.78	4725.78	3111.39	4728.14	3131.82	4728.85

#Mann= 3 , 0 , 0

0	.045	0	167.5	.035	0	1085	.045	0
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#XS Ineff= 2 , 0

0	1250	0	4737.18
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Permanent Ineff=

F F

Bank Sta=167.5,1085

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8000 ,700,690,475

Node Last Edited Time=Feb/28/2005 13:34:30

#Sta/Elev= 61

0	4731.08	10.2	4731.38	275.2	4717.48	290.2	4713.98	453.2	4709.78
561.2	4710.18	866.2	4710.28	872.2	4708.38	909.2	4707.48	935.2	4708.08
1007.2	4708.48	1011.2	4711.88	1032.2	4714.18	1123.2	4715.98	1129.31	4715.34
1142.01	4713.18	1210.26	4713.51	1226.21	4714.48	1235	4714.58	1262	4720.28
1275	4720.08	1275.1	4719.58	1307	4720.28	1339	4719.58	1339.1	4720.08
1387	4715.98	1511.72	4716.28	1665.9	4716.54	1709.61	4716.78	1723.4	4720.07
1733.18	4716.98	1766.56	4717.18	1808.52	4718.14	1920.06	4717.98	1936.1	4717.55
1965.64	4714.78	2004.1	4718.48	2125.11	4718.3	2152.36	4719.68	2168	4720.74
2194.17	4719.88	2228	4721.18	2285.49	4721.4	2307.79	4721.88	2318	4718.65
2332.12	4722.68	2401.91	4723.68	2431.06	4722.62	2449.07	4723.28	2489.3	4722.43

2503.29 4719.58 2519.14 4721.08 2553.41 4720.47 2631.7 4722.28 2671.8 4722.65  
 2701.88 4721.38 2738.78 4722.38 2775.12 4722.35 2798.12 4724.28 2881.7 4724.69  
 2957.05 4724.98  
 #Mann= 3 , 0 , 0  
 0 .045 0 10.2 .035 0 1262 .045 0  
 #XS Ineff= 2 , 0  
 0 4731.38 0 4721.18  
 Permanent Ineff=  
 F F  
 Bank Sta=10.2,1262  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,7050 ,680,680,530  
 Node Last Edited Time=Feb/28/2005 13:21:39  
 #Sta/Elev= 48  
 0 4730.18 19 4729.38 56 4718.78 115 4715.28 126 4708.68  
 289 4707.18 296 4704.38 362 4703.28 384 4704.38 441 4706.18  
 735 4708.28 766 4718.18 871 4717.08 874.9 4716.96 906.59 4717.09  
 952.45 4716.38 1020.61 4717.03 1055.76 4717.95 1094.2 4717.72 1112.3 4718  
 1132.38 4715.48 1178.14 4715.23 1250.24 4716.06 1298.77 4716.02 1323 4716.38  
 1329 4717.38 1340 4717.18 1340.1 4716.68 1370 4717.68 1513 4719.98  
 1805 4717.98 1863 4718.28 1938 4720.08 1974 4720.08 2023 4720.18  
 2180 4720.68 2246 4721.48 2260 4721.48 2299.4 4722.28 2323.7 4722.28  
 2336.31 4720.18 2352.51 4722.49 2395.36 4721.9 2412.3 4717.88 2452.9 4719.78  
 2653.88 4720.88 2746.72 4721.94 2889.81 4723.85  
 #Mann= 3 , 0 , 0  
 0 .045 0 115 .035 0 766 .045 0  
 Bank Sta=115,766  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,7000 ,550,530,490  
 Node Last Edited Time=Feb/28/2005 13:21:31  
 #Sta/Elev= 54  
 0 4726.58 23.1 4725.78 42.1 4716.48 65.1 4713.28 92.8 4701.01  
 118.1 4699.98 188.1 4700.18 192.6 4700.89 198.1 4702.78 491.1 4701.78  
 727.1 4702.08 747.1 4712.08 796.1 4713.08 826.67 4712.88 905.56 4713.97  
 1007.04 4714.58 1095.18 4714.79 1145.99 4714.1 1185.22 4714.08 1214.9 4714  
 1248.97 4714.28 1251.93 4713.99 1302.44 4714.6 1331.93 4715.48 1331.93 4727.18  
 1419.24 4727.18 1419.24 4714.77 1479.03 4714.91 1555.98 4714.34 1568.52 4714.48  
 1583.48 4716.28 1595.55 4715.09 1641.21 4714.56 1680.49 4715.03 1731.16 4714.66  
 1758.97 4714.38 1767.59 4715.08 1785.19 4716.43 1815.33 4714.54 1857.81 4714.45  
 1926.85 4715.28 1982.87 4715.47 2060.42 4718.67 2137.05 4719.91 2147.55 4717.82  
 2168.59 4720.08 2211.83 4719.25 2230.12 4714.92 2239.55 4716.66 2288.5 4716.45  
 2402.73 4716.68 2470.9 4717.47 2668.13 4718.54 2709.87 4719.04  
 #Mann= 3 , 0 , 0  
 0 .045 0 65.1 .035 0 747.1 .045 0  
 Bank Sta=65.1,747.1  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6950 ,630,665,670  
 Node Last Edited Time=Feb/28/2005 13:21:25  
 #Sta/Elev= 53  
 04728.075 12.84727.775 37.84718.475 75.84713.475 142.44712.885  
 150.44712.675 161.84712.075 182.84699.875 300.84700.275 302.24698.345  
 305.84696.975 330.84696.975 367.84697.875 427.34698.355 579.84698.575  
 645.84699.875 660.84707.875 681.84713.475 756.84708.875 809.84709.875  
 840.84709.875 856.794709.255 877.664707.045 901.814706.435 933.684707.705  
 969.854709.175 1037.034709.775 1124.154710.565 1143.374710.395 1154.584710.275  
 1218.714709.875 1289.844709.215 13004709.175 13004727.175 15604727.175  
 15604711.475 1590.64711.675 1628.674712.675 1701.314712.595 1772.84713.265  
 1867.194714.075 1904.774715.575 2019.564717.075 2029.794715.575 2046.354717.165  
 2090.744716.575 2127.724715.275 2152.724714.175 2159.454713.025 2231.754713.575  
 2377.164714.275 2495.174715.175 2599.65 4716.18  
 #Mann= 3 , 0 , 0

0 .045 0 161.8 .035 0 681.8 .045 0  
Bank Sta=161.8,681.8  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6900 ,400,400,360  
Node Last Edited Time=Feb/28/2005 13:41:22  
#Sta/Elev= 51

04715.375	36.654711.845	48.624710.485	102.324711.875	146.324704.975
190.524710.375	198.724709.945	237.324694.975	338.324695.075	614.324697.775
719.624694.575	726.324694.275	790.324693.675	852.324693.275	853.524694.405
956.524696.875	1077.324704.575	1296.724709.375	1346.324707.575	1349.324708.015
1354.324707.775	1356.524706.995	1360.324706.045	1371.214704.635	1387.454704.385
14004714.675	14004722.175	15004722.175	15504722.175	15604722.175
16004722.175	16454722.175	16454708.575	1660.584708.475	1694.14711.145
1726.064711.275	1739.844713.675	1769.894712.905	1867.664712.745	1886.684711.775
1899.264709.475	1947.414709.085	1969.044709.735	1988.614713.505	2013.174711.975
2027.044709.775	2132.444710.265	2204.324709.385	2266.824709.615	2326.324710.575
2352.474710.275				

#Mann= 3 , 0 , 0

0 .045 0 198.72 .035 0 1077.32 .045 0

#XS Ineff= 2 , 0

0 1400 0 4722.18

Permanent Ineff=

F T

Bank Sta=198.72,1077.32

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6850 ,300,250,250

BEGIN DESCRIPTION:

Downstream CLOMR

END DESCRIPTION:

Node Last Edited Time=Feb/28/2005 14:10:36

#Sta/Elev= 65

7704719.975	8404717.975	9704715.975	10704713.975	12704711.975
1287.064707.475	1304.374702.815	1314.034702.035	1326.24692.975	1403.644693.145
1413.054694.675	1487.984693.935	1497.314694.555	1624.74695.075	1677.584694.835
1701.014695.175	1807.624694.925	1842.784695.305	1909.454695.075	1926.14695.195
1970.084696.275	2016.384696.105	2049.634696.695	2088.864696.175	2108.814694.865
2156.344695.175	2165.734696.785	2191.844697.275	2217.324701.175	2233.214703.115
2287.954703.275	2311.734704.225	2323.984704.965	2333.564703.575	23604703.875
23604722.175	24004722.175	25004722.175	2541.44722.175	2541.444707.215
2569.644707.875	2579.394709.075	2596.824716.685	2612.274723.075	2638.394722.655
2665.044709.775	2693.964707.455	2714.94709.475	2777.234709.675	2815.644708.755
2827.734707.575	2875.34705.585	2931.634706.715	3030.944707.075	3061.834707.295
3079.994712.275	3110.084715.725	3134.124716.725	3139.674715.375	3159.214708.115
3186.964707.575	3192.084706.155	3198.14707.925	3206.884707.375	3236.054708.285

#Mann= 3 , 0 , 0

770 .045 0 1287.06 .035 0 1970.08 .045 0

#XS Ineff= 2 , 0

0 1287.06 4707.48 1970.08 0 4722.18

Permanent Ineff=

F F

Bank Sta=1287.06,1970.08

Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 1 ,6817 ,68.1,68.1,68.1

BEGIN DESCRIPTION:

Upstream cross-section of HWY 50 bridge

END DESCRIPTION:

Node Last Edited Time=Mar/14/2005 14:43:42

#Sta/Elev= 17

1000	4711.5	1036	4694.6	1067	4693.3	1072	4691.5	1082	4690.6
1120	4690.7	1182	4691.5	1200	4691.3	1244	4692.5	1260	4691.9
1265	4693.1	1318	4693.4	1331	4694.1	1355	4693	1367	4693.4

1401 4705.4 1401.1 4714.4  
 #Mann= 3 , -1 , 0  
 1000 .08 0 1036 .03 0 1401 .05 0  
 #XS Ineff= 2 , 0  
 0 1000 4709.2 1401 0 4712.1  
 Permanent Ineff=  
 F F  
 Bank Sta=1000,1401  
 Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 3 , 6749.5 , , ,  
 BEGIN DESCRIPTION:  
 HWY 50  
 END DESCRIPTION:  
 Node Last Edited Time=Mar/14/2005 14:42:55  
 Bridge Culvert--1,0,-1,-1, 0  
 Deck Dist Width WeirC Skew NumUp NumDn MinLoCord MaxHiCord MaxSubmerge Is\_Ogee  
 0.01,68,2.7,0, 9, 9, , , 0.95, 0, 2,2,,  
 1000 1000 1003 1072 1159 1244 1331 1401 1401.1  
 4711.5 4711.5 4711.5 4712 4712.4 4713 4713.6 4714.4 4714.4  
 4709.9 4711.5 4708.2 4707.5 4707.9 4708.5 4709.1 4709.9 4714.4  
 1000 1000 1003 1072 1159 1244 1331 1401 1401.1  
 4711.5 4711.5 4711.5 4712 4712.4 4713 4713.6 4714.4 4714.4  
 4709.9 4711.5 4708.2 4707.5 4707.9 4708.5 4709.1 4709.9 4714.4  
 Pier Skew, UpSta & Num, DnSta & Num= ,1182, 2 ,1182, 2 , 0 , 0 , 0 , ,  
 20 20  
 0 4710  
 20 20  
 0 4710  
 BR Coef=-1 , 0 , 0 ,1.05, 0 , , ,0.8,0,,1,  
 WSPro=,,, 1 ,,,, 0 ,,,, 0 ,,,, -1 , -1 , 0 , 0 , 0 , 0 , 0  
 BC Design=, , 0 , , 0 , , , , ,

Type RM Length L Ch R = 1 , 6749 , 45,49,40  
 BEGIN DESCRIPTION:  
 Downstream cross-section of HWY 50 bridge  
 END DESCRIPTION:  
 Node Last Edited Time=Mar/02/2005 13:18:51  
 #Sta/Elev= 17  
 1000 4711.5 1036 4694.6 1067 4693.3 1072 4691.5 1082 4690.6  
 1120 4690.7 1182 4691.5 1200 4691.3 1244 4692.5 1260 4691.9  
 1265 4693.1 1318 4693.4 1331 4694.1 1355 4693 1367 4693.4  
 1401 4705.4 1401.1 4714.4  
 #Mann= 3 , -1 , 0  
 1000 .08 0 1036 .03 0 1401 .05 0  
 #XS Ineff= 2 , 0  
 0 1000 4709.2 1401 0 4712.1  
 Permanent Ineff=  
 F F  
 Bank Sta=1000,1401  
 Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 1 , 6700 , 255,304,330  
 Node Last Edited Time=Mar/02/2005 12:45:35  
 #Sta/Elev= 65  
 1000 4717 1027.3 4716.1 1067.5 4714.6 1101.4 4711.9 1127.9 4709.4  
 1151.4 4710.1 1175.4 4709.1 1186.9 4710.8 1213.1 4710.5 1246.3 4709.8  
 1257.9 4708.6 1277.6 4705 1299.3 4703.2 1314.9 4702 1341.7 4694.4  
 1366.3 4692.9 1379.7 4695.7 1392.4 4697.3 1418.2 4696.6 1445.9 4695.5  
 1476.3 4693.1 1503.3 4692.1 1520.3 4691.9 1524.9 4690.4 1635.3 4690.4  
 1644 4689.7 1689.3 4689.9 1689.3 4690.4 1697.1 4691.6 1721 4691.5  
 1731.8 4690 1739.4 4692.6 1756.9 4693.1 1790.6 4693 1818.4 4692.3  
 1834.2 4693.2 1840.1 4693.6 1861.3 4695.9 1887.3 4697.4 1923.1 4695.4  
 1952.8 4695.6 1997.1 4695.6 2043.4 4695.1 2099.2 4696.2 2154.3 4698.1

2213.3	4700.5	2268.3	4704.6	2319.4	4708.3	2366.2	4710.5	2403.2	4713.8
2424.2	4713.3	2439.2	4708.4	2453.7	4702.3	2464.8	4700.8	2471.9	4702.1
2480.6	4702.1	2486.9	4701	2509.2	4702.2	2527.8	4706.1	2542.4	4706.3
2550.3	4707.5	2551.9	4711	2572.2	4716.1	2589.4	4720.5	2605.5	4724.9

#Mann= 3 , -1 , 0  
1000 .08 0 1392.4 .03 0 1861.3 .05 0

#XS Ineff= 2 , 0  
0 1299.3 4697.3 1887.3 0 4720

Permanent Ineff=  
T T

Bank Sta=1392.4,1861.3  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6600 ,208,207,205  
Node Last Edited Time=Mar/02/2005 12:45:07  
#Sta/Elev= 75

1000	4714.5	1033.1	4713.7	1049.3	4713.3	1072.8	4710.9	1104.1	4710
1130.5	4709.9	1152	4709.8	1175.1	4701.9	1200.1	4698.8	1230.1	4696.9
1247.6	4695.6	1294.2	4695.6	1301.6	4695.6	1333.9	4695.4	1353.9	4696.3
1389.8	4695.5	1431.7	4694.3	1456.5	4693	1472.3	4692.1	1502.2	4692
1512.3	4689.4	1515.6	4688.8	1520.2	4689.5	1573	4689.2	1575.3	4688.7
1591.3	4689.3	1631.6	4689.3	1632.2	4688.8	1638.7	4688.3	1656	4688.4
1684	4688.9	1684.9	4689.4	1690.1	4690.6	1712.2	4690.6	1737.5	4690.2
1748.7	4689.3	1755	4691.8	1774.7	4691.5	1812.1	4690.9	1836.3	4690.9
1859.1	4693	1879.6	4692.3	1912.1	4692	1962.6	4692.1	1996.9	4692.9
2029.7	4692.3	2071.2	4691.7	2107.1	4691.7	2142.5	4690.5	2189.3	4690.2
2219.5	4691	2291.5	4688.5	2310.2	4691	2333.8	4691.5	2386.7	4692
2408.3	4693.5	2420.7	4696	2430.1	4699.6	2439.8	4701.8	2445	4701.8
2456	4700.1	2476.8	4700.3	2497.6	4708.5	2514.2	4709	2530.6	4707.5
2540.3	4708.5	2562.1	4713.1	2580.9	4717.5	2590.8	4718.4	2618.2	4719.3
2631	4714.3	2648.6	4706	2661.1	4702.2	2670.4	4703	2693.5	4703.7

#Mann= 3 , -1 , 0  
1000 .08 0 1353.9 .03 0 2107.1 .05 0

#XS Ineff= 2 , 0  
0 1152 4709.8 2618.2 0 4719.3

Permanent Ineff=  
F F

Bank Sta=1152,2618.2  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6500 ,218,196,175  
Node Last Edited Time=Mar/02/2005 12:44:48  
#Sta/Elev= 84

1000	4714.9	1029.5	4714.2	1049	4713.2	1068.3	4712.1	1080.2	4710.8
1099.5	4709.4	1127.2	4709.4	1139.1	4709.4	1152.2	4710	1163	4708.5
1192.5	4701.3	1221.9	4696.2	1248.7	4694.7	1275.6	4694.9	1308.2	4694.9
1348.8	4694	1376.2	4693.8	1382.8	4693.8	1387	4693.9	1412.3	4693.7
1444.5	4694.6	1471.6	4694.9	1491.8	4694.9	1513.6	4693.5	1540	4693.6
1556.8	4692.4	1575.3	4691.9	1601.4	4692.4	1610.7	4690.1	1647.4	4689.9
1654.2	4690.2	1657.2	4689	1657.2	4688.5	1739	4689	1772	4688
1782	4687.3	1802	4688	1820	4689	1838.5	4689	1847.7	4691.9
1877.9	4691.4	1911.8	4691	1947.9	4690.9	1958.7	4692.2	1991.7	4692.4
2007.4	4692.6	2019.6	4692.2	2063.7	4692.2	2110.2	4692.1	2154.5	4692.4
2226.2	4692.5	2270.2	4691.5	2309.8	4691.4	2354.3	4689.1	2390	4688.5
2403.1	4688.6	2417.4	4691.6	2439.4	4691.3	2457	4691.2	2470.5	4693.1
2487.7	4696.6	2497.2	4700	2505.3	4701.1	2508.9	4701.9	2514.9	4701.9
2524.3	4700.5	2537.7	4700.1	2554.4	4701.5	2560.6	4702.9	2572.9	4709.4
2580.9	4709.5	2594.4	4710.1	2607.3	4710.1	2618.4	4711.6	2642.1	4711.6
2656.2	4706.1	2675.3	4700.9	2685.9	4703.2	2698.3	4702.9	2740.1	4703.5
2773.8	4703.5	2803.5	4702.6	2820.9	4701.4	2844.6	4701.8		

#Mann= 3 , -1 , 0  
1000 .08 0 1491.8 .03 0 2110.2 .05 0

#XS Ineff= 2 , 0  
0 1152.2 4710 2618.4 0 4711.6

Permanent Ineff=  
 F F  
 Bank Sta=1152.2,2618.4  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6400 ,220,219,218  
 Node Last Edited Time=Mar/02/2005 12:44:30

#Sta/Elev= 80  
 1000 4714.5 1029.9 4712.6 1046.2 4711.6 1069.2 4709.5 1083.9 4708.8  
 1114.5 4708 1129 4708.4 1135.5 4708.5 1141.8 4708 1156 4704.2  
 1174.2 4698.6 1200.4 4695.5 1279.1 4693 1325.8 4693.3 1364.3 4692.7  
 1396.4 4692.9 1427.2 4692.7 1462.8 4692.7 1517.8 4692.9 1563.3 4693.2  
 1591.9 4692.5 1631.2 4691.8 1664.7 4691.4 1693.5 4690.5 1708.1 4688.9  
 1708.1 4688 1790.2 4688 1823.1 4686.4 1839.7 4688.3 1864 4688.3  
 1876 4687.1 1897 4688.2 1919.4 4688.2 1922.7 4691.3 1952.1 4690.5  
 1997.1 4689.7 2021.8 4690.2 2029.4 4691.1 2058.4 4691 2095.1 4690.7  
 2141.7 4690.3 2208.5 4690.9 2247.1 4691.5 2278.7 4691.5 2363.9 4690.1  
 2401.4 4690.1 2435 4691.1 2468.1 4690.5 2483.2 4691.2 2496.1 4693.8  
 2514.6 4698.4 2519.6 4699.7 2540.7 4700.4 2549.6 4699.5 2558.4 4701.9  
 2563.8 4701.9 2575.6 4700.7 2600.9 4699.4 2615.7 4701.2 2630.6 4704.7  
 2643.4 4707.1 2666 4706.4 2692.4 4700.8 2700.6 4702.9 2740.1 4703  
 2756.4 4703.4 2786.6 4702.2 2801.8 4702.2 2832.3 4700.6 2857.1 4701.3  
 2872.1 4701.7 2914.7 4701.7 2969.8 4702 3026.5 4702.1 3077.3 4702.4  
 3128.4 4702.4 3179.9 4702.6 3228.2 4702.6 3251 4703.3 3287.3 4703.3

#Mann= 3 , -1 , 0  
 1000 .08 0 1427.2 .03 0 2435 .05 0

#XS Ineff= 2 , 0  
 0 1427.2 4692.7 2643.4 0 4707.1

Permanent Ineff=  
 F F  
 Bank Sta=1427.2,2643.4  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6300 ,215,219,224  
 Node Last Edited Time=Mar/02/2005 12:44:02

#Sta/Elev= 79  
 1000 4714.3 1028.6 4712.5 1058.7 4711.2 1076.6 4709.6 1097.6 4709.2  
 1106.5 4709.4 1121 4708.3 1139.1 4707.4 1143.7 4707.4 1165.3 4707.5  
 1184.8 4707.8 1210.8 4708.4 1231.6 4708.6 1262.7 4708.3 1300.9 4707.9  
 1336.3 4707.8 1375 4707.3 1408.7 4706.9 1430.6 4705.8 1446.8 4704.9  
 1468.1 4700.4 1489 4699.6 1516.6 4699.1 1535.4 4699.3 1566.8 4698.2  
 1573.5 4697.3 1589.6 4691.2 1594.2 4691.2 1603.4 4691.2 1627.3 4691.3  
 1657 4691.4 1684.4 4692.2 1704.5 4692.7 1720.1 4692.2 1731.4 4691.1  
 1742.3 4686.8 1742.3 4685.6 1824.4 4686.3 1857.3 4685.4 1858.8 4687.7  
 1883.1 4687.5 1884.3 4686.4 1893.4 4686.6 1895.2 4686 1915.5 4686.5  
 1915.7 4686.9 1984.2 4687.1 1989 4689.3 1998.4 4689.2 2023.9 4688.7  
 2050.8 4688.2 2075.5 4688.7 2096.9 4689.8 2128.2 4690.1 2143.2 4690.1  
 2184.4 4690.8 2232.4 4689.6 2255 4690.1 2291.4 4689.9 2333.6 4690.2  
 2391.4 4688.8 2453.8 4688.1 2465.4 4689.1 2485.8 4694 2492.9 4695.5  
 2514.8 4698.2 2532.5 4698.5 2550.9 4700.2 2562.5 4699.3 2571.1 4700.7  
 2576.5 4700.7 2592.6 4699.2 2602.4 4699.7 2620.7 4701.5 2630.5 4701.5  
 2650.6 4701.9 2669 4701.7 2709.4 4701.7 2718.3 4701.7

#Mann= 3 , -1 , 0  
 1000 .08 0 1704.5 .03 0 2184.4 .05 0

Bank Sta=1704.5,2184.4  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6200 ,218,212,208  
 Node Last Edited Time=Mar/02/2005 12:43:35

#Sta/Elev= 83  
 1000 4719.7 1026.5 4717.7 1063.1 4714.2 1098.7 4712.1 1114.8 4709.2  
 1137.9 4708.2 1156.6 4706.9 1180.1 4706 1184.6 4707 1189.8 4707  
 1199.2 4706.7 1233.4 4705.8 1244.8 4705.8 1266.3 4707.8 1282.7 4712.7  
 1303.3 4716.5 1461.4 4708.6 1493.3 4707.1 1516.6 4706.9 1541.3 4705.6

1594.8	4704.8	1601.9	4704.2	1618.2	4693.3	1631.4	4690.4	1640.3	4690.4
1652.7	4688.6	1666.9	4687.5	1694.6	4688.1	1722.3	4688.4	1744.9	4687.6
1789.2	4687.4	1796.9	4686.1	1796.9	4684.9	1805	4684.6	1880	4685.6
1913	4684.4	1923.7	4686.9	1960.9	4686.3	1972.6	4685.5	2000	4684.8
2020	4685.5	2051	4685.5	2056.8	4687.5	2088.9	4687.5	2134.9	4687.7
2178.5	4688.1	2206.2	4688.9	2232.2	4689.5	2254.6	4689.7	2280.8	4690.3
2317.9	4689.7	2372.6	4688.6	2439	4688.3	2500.9	4687.6	2514.9	4689
2538.1	4692.7	2557.9	4696.8	2569.1	4698.7	2593	4691.8	2601.9	4687.9
2603.2	4697.3	2605.7	4700.8	2611.8	4700.8	2623.4	4699.3	2632	4698.7
2634.6	4697.4	2642.6	4697.4	2652.6	4700.5	2659	4700.8	2700.4	4700.6
2714.4	4700.4	2752	4699.3	2766.8	4698.7	2788	4698.2	2799.1	4697.9
2815.7	4698.7	2854.9	4698.5	2908.8	4698.9	2971.9	4699.6	3035.9	4699.5
3087.2	4700	3139.2	4700.1	3207.1	4700.1				

#Mann= 3 , -1 , 0  
1000 .08 0 1744.9 .03 0 2280.8 .05 0  
#XS Ineff= 2 , 0  
0 1303.3 4716.5 2569.1 0 4698.7  
Permanent Ineff=  
F F  
Bank Sta=1303.3,2569.1  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 6100 , 223,222,214  
Node Last Edited Time=Mar/02/2005 12:42:36  
#Sta/Elev= 80

1000	4722.3	1040.5	4720.8	1079.4	4717.8	1118.6	4714.9	1144.5	4712.3
1171	4709.9	1200.3	4705.7	1238.9	4705.8	1277.8	4705.4	1282.3	4705.4
1304.2	4705.6	1317.3	4705	1337.3	4705.4	1359.2	4705.3	1376.2	4705.5
1393.4	4705.8	1425.6	4705.2	1470.7	4705.1	1503.6	4704.5	1544.5	4704.6
1587.2	4704.1	1629.5	4704	1663.8	4703.3	1684.6	4703.8	1697.1	4701.8
1712.2	4694.1	1723.7	4687.5	1731.6	4687.5	1748.3	4687.6	1769.5	4687.9
1806.5	4687.1	1828.4	4686.7	1849.4	4686.9	1873.8	4686.3	1891.9	4687.5
1902.3	4685.7	1908.2	4685.3	1908.2	4683.6	1918	4683.4	1951	4684.1
2020.3	4685.3	2026.8	4685.8	2034.6	4686	2038.4	4685	2070	4683.8
2090	4685	2142.3	4685	2145.3	4686.1	2155.3	4686.9	2213.5	4687.2
2267.5	4686.8	2302.2	4688.1	2345.6	4688.5	2388	4688.9	2436.6	4689
2460.3	4686.7	2523.8	4686	2561.4	4687.4	2596	4689.1	2611.3	4691
2622.4	4695.5	2643.3	4697.8	2664.2	4697.7	2680.2	4698.9	2691.7	4698
2700	4700.1	2705.3	4700.1	2719.1	4698.5	2735.1	4697.4	2742.9	4699.1
2751	4699.6	2793.3	4698.7	2835.9	4698	2852.3	4696.9	2860.2	4698.5
2883.8	4699.3	2885.8	4699.9	2910.9	4700.3	2945.4	4701	2961.3	4700.9

#Mann= 3 , -1 , 0  
1000 .08 0 1849.4 .03 0 2388 .05 0  
Bank Sta=1849.4,2700  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 6000 , 209,209,209  
Node Last Edited Time=Mar/02/2005 12:42:17  
#Sta/Elev= 71

1000	4708.5	1030.5	4705.6	1044.6	4705.3	1046.5	4704.5	1087.8	4704.1
1113.2	4704.2	1118.3	4704.2	1125.8	4704.2	1137.4	4703.5	1166.7	4703.8
1194.4	4704.4	1207.9	4703.8	1235.2	4703.4	1283.2	4703.6	1331.5	4703.7
1346.3	4704.4	1385.5	4704.1	1420.9	4703.8	1462	4703.3	1506.3	4702.9
1529.2	4702.8	1539.5	4699.2	1561.8	4686.1	1567.9	4686.1	1594.2	4685.4
1637.4	4685.1	1683.9	4686	1727.8	4685.7	1761.9	4686.1	1783.2	4684.4
1804	4685.2	1817.2	4684.9	1819.3	4684.3	1819.3	4682.4	1828.3	4682.3
1861	4683	1898	4683.7	1979	4683.7	1999	4683	2013	4683.6
2024.4	4684.2	2041.4	4686	2054.2	4686.8	2079.8	4686.2	2134.1	4686.3
2177.6	4686.4	2214.1	4687.4	2251	4687.7	2280.6	4687.1	2320.3	4685.8
2358.5	4686.1	2409.6	4686.5	2423.8	4688.4	2441.4	4695.1	2456.4	4695.7
2485.8	4694.1	2509	4695	2521.5	4696.9	2526.7	4697.6	2532.5	4699.4
2538.9	4699.4	2546.4	4698.5	2568.7	4697.2	2581.8	4697.6	2626.4	4697
2668.6	4695.9	2682.3	4695.2	2697.4	4698	2732.9	4699.2	2795.2	4699.5
2838.6	4699.7								

#Mann= 3 , -1 , 0  
 1000 .08 0 1761.9 .03 0 2251 .05 0  
 #XS Ineff= 2 , 0  
 0 1761.9 4686.1 2532.5 0 4699.4  
 Permanent Ineff=  
 F F  
 Bank Sta=1761.9,2532.5  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 5900 , 290,321,360  
 Node Last Edited Time=Mar/02/2005 12:41:51

#Sta/Elev= 87  
 1000 4709 1005.1 4708.8 1015.8 4703.3 1023.3 4703.2 1025 4702.7  
 1066.4 4702.6 1069.7 4703.1 1077.7 4702.2 1091.7 4702.1 1096.8 4702.1  
 1100.1 4701.5 1149.2 4700 1370.8 4704.2 1386.5 4703.9 1416 4702.9  
 1441.8 4702.7 1453.4 4704.7 1466.6 4705.8 1487.9 4705.2 1500.5 4702.9  
 1528.7 4701.9 1538.2 4702.7 1556.4 4693.2 1576.6 4685.1 1585.5 4685.1  
 1603.2 4685.6 1641 4683.9 1664.1 4682.4 1686.1 4683 1714.3 4683.7  
 1756.6 4684.2 1798.7 4684 1831.8 4684 1848.8 4682.8 1848.8 4682.1  
 1857.8 4682 1890.4 4682.8 1915.6 4682.7 1921.3 4682.1 1927.3 4682.7  
 1935.6 4682.1 1967.8 4682.5 2008 4682.6 2028.8 4681.3 2050.6 4682.2  
 2068 4682.2 2079.3 4682.2 2089.8 4685.3 2109 4685.2 2145.7 4684.5  
 2174.8 4685.3 2227.4 4684.4 2270.7 4685.3 2317.8 4685 2364.8 4685.8  
 2407.1 4686.4 2451.8 4687.5 2481.1 4692.2 2499.2 4696.2 2508.4 4697.8  
 2514.2 4697.8 2521.3 4696 2532.7 4696 2544.6 4694.8 2602.4 4695.5  
 2644.5 4694 2659.2 4692.9 2675.7 4693.7 2687.8 4694.3 2732.8 4694.8  
 2772.9 4695.8 2829.2 4696.4 2881.4 4697 2943.9 4697.7 2997 4698.4  
 3018.2 4698.4 3021.3 4698.2 3055 4698.2 3057.1 4698.7 3073 4700.4  
 3105.2 4701.4 3111.2 4697.1 3156.7 4695.7 3173.2 4692.8 3178.5 4693.6  
 3179.2 4700.8 3193.6 4701.5

#Mann= 3 , -1 , 0  
 1000 .08 0 1831.8 .03 0 2364.8 .05 0  
 #XS Ineff= 2 , 0  
 0 1466.6 4705.8 2508.4 0 4697.8  
 Permanent Ineff=  
 F F  
 Bank Sta=1466.6,2508.4  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 5800 , 390,435,450  
 Node Last Edited Time=Mar/03/2005 08:52:59

#Sta/Elev= 76  
 1000 4706.1 1016.6 4703.7 1036.4 4701.7 1075.5 4701.6 1078.7 4702  
 1093 4701 1099 4701 1107.7 4700 1150.2 4698.9 1297 4704.8  
 1323.2 4702.7 1354.1 4701.3 1365.2 4700.5 1396.7 4701 1421.4 4701.4  
 1458.7 4700.4 1468.8 4701.6 1482.6 4700.6 1494.9 4701.3 1517.2 4700.8  
 1536.6 4691.6 1551.1 4684.9 1558.2 4684.9 1582.9 4683.8 1632.7 4681.5  
 1678 4682.6 1726 4683.3 1778.3 4682.9 1830.2 4683.4 1876.9 4683.4  
 1909.4 4683.4 1928.3 4683.4 1932 4681.4 1932 4680 1941 4679.9  
 1986.7 4680.5 2041.8 4681 2148 4681.4 2153.5 4682.6 2182.1 4682.8  
 2201.3 4682 2213.7 4681 2225.6 4681.8 2235.2 4682.7 2252.5 4683.3  
 2286 4682.8 2314.8 4683.3 2348.8 4683.9 2394 4683.8 2434.1 4683.8  
 2455.5 4685.2 2473.1 4694.3 2479.1 4694.2 2485.8 4695 2491.4 4695  
 2500.4 4693.4 2517.3 4693.3 2522.3 4692.3 2534 4692.5 2579.9 4693  
 2620.7 4692 2643 4691.5 2648.9 4690.7 2658.2 4690.7 2659.5 4689.1  
 2784.9 4689.1 2786.3 4690.9 2834.6 4691.1 2879.7 4691.4 2932.7 4691.7  
 2976.6 4693 3020.2 4693 3052.5 4693.8 3067.7 4694.4 3075.6 4695.2  
 3091.6 4696.3

#Mann= 3 , -1 , 0  
 1000 .08 0 1778.3 .03 0 2348.8 .05 0  
 #XS Ineff= 2 , 0  
 0 1830.2 4683.4 2485.8 0 4695  
 Permanent Ineff=  
 F F

Bank Sta=1830.2,2485.8  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5700 ,270,276,270  
Node Last Edited Time=Mar/03/2005 08:47:50  
#Sta/Elev= 78

1000	4716.8	1052.4	4716.4	1067.6	4714.3	1234.7	4710.7	1342.4	4709.9
1441.4	4706.5	1508.5	4705.9	1523	4701.9	1529.7	4701.9	1538.1	4700.1
1562	4699.8	1585.3	4699.2	1587.7	4699.3	1593.2	4699.9	1613.4	4698.1
1619.7	4698.1	1632.4	4697	1646.6	4697.6	1664.3	4695.8	1696.2	4695.2
1715.1	4695.2	1728.7	4700.3	1746.8	4695.8	1795.4	4694.3	1816.9	4697.3
1846.6	4696.5	1882.8	4696.2	1898.5	4698.1	1918.5	4698.7	1941.9	4697.8
1967.1	4697.1	1990.7	4682.2	1997.3	4682.2	2029.2	4680.7	2087.2	4680.2
2158.2	4681.4	2222.6	4680.8	2277.4	4682.6	2321.4	4683.1	2365.8	4683.7
2406	4682.4	2408.8	4682.1	2501.2	4681.5	2525.8	4680.4	2530	4679.1
2530	4677.9	2575.7	4678.6	2630.8	4678.5	2736	4679.1	2744	4680.6
2762.1	4680.5	2765.7	4679.6	2797.8	4679.6	2823	4678.9	2839.6	4680
2876.3	4682.6	2911.4	4686.9	2920.4	4690.3	2924.7	4689.9	2932.7	4691.1
2937	4691.1	2941.9	4691.1	2954.7	4691	2967.2	4690	2979.1	4693.4
2984.5	4694.3	2999.6	4694.6	3009	4693.7	3016.8	4695.6	3025.4	4695.9
3057	4696.6	3086.3	4696.7	3098.8	4696.6	3106.7	4695.9	3129.7	4695.2
3152	4691.9	3175.7	4688.4	3212.8	4688.5				

#Mann= 2 , -1 , 0

1000 .08 0 2839.6 .05 0

Levee=-1,1000,4720,-1,3212.8,4710,,

#XS Ineff= 2 , 0

0 2365.8 4683.7 3086.3 0 4696.7

Permanent Ineff=

F F

Bank Sta=2365.8,3086.3

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5600 ,340,335,335  
Node Last Edited Time=Mar/03/2005 08:47:39

#Sta/Elev= 76

1000	4712.3	1025.7	4710.8	1061.2	4710.2	1121.2	4708.9	1156	4707.7
1174.2	4705.5	1208.2	4706.1	1243.4	4705.8	1264.7	4703.2	1280	4696.5
1302.5	4697.1	1326	4696.6	1329	4696.8	1366.2	4696.1	1400.4	4694.8
1447.3	4695.5	1502.7	4695	1534	4693.8	1579.8	4692.7	1620.8	4692.6
1656.7	4693	1687	4693.6	1694.8	4690.7	1716.3	4680.6	1728.6	4680.6
1785.1	4679.7	1826.3	4679.1	1870.9	4679.4	1915.5	4680.3	1951	4680.5
2005.6	4681.7	2053.4	4681.3	2100.8	4681.1	2161.9	4681	2182.3	4681.1
2212.5	4680.2	2252.9	4679.9	2301.3	4679.9	2336.3	4680.2	2344.7	4678.5
2344.7	4676.9	2368.4	4677.8	2390.4	4677.7	2397.1	4677.4	2445.5	4677.6
2462.4	4677.2	2471.3	4677.6	2552.5	4677.7	2574	4676.8	2591.9	4677.1
2603.2	4683.7	2615.8	4687.4	2620.9	4687.5	2626.4	4689	2632	4689
2641.3	4688	2653.2	4688	2663.5	4686.8	2679.2	4690.9	2705	4691.4
2714.9	4690.7	2732.6	4694.5	2752.4	4702.7	2764.7	4703.4	2788	4705.3
2799.8	4705.9	2824.1	4706.7	2837.5	4706.7	2848.6	4704.7	2876	4696.8
2899.1	4693.1	2921.3	4693.9	2946.5	4693.4	2966.6	4691.6	3007.2	4691.1
3030.1	4690.6								

#Mann= 3 , -1 , 0

1000 .08 0 2182.3 .03 0 2603.2 .05 0

Levee=-1,1730,4700,-1,3030.1,4700,,

#XS Ineff= 2 , 0

0 2005.6 4681.7 2626.4 0 4689

Permanent Ineff=

F F

Bank Sta=2005.6,2626.4

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5500 ,240,329,340  
Node Last Edited Time=Mar/03/2005 08:47:25

#Sta/Elev= 76

1000	4737.8	1021.8	4736.8	1047.1	4730.9	1062.5	4734.2	1080.6	4731.8
1096.4	4726	1136.9	4725.5	1161.8	4726.5	1178.2	4717.4	1199.6	4708.3
1233.9	4707.4	1283.8	4705.7	1335.9	4703.7	1390.4	4701.9	1452.3	4699.7
1521.4	4697.1	1574.1	4695.1	1612.9	4693.4	1639.9	4693.7	1662.8	4693
1695.9	4692.4	1747.8	4690.9	1802.8	4690.1	1860.1	4689.9	1910.9	4689.3
1969.8	4688.5	2015.7	4687.9	2030.3	4687.9	2044.8	4681.7	2061.6	4678.4
2071.6	4678.4	2115.7	4677.5	2188.7	4677.4	2259.3	4678.3	2314.9	4678.3
2372.1	4678.2	2412.5	4678.7	2462.2	4678.4	2509.9	4677.7	2557.9	4678.1
2577.3	4678	2590.9	4678.3	2607.1	4677.2	2647.2	4677.8	2676.4	4677.8
2688.7	4676.9	2706.5	4677.1	2713.5	4675.7	2713.5	4675.1	2750.3	4675.2
2772.3	4675.2	2850.3	4675.7	2861	4680.3	2874.5	4684.8	2883.7	4685.2
2888.9	4686.7	2895	4686.7	2906.4	4684.9	2914.4	4686.1	2920.8	4685.8
2925.4	4684.4	2941	4686	2969	4685.8	3011.3	4685.8	3042.5	4686
3138.1	4686.5	3193.2	4687	3251.2	4687.1	3310.4	4687.6	3380.4	4687.3
3443	4687.6	3505.6	4687.9	3572.1	4688.2	3631.1	4688.6	3681	4689.8
3697.2	4689.9								

#Mann= 3 , -1 , 0  
1000 .08 0 2509.9 .03 0 2888.9 .05 0  
Levee=-1,2080,4720,-1,3697.2,4720,,  
Bank Sta=2509.9,2874.5  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5400 ,280,330,330  
Node Last Edited Time=Mar/03/2005 08:47:07  
#Sta/Elev= 82

1000	4720.5	1019.5	4720.1	1053.5	4717.7	1106.3	4716.2	1166.4	4714.6
1214.3	4713	1266.4	4711.8	1326.4	4710.6	1375.1	4709.1	1407.9	4707.8
1450.4	4707	1474.9	4705.8	1517.3	4704.4	1567	4702.7	1607.9	4700.9
1645.8	4699.4	1684.3	4697.8	1742.5	4696.5	1784.7	4693.9	1838	4691.6
1862.1	4692.5	1885	4691.6	1905.2	4691.6	1952.7	4690.6	1995.4	4690.3
2035.5	4690.3	2039.2	4689.7	2088.5	4689	2128.2	4689.3	2187.1	4688.3
2234.6	4688.3	2270	4686.8	2290.6	4685.2	2306.1	4677.8	2311.7	4678.3
2338.2	4678.6	2434.9	4678.4	2561.7	4676.3	2611.7	4676	2652.8	4676.9
2703.1	4677.4	2736.6	4677.6	2776.2	4676.8	2803.6	4677.2	2835.9	4676.4
2851.9	4677.1	2866.1	4677.5	2886.7	4674.8	2923.5	4674.5	2935.7	4675.8
2936.7	4674.2	2969	4673.8	3015.8	4674.8	3035.2	4678	3046.5	4681.8
3052.3	4683.3	3058.1	4684.7	3063.4	4684.7	3069.9	4682.8	3085.4	4683.1
3099.5	4680.8	3105.1	4680.8	3108.5	4691.8	3134.7	4691.3	3149.6	4691.2
3168.2	4695.3	3186.6	4702.4	3201.3	4703	3223.5	4703.5	3234.8	4704.1
3260.7	4704.7	3272.5	4704.6	3293.4	4698.5	3314.6	4691.9	3333.6	4687.6
3350.7	4689.2	3376.3	4689.2	3397.8	4687.7	3421.7	4685.2	3441.2	4685.8
3461.3	4686	3468.7	4685.3						

#Mann= 3 , -1 , 0  
1000 .08 0 2611.7 .03 0 3035.2 .05 0  
Levee=-1,2310,4720,-1,3468.7,4700,,  
#XS Ineff= 2 , 0  
0 2866.1 4677.5 3260.7 0 4704.7  
Permanent Ineff=  
F F  
Bank Sta=2866.1,3260.7  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5300 ,295,280,270  
Node Last Edited Time=Mar/03/2005 08:46:53  
#Sta/Elev= 93

1000	4718.9	1051.5	4717.5	1115	4715.7	1177.6	4714.1	1244.1	4711.9
1306.4	4710.3	1371.5	4707.6	1428.9	4706.7	1460.7	4705.8	1508.4	4705.5
1557.3	4704.9	1599.7	4703.3	1637.1	4701.8	1677.8	4699.4	1735	4695.4
1784.7	4692.7	1841.3	4690.2	1865.1	4690.6	1888	4690.1	1943.6	4689.5
1998	4688.6	2056.1	4688	2111.6	4687.6	2137.9	4687.6	2161.2	4688.2
2205.8	4688.4	2253.9	4687.9	2291.9	4688.5	2324.4	4678.3	2338.1	4678.3
2361.4	4676.8	2409	4678.5	2417	4675.5	2521.6	4675.5	2594.1	4675.7
2641.5	4675.7	2662.5	4674.4	2671	4675.2	2702.8	4676.1	2734.2	4676.9
2758.8	4672.7	2795.6	4672.5	2807.8	4674.9	2808.8	4672.6	2841.1	4672.2

2854.8	4672.9	2902.2	4672.4	2912	4672.7	2923.2	4678.1	2933.2	4679.3
2962.9	4679.2	2977.7	4679.6	3005.5	4681.5	3025.3	4678.1	3036.9	4680
3043.8	4682	3050.7	4682	3062	4680.2	3070.6	4680.2	3078.4	4680
3091.6	4677.9	3094.3	4695.2	3142.2	4693.9	3180.1	4692.9	3206	4692.4
3219.8	4691.2	3237.1	4688.4	3264.1	4688.6	3285.6	4683.7	3299.4	4680.9
3311	4682	3328.5	4681.3	3370.2	4681.9	3408.8	4681.2	3444.2	4681.7
3476.9	4681.7	3512.4	4680.4	3525	4680.5	3528.8	4679.1	3548.7	4679.7
3573.2	4680.6	3603.9	4681.7	3636.9	4682.7	3680.9	4683.7	3711.2	4684.7
3753.9	4684.7	3798.7	4685.2	3834.6	4686	3879.5	4685.9	3925.3	4686.2
3964.1	4685.9	3994.7	4686.9	4002.1	4686.8				

#Mann= 3 , -1 , 0

1000	.08	0	2409	.03	0	2923.2	.05	0
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Levee=-1,2331.6,4720,-1,3107.7,4720,,

Bank Sta=2409,3005.5

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5200 ,380,375,350

Node Last Edited Time=Mar/03/2005 08:46:44

#Sta/Elev= 83

1000	4719.3	1022.3	4720	1027.1	4720.6	1051.2	4719	1098.2	4717.6
1161	4716.3	1221.8	4715.3	1283.4	4714.7	1327.8	4713.4	1367.8	4711.8
1379.6	4710.7	1404.6	4706.6	1411.6	4705.5	1434.8	4705.6	1460.9	4705.2
1494.7	4702.7	1540.7	4698.6	1600.5	4693.1	1660.5	4689	1722.8	4687.7
1777.3	4687.3	1841	4686.5	1865	4687.2	1888.4	4686.4	1912.9	4686.5
1972.5	4686.3	2027.6	4686.6	2064.6	4686.4	2078.1	4686.2	2134.1	4684.5
2140.1	4685.3	2168.6	4685.6	2195.1	4692.4	2203.9	4688.4	2231.1	4685.2
2253.9	4684.8	2282	4678.5	2301.9	4678.6	2312.4	4675.2	2327.5	4673.9
2377.3	4674.3	2432.4	4674.5	2487.3	4673.8	2535.1	4674.1	2575.8	4674.6
2592.9	4674.3	2605.7	4671.5	2642.5	4671.3	2654.7	4672.7	2658.1	4671.3
2690.4	4671.1	2729.8	4671.5	2738.1	4674.5	2802.3	4674.5	2810.9	4677.9
2850.6	4678.6	2892	4679.3	2934.9	4678	2954	4679	2964.4	4678.6
2967.7	4680	2978.7	4680	2990.4	4678.6	2999.7	4678.4	3011.2	4677.2
3028.6	4682.4	3085.4	4683.4	3092.8	4681.4	3134.2	4679.2	3153.9	4677.9
3180.7	4677.9	3215.2	4678.9	3260.8	4679.3	3312	4679.2	3356.3	4679.1
3406	4678.9	3455.9	4679.4	3489.7	4679.9	3503.1	4681.3	3513.5	4681.3
3516.2	4681	3538.7	4681.1	3556.4	4681.1				

#Mann= 3 , -1 , 0

1000	.08	0	2432.4	.03	0	2810.9	.05	0
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Levee=-1,2320,4720,-1,3010.4,4720,,

Bank Sta=2575.8,2810.9

Exp/Cntr=0.3,0.1

Chan Stop Cuts=-1

Use User Specified Reach Order=0

User Specified Reach Order=Fountain Creek ,Reach1

HEC-RAS Plan: Fountain Cre River: Fountain Creek Reach: Reach1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach1	8200	PF 1	64000.00	4718.38	4728.38	4727.90	4731.38	0.007795	13.89	4606.94	663.07	0.91
Reach1	8200	PF 2	64000.00	4718.38	4728.37	4727.90	4731.38	0.007847	13.92	4597.25	639.54	0.92
Reach1	8150	PF 1	64000.00	4711.98	4723.00		4724.62	0.004052	10.19	6283.02	860.93	0.66
Reach1	8150	PF 2	64000.00	4711.98	4723.03		4724.63	0.004005	10.15	6305.48	852.07	0.66
Reach1	8100	PF 1	64000.00	4711.98	4721.39		4723.10	0.004086	10.49	6101.80	916.75	0.67
Reach1	8100	PF 2	64000.00	4711.98	4721.50		4723.16	0.003909	10.34	6187.48	801.88	0.66
Reach1	8050	PF 1	64000.00	4709.98	4720.72	4718.12	4721.95	0.002805	8.91	7181.32	915.70	0.56
Reach1	8050	PF 2	64000.00	4709.98	4720.88	4718.12	4722.07	0.002621	8.73	7330.53	909.27	0.54
Reach1	8000	PF 1	64000.00	4707.48	4719.18		4720.10	0.002334	7.87	8989.51	1792.41	0.51
Reach1	8000	PF 2	64000.00	4707.48	4719.17		4720.26	0.002548	8.37	7645.25	983.09	0.53
Reach1	7050	PF 1	64000.00	4703.28	4713.95	4713.68	4717.13	0.008442	14.29	4478.06	635.58	0.95
Reach1	7050	PF 2	64000.00	4703.28	4713.97	4713.68	4717.13	0.008399	14.27	4485.20	635.84	0.95
Reach1	7000	PF 1	64000.00	4699.98	4713.26		4714.37	0.001632	8.47	7594.35	788.79	0.45
Reach1	7000	PF 2	64000.00	4699.98	4713.27		4714.38	0.001628	8.47	7565.00	689.88	0.45
Reach1	6950	PF 1	64000.00	4696.98	4710.49	4707.69	4713.01	0.003506	12.74	5023.72	781.95	0.66
Reach1	6950	PF 2	64000.00	4696.98	4710.52	4707.69	4713.03	0.003472	12.70	5038.63	506.26	0.66
Reach1	6900	PF 1	64000.00	4694.98	4707.64		4710.37	0.004283	13.28	4861.47	495.76	0.72
Reach1	6900	PF 2	64000.00	4694.98	4707.62		4710.38	0.004322	13.33	4801.93	456.82	0.72
Reach1	6850	PF 1	64000.00	4692.98	4704.10	4703.77	4708.04	0.007402	16.10	4089.92	466.23	0.93
Reach1	6850	PF 2	64000.00	4692.98	4704.10	4703.77	4708.04	0.007402	16.10	4089.92	466.23	0.93
Reach1	6817	PF 1	64000.00	4690.60	4703.98	4700.82	4706.05	0.002711	11.55	5540.22	505.14	0.61
Reach1	6817	PF 2	64000.00	4690.60	4703.98	4700.80	4706.05	0.002711	11.55	5540.22	505.14	0.61
Reach1	6749.5		Bridge									
Reach1	6749	PF 1	64000.00	4690.60	4700.82	4700.82	4704.87	0.007526	16.14	3965.95	492.10	1.00
Reach1	6749	PF 2	64000.00	4690.60	4700.80	4700.80	4704.87	0.007587	16.19	3953.94	492.00	1.01
Reach1	6700	PF 1	64000.00	4689.70	4700.46	4700.46	4704.38	0.006485	16.14	4295.34	892.11	1.00
Reach1	6700	PF 2	64000.00	4689.70	4700.49	4700.49	4704.38	0.006409	16.08	4311.10	679.40	0.99
Reach1	6600	PF 1	64000.00	4688.30	4698.95	4696.29	4699.82	0.002210	7.49	8542.99	1229.53	0.50
Reach1	6600	PF 2	64000.00	4688.30	4699.76	4696.75	4700.85	0.002017	8.38	7636.02	907.59	0.51
Reach1	6500	PF 1	64000.00	4687.30	4698.38	4696.15	4699.30	0.002836	7.71	8303.42	1283.33	0.53
Reach1	6500	PF 2	64000.00	4687.30	4699.32	4696.60	4700.39	0.002377	8.30	7707.87	983.71	0.52
Reach1	6400	PF 1	64000.00	4686.40	4697.95	4695.40	4698.86	0.001808	7.78	8995.80	1333.07	0.51
Reach1	6400	PF 2	64000.00	4686.40	4699.00	4695.78	4700.00	0.001546	8.03	8102.68	964.00	0.49
Reach1	6300	PF 1	64000.00	4685.40	4695.09	4694.99	4697.97	0.006809	14.91	5433.14	911.63	0.99
Reach1	6300	PF 2	64000.00	4685.40	4695.64	4695.64	4699.13	0.006811	15.68	4743.01	704.15	1.00
Reach1	6200	PF 1	64000.00	4684.40	4695.15	4693.02	4696.49	0.003350	9.32	6865.79	956.96	0.61
Reach1	6200	PF 2	64000.00	4684.40	4695.86	4693.69	4697.60	0.003208	10.59	6042.74	709.49	0.64
Reach1	6100	PF 1	64000.00	4683.40	4693.96		4695.68	0.004015	10.79	6479.95	906.15	0.70
Reach1	6100	PF 2	64000.00	4683.40	4694.71		4696.83	0.003750	11.64	5708.44	695.23	0.73
Reach1	6000	PF 1	64000.00	4682.30	4692.68	4691.46	4694.67	0.004852	11.87	6271.60	884.44	0.78
Reach1	6000	PF 2	64000.00	4682.30	4692.36	4692.20	4695.60	0.007135	14.90	4831.52	688.50	0.99
Reach1	5900	PF 1	64000.00	4681.30	4692.52	4689.65	4693.65	0.002842	8.52	7508.74	924.48	0.53
Reach1	5900	PF 2	64000.00	4681.30	4692.28	4690.17	4694.09	0.003941	10.80	5925.72	691.11	0.65
Reach1	5800	PF 1	64000.00	4679.90	4691.84	4688.39	4692.92	0.001827	8.93	8474.08	1242.14	0.52
Reach1	5800	PF 2	64000.00	4679.90	4691.84	4688.49	4693.05	0.001948	9.45	7974.73	850.00	0.54
Reach1	5700	PF 1	64000.00	4677.90	4690.74	4686.28	4691.51	0.006481	7.30	9179.39	965.03	0.41
Reach1	5700	PF 2	64000.00	4677.90	4690.72	4686.27	4691.54	0.006770	7.56	8901.02	890.00	0.41
Reach1	5600	PF 1	64000.00	4676.80	4689.05	4685.41	4690.10	0.004010	8.80	8380.15	942.13	0.51
Reach1	5600	PF 2	64000.00	4676.80	4689.07	4685.41	4690.11	0.004001	8.80	8360.78	920.00	0.50
Reach1	5500	PF 1	64000.00	4675.10	4686.61	4684.71	4688.72	0.003571	13.34	7372.91	1063.46	0.76
Reach1	5500	PF 2	64000.00	4675.10	4686.60	4684.71	4688.73	0.003596	13.38	7252.98	852.95	0.76

HEC-RAS Plan: Fountain Cre River: Fountain Creek Reach: Reach1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach1	5400	PF 1	64000.00	4673.80	4686.10	4683.76	4687.60	0.002939	12.21	7036.23	852.31	0.72
Reach1	5400	PF 2	64000.00	4673.80	4686.09	4683.73	4687.60	0.002947	12.24	7027.20	795.02	0.72
Reach1	5300	PF 1	64000.00	4672.20	4685.26	4682.47	4686.82	0.002075	10.28	6919.55	761.15	0.58
Reach1	5300	PF 2	64000.00	4672.20	4685.26	4682.47	4686.82	0.002075	10.28	6918.81	761.15	0.58
Reach1	5200	PF 1	64000.00	4671.10	4683.80	4682.06	4686.02	0.003288	13.99	6066.93	690.40	0.74
Reach1	5200	PF 2	64000.00	4671.10	4683.80	4682.06	4686.02	0.003288	13.99	6066.93	690.40	0.74

Geom Title=Fountian Creek Improvements  
Program Version=3.12  
Viewing Rectangle= 0 , 1 , 1 , 0

River Reach=Fountain Creek ,Reach1  
Reach XY= 2

.4176471 .8776471 .3223529  
Rch Text X Y=0.4211765,0.738821  
Reverse River Text= 0

Type RM Length L Ch R = 1 ,8200  
Node Last Edited Time=Feb/28/200  
#Sta/Elev= 49

0	4740.88	50.9	4738.78			4718.88	709.9	4722.38
716.12	4719.48	746.9	4718.38			4725.18	801.9	4721.98
833.9	4732.98	864.9	4734.48			4737.1	1017.38	4735.99
1107.82	4736.08	1158.92	4732.92	1	1123	4733.48	1246.6	4733.38
1457.54	4737.58	1496.46	4738.85		1500	4738.85	1500	4757.18
2180	4739.28	2244.28	4737.17	2339.42	4734.28	2364.53	4733.51	2404.83
2433.24	4725.18	2456.65	4731.95	2471.53	4731.78	2502.01	4731.77	2511.05
2538.52	4731.78	2604.76	4731.62	2729.45	4732.68	2786.42	4732.51	2816.01
2841.38	4730.08	2850.14	4729.81	2864.6	4732.28	2887.79	4731.86	2902.22
2951.44	4730.68	2999.1	4738.3	3017.85	4740.18	3056.59	4740.99	

#Mann= 3 , 0 , 0  
0 .045 0 170.9 .035 0 833.9 .045 0  
#XS Ineff= 2 , 0  
0 1500 0 4757.18

Permanent Ineff=  
F T  
Bank Sta=170.9,833.9  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8150 ,320,370,475  
Node Last Edited Time=Feb/28/2005 14:08:40

#Sta/Elev= 69

0	4738.98	198.7	4731.18	229.7	4715.58	279.7	4715.78	282.7	4712.18
303.7	4712.38	306.7	4714.88	788.7	4716.88	796.03	4713.71	810.7	4711.98
830.36	4713.98	832.7	4715.58	1032	4714.58	1080	4726.18	1091	4725.98
1091.1	4725.48	1132	4726.18	1175	4725.48	1175.1	4725.98	1185	4726.18
1185.1	4726.18	1202.45	4727	1233.33	4726.49	1292.57	4727.91	1413.45	4729.06
1503.23	4730.38	1547.67	4730.48	1581.79	4729.99	1646.07	4730.07	1692.5	4729.81
1694.74	4729.78	1745.2	4729.86	1773.72	4729.7	1825.03	4730.21	1986.74	4731.48
2042.11	4730.08	2072.82	4732.13	2093.18	4732.13	2155.18	4732.73	2261.26	4732.45
2328.21	4732.48	2342.7	4731.92	2366.72	4728.89	2378.63	4727.35	2399.86	4721.79
2421.15	4727.68	2445.46	4729.43	2457.77	4725.7	2469.66	4728.14	2567.52	4726.91
2608.56	4725.28	2627.09	4725.36	2642.26	4724.48	2651.38	4724.6	2666.7	4730.02
2695.54	4730.68	2703.64	4729.51	2722.1	4737.65	2737.37	4742.94	2787.55	4743.99
2833.57	4744.88	2837.45	4745.23	2864.36	4731.18	2874.34	4729.67	2886.49	4730.81
2908.25	4729.98	2933.6	4729.14	2951.86	4731.06	3027.29	4731.81		

#Mann= 3 , 0 , 0  
0 .045 0 198.7 .035 0 1080 .045 0  
#XS Ineff= 2 , 0  
0 2342.7 0 4731.92

Permanent Ineff=  
F T  
Bank Sta=198.7,1080  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8100 ,280,300,300  
Node Last Edited Time=Feb/28/2005 13:35:34

#Sta/Elev= 82

130	4731.18	220	4725.88	285	4717.18	370	4714.18	415.71	4713.91
430.77	4712.28	467.34	4712.18	473.93	4713.98	490.15	4712.68	528.28	4714.24
554.88	4714.58	587.49	4714.28	634.32	4712.88	689.48	4712.8	706.11	4712.47

726.2	4713.58	732.22	4711.98	770.27	4712.18	814.38	4712.68	855.1	4712.46
900.15	4713.08	989.08	4713.28	1006.29	4712.38	1014.76	4713.25	1020	4712.18
1072	4726.18	1083	4725.98	1083.1	4725.78	1121	4724.28	1155	4722.98
1155.1	4723.48	1161	4723.58	1210	4724.18	1250.8	4725.21	1283.71	4726.42
1301.93	4728.28	1315.26	4728.78	1432.06	4728.68	1452.84	4728.39	1542.22	4726.99
1652.22	4726.08	1665.46	4726.12	1709.98	4725.28	1798.64	4724.85	1912.56	4725.57
1990.48	4725.98	2132.98	4725.62	2155.31	4726.38	2189.34	4726.1	2274.32	4726.29
2359.48	4729.38	2387.04	4726.68	2398.65	4725.18	2415.05	4727.1	2424.54	4724.41
2468.79	4724.28	2495.46	4718.19	2509.33	4715.28	2545.65	4714.42	2553.02	4713.6
2563.91	4715.78	2578.76	4720.17	2589.25	4721.28	2632.11	4721.86	2647.86	4726.54
2684.72	4743.48	2726.22	4744.69	2786.06	4745.88	2793.51	4743.03	2812.96	4732.41
2829.7	4730.38	2856.48	4729.53	2882.3	4724.88	2917.74	4725.91	2956.52	4726.03
3008.02	4725.58	3080.68	4726.67	3101.35	4727.88	3104.63	4729.66	3144.79	4729.88
3196.7	4729.28	3234.39	4728.91						

#Mann= 3 , 0 , 0  
 130 .045 0 220 .035 0 1072 .045 0

#XS Ineff= 2 , 0  
 0 220 1072 0

Permanent Ineff=  
 F F  
 Bank Sta=220,1072  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8050 ,659,687,725  
 Node Last Edited Time=Mar/16/2005 13:17:18

#Sta/Elev= 75	0	4731.48	19.2	4725.08	167.5	4720.48	197.2	4715.28	371.2	4713.78
570.2	4712.58	577.2	4710.98	765.2	4710.48	795.2	4709.98	816.2	4710.78	
820.2	4711.88	1040	4712.58	1085	4722.88	1096	4722.68	1096.1	4722.18	
1128	4722.88	1160	4722.18	1160.1	4722.28	1230	4724.18	1237.2	4724.18	
1241.15	4724.98	1250	4725.28	1250	4737.18	1300	4737.18	1350	4737.18	
1400	4737.18	1410	4737.18	1420	4737.18	1440	4737.18	1440	4728.88	
1469.48	4727.78	1526.66	4726.68	1560.89	4726.78	1600	4727.18	1600	4737.18	
1700	4737.18	1800	4737.18	2000	4737.18	2150	4737.18	2150	4724.18	
2153.99	4723.98	2175.57	4723.5	2199.59	4722.48	2220.44	4715.44	2228.47	4714.89	
2235.76	4712.58	2254.65	4713.47	2269.29	4718.28	2278.85	4718.48	2289.67	4722.02	
2317.06	4722.58	2331.15	4724.63	2337.46	4722.58	2363.9	4722	2380.88	4720.16	
2411.96	4723.38	2442.43	4723	2459.37	4721.38	2489.38	4725.21	2519.37	4725.52	
2530.82	4724.68	2561.33	4734.53	2598.43	4735.48	2611.03	4733.16	2625.87	4735.76	
2659.62	4736.18	2698.44	4733.02	2714.27	4724.98	2728.25	4722.47	2734.53	4723.21	
2742.73	4722.38	2783.18	4723.81	2813.22	4724.38	2865.24	4723.58	2958.33	4725.83	

#Mann= 3 , 0 , 0  
 0 .045 0 167.5 .035 0 1085 .045 0

Levee=0,,,-1,1265.36,4740,,  
 Bank Sta=167.5,1085  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,8000 ,700,690,475  
 Node Last Edited Time=Mar/16/2005 13:10:37

#Sta/Elev= 47	0	4731.08	10.2	4731.38	275.2	4717.48	290.2	4713.98	453.2	4709.78
561.2	4710.18	866.2	4710.28	872.2	4708.38	909.2	4707.48	935.2	4708.08	
1007.2	4708.48	1011.2	4711.88	1032.2	4714.18	1123.2	4715.98	1129.31	4715.34	
1142.01	4713.18	1210.26	4713.51	1226.21	4714.48	1235	4714.58	1263.2	4716.7	
1282.3	4719.7	1377.8	4720.2	1386.9	4717	1787.8	4717.2	2137.8	4719.2	
2168	4720.74	2194.17	4719.88	2228	4721.18	2285.49	4721.4	2307.79	4721.88	
2318	4718.65	2332.12	4722.68	2401.91	4723.68	2431.06	4722.62	2449.07	4723.28	
2489.3	4722.43	2503.29	4719.58	2519.14	4721.08	2553.41	4720.47	2631.7	4722.28	
2671.8	4722.65	2701.88	4721.38	2738.78	4722.38	2775.12	4722.35	2798.12	4724.28	
2881.7	4724.69	2957.05	4724.98							

#Mann= 3 , 0 , 0  
 0 .045 0 10.2 .035 0 1282.3 .045 0

#XS Ineff= 2 , 0  
 0 4731.38 0 4721.18

Permanent Ineff=  
F F  
Bank Sta=10.2,1282.3  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,7050 ,680,680,530  
Node Last Edited Time=Feb/28/2005 13:21:39

#Sta/Elev= 48  
0 4730.18 19 4729.38 56 4718.78 115 4715.28 126 4708.68  
289 4707.18 296 4704.38 362 4703.28 384 4704.38 441 4706.18  
735 4708.28 766 4718.18 871 4717.08 874.9 4716.96 906.59 4717.09  
952.45 4716.38 1020.61 4717.03 1055.76 4717.95 1094.2 4717.72 1112.3 4718  
1132.38 4715.48 1178.14 4715.23 1250.24 4716.06 1298.77 4716.02 1323 4716.38  
1329 4717.38 1340 4717.18 1340.1 4716.68 1370 4717.68 1513 4719.98  
1805 4717.98 1863 4718.28 1938 4720.08 1974 4720.08 2023 4720.18  
2180 4720.68 2246 4721.48 2260 4721.48 2299.4 4722.28 2323.7 4722.28  
2336.31 4720.18 2352.51 4722.49 2395.36 4721.9 2412.3 4717.88 2452.9 4719.78  
2653.88 4720.88 2746.72 4721.94 2889.81 4723.85  
#Mann= 3 , 0 , 0  
0 .045 0 115 .035 0 766 .045 0  
Bank Sta=115,766  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,7000 ,550,530,490  
Node Last Edited Time=Feb/28/2005 13:21:31

#Sta/Elev= 54  
0 4726.58 23.1 4725.78 42.1 4716.48 65.1 4713.28 92.8 4701.01  
118.1 4699.98 188.1 4700.18 192.6 4700.89 198.1 4702.78 491.1 4701.78  
727.1 4702.08 747.1 4712.08 796.1 4713.08 826.67 4712.88 905.56 4713.97  
1007.04 4714.58 1095.18 4714.79 1145.99 4714.1 1185.22 4714.08 1214.9 4714  
1248.97 4714.28 1251.93 4713.99 1302.44 4714.6 1331.93 4715.48 1331.93 4727.18  
1419.24 4727.18 1419.24 4714.77 1479.03 4714.91 1555.98 4714.34 1568.52 4714.48  
1583.48 4716.28 1595.55 4715.09 1641.21 4714.56 1680.49 4715.03 1731.16 4714.66  
1758.97 4714.38 1767.59 4715.08 1785.19 4716.43 1815.33 4714.54 1857.81 4714.45  
1926.85 4715.28 1982.87 4715.47 2060.42 4718.67 2137.05 4719.91 2147.55 4717.82  
2168.59 4720.08 2211.83 4719.25 2230.12 4714.92 2239.55 4716.66 2288.5 4716.45  
2402.73 4716.68 2470.9 4717.47 2668.13 4718.54 2709.87 4719.04  
#Mann= 3 , 0 , 0  
0 .045 0 65.1 .035 0 747.1 .045 0  
Bank Sta=65.1,747.1  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6950 ,630,665,670  
Node Last Edited Time=Mar/29/2005 16:51:58

#Sta/Elev= 46  
04728.075 12.84727.775 37.84718.475 75.84713.475 142.44712.885  
150.44712.675 161.84712.075 182.84699.875 300.84700.275 302.24698.345  
305.84696.975 330.84696.975 367.84697.875 427.34698.355 579.84698.575  
645.84699.875 660.84707.875 681.84713.475 756.84708.875 809.84709.875  
840.84709.875 856.794709.255 877.664707.045 901.814706.435 933.684707.705  
969.854709.175 1001.67 4709.8 1014.67 4711.7 1107.67 4711.6 1109.67 4711.2  
1628.674712.675 1701.314712.595 1772.84713.265 1867.194714.075 1904.774715.575  
2019.564717.075 2029.794715.575 2046.354717.165 2090.744716.575 2127.724715.275  
2152.724714.175 2159.454713.025 2231.754713.575 2377.164714.275 2495.174715.175  
2599.65 4716.18  
#Mann= 3 , 0 , 0  
0 .045 0 161.8 .035 0 645.8 .045 0  
#XS Ineff= 2 , 0  
0 600.75 0 4721.3  
Permanent Ineff=  
F F  
Bank Sta=161.8,645.8  
Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 1 ,6900 ,400,400,360  
 Node Last Edited Time=Apr/06/2005 15:36:51  
 #Sta/Elev= 15  
 04715.375 36.654711.845 48.624710.485 102.324711.875 146.324704.975  
 190.524710.375 198.724709.945 237.324694.975 338.324695.075 614.324697.775  
 673.92 4710.21 853.92 4726.6 1150.5 4726.6 1240 4726.6 2352.47 4726.6  
 #Mann= 3 , 0 , 0  
 0 .045 0 198.72 .035 0 673.92 .045 0  
 Bank Sta=198.72,673.92  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6850 ,300,250,250  
 BEGIN DESCRIPTION:  
 Downstream CLOMR  
 END DESCRIPTION:  
 Node Last Edited Time=Apr/06/2005 15:33:58  
 #Sta/Elev= 19  
 7704719.975 8404717.975 9704715.975 10704713.975 12704711.975  
 1287.064707.475 1304.374702.815 1314.034702.035 1326.24692.975 1403.644693.145  
 1413.054694.675 1487.984693.935 1497.314694.555 1624.74695.075 1677.584694.835  
 1701.014695.175 1715.7 4695.76 1910.7 4728.18 3236.05 4728.18  
 #Mann= 3 , 0 , 0  
 770 .045 0 1287.06 .035 0 1715.7 .045 0  
 #XS Ineff= 2 , 0  
 0 1287.06 4707.48 1889.98 0 4728.18  
 Permanent Ineff=  
 F F  
 Bank Sta=1287.06,1715.7  
 Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 1 ,6817 ,161,161,161  
 BEGIN DESCRIPTION:  
 Upstream cross-section of HWY 50 bridge  
 END DESCRIPTION:  
 Node Last Edited Time=May/10/2005 14:05:11  
 #Sta/Elev= 16  
 891.8 4717.4 988 4711.5 1024 4694.6 1055 4693.3 1060 4691.5  
 1070 4690.6 1120 4690.7 1182 4691.5 1200 4691.3 1244 4692.5  
 1260 4691.9 1265 4693.1 1318 4693.4 1488 4693.4 1534 4716.4  
 1575 4716.4  
 #Mann= 3 ,-1 , 0  
 891.8 .08 0 1024 .03 0 1534 .05 0  
 Bank Sta=988,1534  
 Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 3 ,6749.5 , , ,  
 BEGIN DESCRIPTION:  
 HWY 50  
 END DESCRIPTION:  
 Node Last Edited Time=May/10/2005 14:03:26  
 Bridge Culvert--1,0,-1,-1, 0  
 Deck Dist Width WeirC Skew NumUp NumDn MinLoCord MaxHiCord MaxSubmerge Is\_Ogee  
 0.5,160,2.7,0, 2, 2, , , 0.95, 0, 2,2,,  
 988 1534  
 4717.5 4722.4  
 4711.5 4716.4  
 988 1534  
 4717.5 4722.4  
 4711.5 4716.4  
 Pier Skew, UpSta & Num, DnSta & Num= ,1090, 2 ,1060, 2 , 0 , 0 , 0 , ,  
 3 3  
 4690 4718.4  
 3 3  
 4690 4718.4

```

Pier Skew, UpSta & Num, DnSta & Num= ,1190, 2 ,1160, 2 , 0 , 0 , 0 , ,
  3      3
  4690  4718.4
  3      3
  4690  4718.4
Pier Skew, UpSta & Num, DnSta & Num= ,1290, 2 ,1260, 2 , 0 , 0 , 0 , ,
  3      3
  4690  4718.4
  3      3
  4690  4718.4
Pier Skew, UpSta & Num, DnSta & Num= ,1390, 2 ,1360, 2 , 0 , 0 , 0 , ,
  3      3
  4690  4718.4
  3      3
  4690  4718.4
Pier Skew, UpSta & Num, DnSta & Num= ,1490, 2 ,1460, 2 , 0 , 0 , 0 , ,
  3      3
  4690  4718.4
  3      3
  4690  4718.4
BR Coef=-1 , 0 , 0 ,1.05, 0 , , ,0.8,0,,1,
WSPro=,,, 1 ,,,, 0 ,,,, 0 ,,,, -1 , -1 , -1 , 0 , 0 , 0 , 0 , 0
BC Design=,, 0 , , 0 , , , , ,

```

Type RM Length L Ch R = 1 ,6749 ,45,49,40

BEGIN DESCRIPTION:

Downstream cross-section of HWY 50 bridge

END DESCRIPTION:

Node Last Edited Time=May/10/2005 13:54:37

#Sta/Elev= 16

891.8	4717.4	988	4711.5	1024	4694.6	1055	4693.3	1060	4691.5
1070	4690.6	1120	4690.7	1182	4691.5	1200	4691.3	1244	4692.5
1260	4691.9	1265	4693.1	1318	4693.4	1488	4693.4	1534	4716.4
1575	4716.4								

#Mann= 3 , -1 , 0

891.8	.08	0	1024	.03	0	1534	.05	0
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Bank Sta=988,1534

Exp/Cntr=0.5,0.3

Type RM Length L Ch R = 1 ,6700 ,255,304,330

Node Last Edited Time=Mar/02/2005 12:45:35

#Sta/Elev= 65

1000	4717	1027.3	4716.1	1067.5	4714.6	1101.4	4711.9	1127.9	4709.4
1151.4	4710.1	1175.4	4709.1	1186.9	4710.8	1213.1	4710.5	1246.3	4709.8
1257.9	4708.6	1277.6	4705	1299.3	4703.2	1314.9	4702	1341.7	4694.4
1366.3	4692.9	1379.7	4695.7	1392.4	4697.3	1418.2	4696.6	1445.9	4695.5
1476.3	4693.1	1503.3	4692.1	1520.3	4691.9	1524.9	4690.4	1635.3	4690.4
1644	4689.7	1689.3	4689.9	1689.3	4690.4	1697.1	4691.6	1721	4691.5
1731.8	4690	1739.4	4692.6	1756.9	4693.1	1790.6	4693	1818.4	4692.3
1834.2	4693.2	1840.1	4693.6	1861.3	4695.9	1887.3	4697.4	1923.1	4695.4
1952.8	4695.6	1997.1	4695.6	2043.4	4695.1	2099.2	4696.2	2154.3	4698.1
2213.3	4700.5	2268.3	4704.6	2319.4	4708.3	2366.2	4710.5	2403.2	4713.8
2424.2	4713.3	2439.2	4708.4	2453.7	4702.3	2464.8	4700.8	2471.9	4702.1
2480.6	4702.1	2486.9	4701	2509.2	4702.2	2527.8	4706.1	2542.4	4706.3
2550.3	4707.5	2551.9	4711	2572.2	4716.1	2589.4	4720.5	2605.5	4724.9

#Mann= 3 , -1 , 0

1000	.08	0	1392.4	.03	0	1861.3	.05	0
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#XS Ineff= 2 , 0

0	1299.3	4697.3	1887.3	0	4720
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Permanent Ineff=

T T

Bank Sta=1392.4,1861.3

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6600 ,208,207,205  
Node Last Edited Time=Mar/02/2005 12:45:07

#Sta/Elev= 75

1000	4714.5	1033.1	4713.7	1049.3	4713.3	1072.8	4710.9	1104.1	4710
1130.5	4709.9	1152	4709.8	1175.1	4701.9	1200.1	4698.8	1230.1	4696.9
1247.6	4695.6	1294.2	4695.6	1301.6	4695.6	1333.9	4695.4	1353.9	4696.3
1389.8	4695.5	1431.7	4694.3	1456.5	4693	1472.3	4692.1	1502.2	4692
1512.3	4689.4	1515.6	4688.8	1520.2	4689.5	1573	4689.2	1575.3	4688.7
1591.3	4689.3	1631.6	4689.3	1632.2	4688.8	1638.7	4688.3	1656	4688.4
1684	4688.9	1684.9	4689.4	1690.1	4690.6	1712.2	4690.6	1737.5	4690.2
1748.7	4689.3	1755	4691.8	1774.7	4691.5	1812.1	4690.9	1836.3	4690.9
1859.1	4693	1879.6	4692.3	1912.1	4692	1962.6	4692.1	1996.9	4692.9
2029.7	4692.3	2071.2	4691.7	2107.1	4691.7	2142.5	4690.5	2189.3	4690.2
2219.5	4691	2291.5	4688.5	2310.2	4691	2333.8	4691.5	2386.7	4692
2408.3	4693.5	2420.7	4696	2430.1	4699.6	2439.8	4701.8	2445	4701.8
2456	4700.1	2476.8	4700.3	2497.6	4708.5	2514.2	4709	2530.6	4707.5
2540.3	4708.5	2562.1	4713.1	2580.9	4717.5	2590.8	4718.4	2618.2	4719.3
2631	4714.3	2648.6	4706	2661.1	4702.2	2670.4	4703	2693.5	4703.7

#Mann= 3 , -1 , 0  
1000 .08 0 1353.9 .03 0 2107.1 .05 0

#XS Ineff= 2 , 0  
0 1152 4709.8 2618.2 0 4719.3

Permanent Ineff=  
F F  
Bank Sta=1152,2618.2  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6500 ,218,196,175  
Node Last Edited Time=Mar/02/2005 12:44:48

#Sta/Elev= 84

1000	4714.9	1029.5	4714.2	1049	4713.2	1068.3	4712.1	1080.2	4710.8
1099.5	4709.4	1127.2	4709.4	1139.1	4709.4	1152.2	4710	1163	4708.5
1192.5	4701.3	1221.9	4696.2	1248.7	4694.7	1275.6	4694.9	1308.2	4694.9
1348.8	4694	1376.2	4693.8	1382.8	4693.8	1387	4693.9	1412.3	4693.7
1444.5	4694.6	1471.6	4694.9	1491.8	4694.9	1513.6	4693.5	1540	4693.6
1556.8	4692.4	1575.3	4691.9	1601.4	4692.4	1610.7	4690.1	1647.4	4689.9
1654.2	4690.2	1657.2	4689	1657.2	4688.5	1739	4689	1772	4688
1782	4687.3	1802	4688	1820	4689	1838.5	4689	1847.7	4691.9
1877.9	4691.4	1911.8	4691	1947.9	4690.9	1958.7	4692.2	1991.7	4692.4
2007.4	4692.6	2019.6	4692.2	2063.7	4692.2	2110.2	4692.1	2154.5	4692.4
2226.2	4692.5	2270.2	4691.5	2309.8	4691.4	2354.3	4689.1	2390	4688.5
2403.1	4688.6	2417.4	4691.6	2439.4	4691.3	2457	4691.2	2470.5	4693.1
2487.7	4696.6	2497.2	4700	2505.3	4701.1	2508.9	4701.9	2514.9	4701.9
2524.3	4700.5	2537.7	4700.1	2554.4	4701.5	2560.6	4702.9	2572.9	4709.4
2580.9	4709.5	2594.4	4710.1	2607.3	4710.1	2618.4	4711.6	2642.1	4711.6
2656.2	4706.1	2675.3	4700.9	2685.9	4703.2	2698.3	4702.9	2740.1	4703.5
2773.8	4703.5	2803.5	4702.6	2820.9	4701.4	2844.6	4701.8		

#Mann= 3 , -1 , 0  
1000 .08 0 1491.8 .03 0 2110.2 .05 0

#XS Ineff= 2 , 0  
0 1152.2 4710 2618.4 0 4711.6

Permanent Ineff=  
F F  
Bank Sta=1152.2,2618.4  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,6400 ,220,219,218  
Node Last Edited Time=Mar/02/2005 12:44:30

#Sta/Elev= 80

1000	4714.5	1029.9	4712.6	1046.2	4711.6	1069.2	4709.5	1083.9	4708.8
1114.5	4708	1129	4708.4	1135.5	4708.5	1141.8	4708	1156	4704.2
1174.2	4698.6	1200.4	4695.5	1279.1	4693	1325.8	4693.3	1364.3	4692.7
1396.4	4692.9	1427.2	4692.7	1462.8	4692.7	1517.8	4692.9	1563.3	4693.2
1591.9	4692.5	1631.2	4691.8	1664.7	4691.4	1693.5	4690.5	1708.1	4688.9

1708.1	4688	1790.2	4688	1823.1	4686.4	1839.7	4688.3	1864	4688.3
1876	4687.1	1897	4688.2	1919.4	4688.2	1922.7	4691.3	1952.1	4690.5
1997.1	4689.7	2021.8	4690.2	2029.4	4691.1	2058.4	4691	2095.1	4690.7
2141.7	4690.3	2208.5	4690.9	2247.1	4691.5	2278.7	4691.5	2363.9	4690.1
2401.4	4690.1	2435	4691.1	2468.1	4690.5	2483.2	4691.2	2496.1	4693.8
2514.6	4698.4	2519.6	4699.7	2540.7	4700.4	2549.6	4699.5	2558.4	4701.9
2563.8	4701.9	2575.6	4700.7	2600.9	4699.4	2615.7	4701.2	2630.6	4704.7
2643.4	4707.1	2666	4706.4	2692.4	4700.8	2700.6	4702.9	2740.1	4703
2756.4	4703.4	2786.6	4702.2	2801.8	4702.2	2832.3	4700.6	2857.1	4701.3
2872.1	4701.7	2914.7	4701.7	2969.8	4702	3026.5	4702.1	3077.3	4702.4
3128.4	4702.4	3179.9	4702.6	3228.2	4702.6	3251	4703.3	3287.3	4703.3

#Mann= 3 , -1 , 0  
 1000 .08 0 1427.2 .03 0 2435 .05 0

#XS Ineff= 2 , 0  
 0 1427.2 4692.7 2643.4 0 4707.1

Permanent Ineff=  
 F F  
 Bank Sta=1427.2,2643.4  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 6300 , 215,219,224  
 Node Last Edited Time=Mar/02/2005 12:44:02

#Sta/Elev= 79

1000	4714.3	1028.6	4712.5	1058.7	4711.2	1076.6	4709.6	1097.6	4709.2
1106.5	4709.4	1121	4708.3	1139.1	4707.4	1143.7	4707.4	1165.3	4707.5
1184.8	4707.8	1210.8	4708.4	1231.6	4708.6	1262.7	4708.3	1300.9	4707.9
1336.3	4707.8	1375	4707.3	1408.7	4706.9	1430.6	4705.8	1446.8	4704.9
1468.1	4700.4	1489	4699.6	1516.6	4699.1	1535.4	4699.3	1566.8	4698.2
1573.5	4697.3	1589.6	4691.2	1594.2	4691.2	1603.4	4691.2	1627.3	4691.3
1657	4691.4	1684.4	4692.2	1704.5	4692.7	1720.1	4692.2	1731.4	4691.1
1742.3	4686.8	1742.3	4685.6	1824.4	4686.3	1857.3	4685.4	1858.8	4687.7
1883.1	4687.5	1884.3	4686.4	1893.4	4686.6	1895.2	4686	1915.5	4686.5
1915.7	4686.9	1984.2	4687.1	1989	4689.3	1998.4	4689.2	2023.9	4688.7
2050.8	4688.2	2075.5	4688.7	2096.9	4689.8	2128.2	4690.1	2143.2	4690.1
2184.4	4690.8	2232.4	4689.6	2255	4690.1	2291.4	4689.9	2333.6	4690.2
2391.4	4688.8	2453.8	4688.1	2465.4	4689.1	2485.8	4694	2492.9	4695.5
2514.8	4698.2	2532.5	4698.5	2550.9	4700.2	2562.5	4699.3	2571.1	4700.7
2576.5	4700.7	2592.6	4699.2	2602.4	4699.7	2620.7	4701.5	2630.5	4701.5
2650.6	4701.9	2669	4701.7	2709.4	4701.7	2718.3	4701.7		

#Mann= 3 , -1 , 0  
 1000 .08 0 1704.5 .03 0 2184.4 .05 0

Bank Sta=1704.5,2184.4  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 6200 , 218,212,208  
 Node Last Edited Time=Mar/02/2005 12:43:35

#Sta/Elev= 83

1000	4719.7	1026.5	4717.7	1063.1	4714.2	1098.7	4712.1	1114.8	4709.2
1137.9	4708.2	1156.6	4706.9	1180.1	4706	1184.6	4707	1189.8	4707
1199.2	4706.7	1233.4	4705.8	1244.8	4705.8	1266.3	4707.8	1282.7	4712.7
1303.3	4716.5	1461.4	4708.6	1493.3	4707.1	1516.6	4706.9	1541.3	4705.6
1594.8	4704.8	1601.9	4704.2	1618.2	4693.3	1631.4	4690.4	1640.3	4690.4
1652.7	4688.6	1666.9	4687.5	1694.6	4688.1	1722.3	4688.4	1744.9	4687.6
1789.2	4687.4	1796.9	4686.1	1796.9	4684.9	1805	4684.6	1880	4685.6
1913	4684.4	1923.7	4686.9	1960.9	4686.3	1972.6	4685.5	2000	4684.8
2020	4685.5	2051	4685.5	2056.8	4687.5	2088.9	4687.5	2134.9	4687.7
2178.5	4688.1	2206.2	4688.9	2232.2	4689.5	2254.6	4689.7	2280.8	4690.3
2317.9	4689.7	2372.6	4688.6	2439	4688.3	2500.9	4687.6	2514.9	4689
2538.1	4692.7	2557.9	4696.8	2569.1	4698.7	2593	4691.8	2601.9	4687.9
2603.2	4697.3	2605.7	4700.8	2611.8	4700.8	2623.4	4699.3	2632	4698.7
2634.6	4697.4	2642.6	4697.4	2652.6	4700.5	2659	4700.8	2700.4	4700.6
2714.4	4700.4	2752	4699.3	2766.8	4698.7	2788	4698.2	2799.1	4697.9
2815.7	4698.7	2854.9	4698.5	2908.8	4698.9	2971.9	4699.6	3035.9	4699.5
3087.2	4700	3139.2	4700.1	3207.1	4700.1				

#Mann= 3 , -1 , 0  
 1000 .08 0 1744.9 .03 0 2280.8 .05 0  
 #XS Ineff= 2 , 0  
 0 1303.3 4716.5 2569.1 0 4698.7  
 Permanent Ineff=  
 F F  
 Bank Sta=1303.3,2569.1  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 6100 , 223,222,214  
 Node Last Edited Time=Mar/02/2005 12:42:36  
 #Sta/Elev= 80

1000	4722.3	1040.5	4720.8	1079.4	4717.8	1118.6	4714.9	1144.5	4712.3
1171	4709.9	1200.3	4705.7	1238.9	4705.8	1277.8	4705.4	1282.3	4705.4
1304.2	4705.6	1317.3	4705	1337.3	4705.4	1359.2	4705.3	1376.2	4705.5
1393.4	4705.8	1425.6	4705.2	1470.7	4705.1	1503.6	4704.5	1544.5	4704.6
1587.2	4704.1	1629.5	4704	1663.8	4703.3	1684.6	4703.8	1697.1	4701.8
1712.2	4694.1	1723.7	4687.5	1731.6	4687.5	1748.3	4687.6	1769.5	4687.9
1806.5	4687.1	1828.4	4686.7	1849.4	4686.9	1873.8	4686.3	1891.9	4687.5
1902.3	4685.7	1908.2	4685.3	1908.2	4683.6	1918	4683.4	1951	4684.1
2020.3	4685.3	2026.8	4685.8	2034.6	4686	2038.4	4685	2070	4683.8
2090	4685	2142.3	4685	2145.3	4686.1	2155.3	4686.9	2213.5	4687.2
2267.5	4686.8	2302.2	4688.1	2345.6	4688.5	2388	4688.9	2436.6	4689
2460.3	4686.7	2523.8	4686	2561.4	4687.4	2596	4689.1	2611.3	4691
2622.4	4695.5	2643.3	4697.8	2664.2	4697.7	2680.2	4698.9	2691.7	4698
2700	4700.1	2705.3	4700.1	2719.1	4698.5	2735.1	4697.4	2742.9	4699.1
2751	4699.6	2793.3	4698.7	2835.9	4698	2852.3	4696.9	2860.2	4698.5
2883.8	4699.3	2885.8	4699.9	2910.9	4700.3	2945.4	4701	2961.3	4700.9

#Mann= 3 , -1 , 0  
 1000 .08 0 1849.4 .03 0 2388 .05 0  
 Bank Sta=1849.4,2700  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 6000 , 209,209,209  
 Node Last Edited Time=Mar/02/2005 12:42:17  
 #Sta/Elev= 71

1000	4708.5	1030.5	4705.6	1044.6	4705.3	1046.5	4704.5	1087.8	4704.1
1113.2	4704.2	1118.3	4704.2	1125.8	4704.2	1137.4	4703.5	1166.7	4703.8
1194.4	4704.4	1207.9	4703.8	1235.2	4703.4	1283.2	4703.6	1331.5	4703.7
1346.3	4704.4	1385.5	4704.1	1420.9	4703.8	1462	4703.3	1506.3	4702.9
1529.2	4702.8	1539.5	4699.2	1561.8	4686.1	1567.9	4686.1	1594.2	4685.4
1637.4	4685.1	1683.9	4686	1727.8	4685.7	1761.9	4686.1	1783.2	4684.4
1804	4685.2	1817.2	4684.9	1819.3	4684.3	1819.3	4682.4	1828.3	4682.3
1861	4683	1898	4683.7	1979	4683.7	1999	4683	2013	4683.6
2024.4	4684.2	2041.4	4686	2054.2	4686.8	2079.8	4686.2	2134.1	4686.3
2177.6	4686.4	2214.1	4687.4	2251	4687.7	2280.6	4687.1	2320.3	4685.8
2358.5	4686.1	2409.6	4686.5	2423.8	4688.4	2441.4	4695.1	2456.4	4695.7
2485.8	4694.1	2509	4695	2521.5	4696.9	2526.7	4697.6	2532.5	4699.4
2538.9	4699.4	2546.4	4698.5	2568.7	4697.2	2581.8	4697.6	2626.4	4697
2668.6	4695.9	2682.3	4695.2	2697.4	4698	2732.9	4699.2	2795.2	4699.5
2838.6	4699.7								

#Mann= 3 , -1 , 0  
 1000 .08 0 1761.9 .03 0 2251 .05 0  
 #XS Ineff= 2 , 0  
 0 1761.9 4686.1 2532.5 0 4699.4  
 Permanent Ineff=  
 F F  
 Bank Sta=1761.9,2532.5  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 5900 , 290,321,360  
 Node Last Edited Time=Mar/02/2005 12:41:51  
 #Sta/Elev= 87

1000	4709	1005.1	4708.8	1015.8	4703.3	1023.3	4703.2	1025	4702.7
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1066.4	4702.6	1069.7	4703.1	1077.7	4702.2	1091.7	4702.1	1096.8	4702.1
1100.1	4701.5	1149.2	4700	1370.8	4704.2	1386.5	4703.9	1416	4702.9
1441.8	4702.7	1453.4	4704.7	1466.6	4705.8	1487.9	4705.2	1500.5	4702.9
1528.7	4701.9	1538.2	4702.7	1556.4	4693.2	1576.6	4685.1	1585.5	4685.1
1603.2	4685.6	1641	4683.9	1664.1	4682.4	1686.1	4683	1714.3	4683.7
1756.6	4684.2	1798.7	4684	1831.8	4684	1848.8	4682.8	1848.8	4682.1
1857.8	4682	1890.4	4682.8	1915.6	4682.7	1921.3	4682.1	1927.3	4682.7
1935.6	4682.1	1967.8	4682.5	2008	4682.6	2028.8	4681.3	2050.6	4682.2
2068	4682.2	2079.3	4682.2	2089.8	4685.3	2109	4685.2	2145.7	4684.5
2174.8	4685.3	2227.4	4684.4	2270.7	4685.3	2317.8	4685	2364.8	4685.8
2407.1	4686.4	2451.8	4687.5	2481.1	4692.2	2499.2	4696.2	2508.4	4697.8
2514.2	4697.8	2521.3	4696	2532.7	4696	2544.6	4694.8	2602.4	4695.5
2644.5	4694	2659.2	4692.9	2675.7	4693.7	2687.8	4694.3	2732.8	4694.8
2772.9	4695.8	2829.2	4696.4	2881.4	4697	2943.9	4697.7	2997	4698.4
3018.2	4698.4	3021.3	4698.2	3055	4698.2	3057.1	4698.7	3073	4700.4
3105.2	4701.4	3111.2	4697.1	3156.7	4695.7	3173.2	4692.8	3178.5	4693.6
3179.2	4700.8	3193.6	4701.5						

#Mann= 3 , -1 , 0  
1000 .08 0 1831.8 .03 0 2364.8 .05 0

#XS Ineff= 2 , 0  
0 1466.6 4705.8 2508.4 0 4697.8

Permanent Ineff=  
F F

Bank Sta=1466.6,2508.4  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 5800 , 390,435,450  
Node Last Edited Time=Mar/03/2005 08:52:59  
#Sta/Elev= 76

1000	4706.1	1016.6	4703.7	1036.4	4701.7	1075.5	4701.6	1078.7	4702
1093	4701	1099	4701	1107.7	4700	1150.2	4698.9	1297	4704.8
1323.2	4702.7	1354.1	4701.3	1365.2	4700.5	1396.7	4701	1421.4	4701.4
1458.7	4700.4	1468.8	4701.6	1482.6	4700.6	1494.9	4701.3	1517.2	4700.8
1536.6	4691.6	1551.1	4684.9	1558.2	4684.9	1582.9	4683.8	1632.7	4681.5
1678	4682.6	1726	4683.3	1778.3	4682.9	1830.2	4683.4	1876.9	4683.4
1909.4	4683.4	1928.3	4683.4	1932	4681.4	1932	4680	1941	4679.9
1986.7	4680.5	2041.8	4681	2148	4681.4	2153.5	4682.6	2182.1	4682.8
2201.3	4682	2213.7	4681	2225.6	4681.8	2235.2	4682.7	2252.5	4683.3
2286	4682.8	2314.8	4683.3	2348.8	4683.9	2394	4683.8	2434.1	4683.8
2455.5	4685.2	2473.1	4694.3	2479.1	4694.2	2485.8	4695	2491.4	4695
2500.4	4693.4	2517.3	4693.3	2522.3	4692.3	2534	4692.5	2579.9	4693
2620.7	4692	2643	4691.5	2648.9	4690.7	2658.2	4690.7	2659.5	4689.1
2784.9	4689.1	2786.3	4690.9	2834.6	4691.1	2879.7	4691.4	2932.7	4691.7
2976.6	4693	3020.2	4693	3052.5	4693.8	3067.7	4694.4	3075.6	4695.2
3091.6	4696.3								

#Mann= 3 , -1 , 0  
1000 .08 0 1778.3 .03 0 2348.8 .05 0

#XS Ineff= 2 , 0  
0 1830.2 4683.4 2485.8 0 4695

Permanent Ineff=  
F F

Bank Sta=1830.2,2485.8  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 5700 , 270,276,270  
Node Last Edited Time=Mar/07/2005 11:24:38  
#Sta/Elev= 74

1000	4716.8	1052.4	4716.4	1067.6	4714.3	1234.7	4710.7	1342.4	4709.9
1441.4	4706.5	1508.5	4705.9	1523	4701.9	1529.7	4701.9	1538.1	4700.1
1562	4699.8	1585.3	4699.2	1587.7	4699.3	1593.2	4699.9	1613.4	4698.1
1619.7	4698.1	1632.4	4697	1646.6	4697.6	1664.3	4695.8	1696.2	4695.2
1715.1	4695.2	1728.7	4700.3	1746.8	4695.8	1795.4	4694.3	1816.9	4697.3
1846.6	4696.5	1882.8	4696.2	1898.5	4698.1	1918.5	4698.7	1941.9	4697.8
1967.1	4697.1	1990.7	4682.2	1997.3	4682.2	2029.2	4680.7	2087.2	4680.2

2158.2	4681.4	2222.6	4680.8	2277.4	4682.6	2321.4	4683.1	2365.8	4683.7
2406	4682.4	2408.8	4682.1	2501.2	4681.5	2525.8	4680.4	2530	4679.1
2530	4677.9	2575.7	4678.6	2630.8	4678.5	2736	4679.1	2744	4680.6
2762.1	4680.5	2765.7	4679.6	2797.8	4679.6	2823	4678.9	2839.6	4680
2876.3	4682.6	2911.4	4686.9	2920.4	4690.3	2924.7	4689.9	2932.7	4691.1
2937	4691.1	2941.9	4691.1	2954.7	4691	2967.2	4690	2979.1	4693.4
2984.5	4694.3	2999.6	4694.6	3009	4693.7	3016.8	4695.6	3025.4	4695.9
3039.5	4692.5	3042.27	4700.72	3220.2	4702	3222.3	4691.28		

#Mann= 2 , -1 , 0  
 1000 .08 0 2839.6 .05 0  
 Levee=-1,1000,4720,-1,3212.8,4710,,  
 #XS Ineff= 2 , 0  
 0 2365.8 4683.7 3039.5 0 4696.7  
 Permanent Ineff=  
 F F  
 Bank Sta=2365.8,3039.5  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5600 ,340,335,335  
 Node Last Edited Time=Mar/03/2005 08:47:39  
 #Sta/Elev= 76

1000	4712.3	1025.7	4710.8	1061.2	4710.2	1121.2	4708.9	1156	4707.7
1174.2	4705.5	1208.2	4706.1	1243.4	4705.8	1264.7	4703.2	1280	4696.5
1302.5	4697.1	1326	4696.6	1329	4696.8	1366.2	4696.1	1400.4	4694.8
1447.3	4695.5	1502.7	4695	1534	4693.8	1579.8	4692.7	1620.8	4692.6
1656.7	4693	1687	4693.6	1694.8	4690.7	1716.3	4680.6	1728.6	4680.6
1785.1	4679.7	1826.3	4679.1	1870.9	4679.4	1915.5	4680.3	1951	4680.5
2005.6	4681.7	2053.4	4681.3	2100.8	4681.1	2161.9	4681	2182.3	4681.1
2212.5	4680.2	2252.9	4679.9	2301.3	4679.9	2336.3	4680.2	2344.7	4678.5
2344.7	4676.9	2368.4	4677.8	2390.4	4677.7	2397.1	4677.4	2445.5	4677.6
2462.4	4677.2	2471.3	4677.6	2552.5	4677.7	2574	4676.8	2591.9	4677.1
2603.2	4683.7	2615.8	4687.4	2620.9	4687.5	2626.4	4689	2632	4689
2641.3	4688	2653.2	4688	2663.5	4686.8	2679.2	4690.9	2705	4691.4
2714.9	4690.7	2732.6	4694.5	2752.4	4702.7	2764.7	4703.4	2788	4705.3
2799.8	4705.9	2824.1	4706.7	2837.5	4706.7	2848.6	4704.7	2876	4696.8
2899.1	4693.1	2921.3	4693.9	2946.5	4693.4	2966.6	4691.6	3007.2	4691.1
3030.1	4690.6								

#Mann= 3 , -1 , 0  
 1000 .08 0 2182.3 .03 0 2603.2 .05 0  
 Levee=-1,1730,4700,-1,3030.1,4700,,  
 #XS Ineff= 2 , 0  
 0 2005.6 4681.7 2626.4 0 4689  
 Permanent Ineff=  
 F F  
 Bank Sta=2005.6,2626.4  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5500 ,240,329,340  
 Node Last Edited Time=Mar/03/2005 08:47:25  
 #Sta/Elev= 76

1000	4737.8	1021.8	4736.8	1047.1	4730.9	1062.5	4734.2	1080.6	4731.8
1096.4	4726	1136.9	4725.5	1161.8	4726.5	1178.2	4717.4	1199.6	4708.3
1233.9	4707.4	1283.8	4705.7	1335.9	4703.7	1390.4	4701.9	1452.3	4699.7
1521.4	4697.1	1574.1	4695.1	1612.9	4693.4	1639.9	4693.7	1662.8	4693
1695.9	4692.4	1747.8	4690.9	1802.8	4690.1	1860.1	4689.9	1910.9	4689.3
1969.8	4688.5	2015.7	4687.9	2030.3	4687.9	2044.8	4681.7	2061.6	4678.4
2071.6	4678.4	2115.7	4677.5	2188.7	4677.4	2259.3	4678.3	2314.9	4678.3
2372.1	4678.2	2412.5	4678.7	2462.2	4678.4	2509.9	4677.7	2557.9	4678.1
2577.3	4678	2590.9	4678.3	2607.1	4677.2	2647.2	4677.8	2676.4	4677.8
2688.7	4676.9	2706.5	4677.1	2713.5	4675.7	2713.5	4675.1	2750.3	4675.2
2772.3	4675.2	2850.3	4675.7	2861	4680.3	2874.5	4684.8	2883.7	4685.2
2888.9	4686.7	2895	4686.7	2906.4	4684.9	2914.4	4686.1	2920.8	4685.8
2925.4	4684.4	2941	4686	2969	4685.8	3011.3	4685.8	3042.5	4686
3138.1	4686.5	3193.2	4687	3251.2	4687.1	3310.4	4687.6	3380.4	4687.3

3443 4687.6 3505.6 4687.9 3572.1 4688.2 3631.1 4688.6 3681 4689.8  
 3697.2 4689.9  
 #Mann= 3 , -1 , 0  
 1000 .08 0 2509.9 .03 0 2888.9 .05 0  
 Levee=-1,2080,4720,-1,3697.2,4720,,  
 Bank Sta=2509.9,2874.5  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 5400 , 280,330,330  
 Node Last Edited Time=Mar/03/2005 08:47:07  
 #Sta/Elev= 82

1000	4720.5	1019.5	4720.1	1053.5	4717.7	1106.3	4716.2	1166.4	4714.6
1214.3	4713	1266.4	4711.8	1326.4	4710.6	1375.1	4709.1	1407.9	4707.8
1450.4	4707	1474.9	4705.8	1517.3	4704.4	1567	4702.7	1607.9	4700.9
1645.8	4699.4	1684.3	4697.8	1742.5	4696.5	1784.7	4693.9	1838	4691.6
1862.1	4692.5	1885	4691.6	1905.2	4691.6	1952.7	4690.6	1995.4	4690.3
2035.5	4690.3	2039.2	4689.7	2088.5	4689	2128.2	4689.3	2187.1	4688.3
2234.6	4688.3	2270	4686.8	2290.6	4685.2	2306.1	4677.8	2311.7	4678.3
2338.2	4678.6	2434.9	4678.4	2561.7	4676.3	2611.7	4676	2652.8	4676.9
2703.1	4677.4	2736.6	4677.6	2776.2	4676.8	2803.6	4677.2	2835.9	4676.4
2851.9	4677.1	2866.1	4677.5	2886.7	4674.8	2923.5	4674.5	2935.7	4675.8
2936.7	4674.2	2969	4673.8	3015.8	4674.8	3035.2	4678	3046.5	4681.8
3052.3	4683.3	3058.1	4684.7	3063.4	4684.7	3069.9	4682.8	3085.4	4683.1
3099.5	4680.8	3105.1	4680.8	3108.5	4691.8	3134.7	4691.3	3149.6	4691.2
3168.2	4695.3	3186.6	4702.4	3201.3	4703	3223.5	4703.5	3234.8	4704.1
3260.7	4704.7	3272.5	4704.6	3293.4	4698.5	3314.6	4691.9	3333.6	4687.6
3350.7	4689.2	3376.3	4689.2	3397.8	4687.7	3421.7	4685.2	3441.2	4685.8
3461.3	4686	3468.7	4685.3						

#Mann= 3 , -1 , 0  
 1000 .08 0 2611.7 .03 0 3035.2 .05 0  
 Levee=-1,2310,4720,-1,3468.7,4700,,  
 #XS Ineff= 2 , 0  
 0 2866.1 4677.5 3260.7 0 4704.7  
 Permanent Ineff=  
 F F  
 Bank Sta=2866.1,3260.7  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 5300 , 295,280,270  
 Node Last Edited Time=Mar/03/2005 08:46:53  
 #Sta/Elev= 93

1000	4718.9	1051.5	4717.5	1115	4715.7	1177.6	4714.1	1244.1	4711.9
1306.4	4710.3	1371.5	4707.6	1428.9	4706.7	1460.7	4705.8	1508.4	4705.5
1557.3	4704.9	1599.7	4703.3	1637.1	4701.8	1677.8	4699.4	1735	4695.4
1784.7	4692.7	1841.3	4690.2	1865.1	4690.6	1888	4690.1	1943.6	4689.5
1998	4688.6	2056.1	4688	2111.6	4687.6	2137.9	4687.6	2161.2	4688.2
2205.8	4688.4	2253.9	4687.9	2291.9	4688.5	2324.4	4678.3	2338.1	4678.3
2361.4	4676.8	2409	4678.5	2417	4675.5	2521.6	4675.5	2594.1	4675.7
2641.5	4675.7	2662.5	4674.4	2671	4675.2	2702.8	4676.1	2734.2	4676.9
2758.8	4672.7	2795.6	4672.5	2807.8	4674.9	2808.8	4672.6	2841.1	4672.2
2854.8	4672.9	2902.2	4672.4	2912	4672.7	2923.2	4678.1	2933.2	4679.3
2962.9	4679.2	2977.7	4679.6	3005.5	4681.5	3025.3	4678.1	3036.9	4680
3043.8	4682	3050.7	4682	3062	4680.2	3070.6	4680.2	3078.4	4680
3091.6	4677.9	3094.3	4695.2	3142.2	4693.9	3180.1	4692.9	3206	4692.4
3219.8	4691.2	3237.1	4688.4	3264.1	4688.6	3285.6	4683.7	3299.4	4680.9
3311	4682	3328.5	4681.3	3370.2	4681.9	3408.8	4681.2	3444.2	4681.7
3476.9	4681.7	3512.4	4680.4	3525	4680.5	3528.8	4679.1	3548.7	4679.7
3573.2	4680.6	3603.9	4681.7	3636.9	4682.7	3680.9	4683.7	3711.2	4684.7
3753.9	4684.7	3798.7	4685.2	3834.6	4686	3879.5	4685.9	3925.3	4686.2
3964.1	4685.9	3994.7	4686.9	4002.1	4686.8				

#Mann= 3 , -1 , 0  
 1000 .08 0 2409 .03 0 2923.2 .05 0  
 Levee=-1,2331.6,4720,-1,3107.7,4720,,  
 Bank Sta=2409,3005.5

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,5200 ,380,375,350

Node Last Edited Time=Mar/03/2005 08:46:44

#Sta/Elev= 83

1000	4719.3	1022.3	4720	1027.1	4720.6	1051.2	4719	1098.2	4717.6
1161	4716.3	1221.8	4715.3	1283.4	4714.7	1327.8	4713.4	1367.8	4711.8
1379.6	4710.7	1404.6	4706.6	1411.6	4705.5	1434.8	4705.6	1460.9	4705.2
1494.7	4702.7	1540.7	4698.6	1600.5	4693.1	1660.5	4689	1722.8	4687.7
1777.3	4687.3	1841	4686.5	1865	4687.2	1888.4	4686.4	1912.9	4686.5
1972.5	4686.3	2027.6	4686.6	2064.6	4686.4	2078.1	4686.2	2134.1	4684.5
2140.1	4685.3	2168.6	4685.6	2195.1	4692.4	2203.9	4688.4	2231.1	4685.2
2253.9	4684.8	2282	4678.5	2301.9	4678.6	2312.4	4675.2	2327.5	4673.9
2377.3	4674.3	2432.4	4674.5	2487.3	4673.8	2535.1	4674.1	2575.8	4674.6
2592.9	4674.3	2605.7	4671.5	2642.5	4671.3	2654.7	4672.7	2658.1	4671.3
2690.4	4671.1	2729.8	4671.5	2738.1	4674.5	2802.3	4674.5	2810.9	4677.9
2850.6	4678.6	2892	4679.3	2934.9	4678	2954	4679	2964.4	4678.6
2967.7	4680	2978.7	4680	2990.4	4678.6	2999.7	4678.4	3011.2	4677.2
3028.6	4682.4	3085.4	4683.4	3092.8	4681.4	3134.2	4679.2	3153.9	4677.9
3180.7	4677.9	3215.2	4678.9	3260.8	4679.3	3312	4679.2	3356.3	4679.1
3406	4678.9	3455.9	4679.4	3489.7	4679.9	3503.1	4681.3	3513.5	4681.3
3516.2	4681	3538.7	4681.1	3556.4	4681.1				

#Mann= 3 , -1 , 0

1000	.08	0	2432.4	.03	0	2810.9	.05	0
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Levee=-1,2320,4720,-1,3010.4,4720,,

Bank Sta=2575.8,2810.9

Exp/Cntr=0.3,0.1

Chan Stop Cuts=-1

Use User Specified Reach Order=0

User Specified Reach Order=Fountain Creek ,Reach1

APPENDIX B

# Arkansas River Models

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**APPENDIX B**  
**ARKANSAS RIVER MODELS**

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach 1	4060	PF 1	20000.00	4642.50	4653.34	4653.34	4657.68	0.003028	16.73	1195.23	138.85	1.01
Reach 1	4060	PF 2	8000.00	4642.50	4648.52	4648.52	4651.29	0.003461	13.36	598.87	108.65	1.00
Reach 1	4035	PF 1	20000.00	4641.80	4649.46	4649.46	4652.90	0.003195	14.90	1342.25	196.09	1.00
Reach 1	4035	PF 2	8000.00	4641.80	4646.01	4646.01	4648.02	0.003757	11.37	703.42	175.22	1.00
Reach 1	4032	PF 1	20000.00	4639.87	4647.57	4649.85	4650.36	0.002362	13.41	1491.16	200.35	0.87
Reach 1	4032	PF 2	8000.00	4639.87	4645.94		4646.67	0.000832	6.86	1166.80	197.56	0.50
Reach 1	4031	PF 1	20000.00	4639.78	4647.54	4646.76	4650.29	0.002295	13.29	1504.72	200.47	0.85
Reach 1	4031	PF 2	8000.00	4639.78	4645.93		4646.64	0.000794	6.76	1183.62	197.71	0.49
Reach 1	4030	PF 1	20000.00	4639.50	4647.54		4650.03	0.002007	12.65	1580.77	208.57	0.81
Reach 1	4030	PF 2	8000.00	4639.50	4645.92		4646.56	0.000685	6.42	1245.64	203.77	0.46
Reach 1	4029	PF 1	20000.00	4639.20	4647.45		4649.87	0.001869	12.46	1604.77	201.61	0.78
Reach 1	4029	PF 2	8000.00	4639.20	4645.90		4646.50	0.000596	6.18	1294.31	198.91	0.43
Reach 1	4028	PF 1	20000.00	4639.10	4647.30	4646.14	4649.79	0.004373	12.65	1581.29	200.59	0.79
Reach 1	4028	PF 2	8000.00	4639.10	4645.89		4646.48	0.001312	6.16	1299.34	197.01	0.42
Reach 1	4020	PF 1	20000.00	4637.00	4643.90	4643.90	4646.52	0.010514	12.99	1539.89	296.80	1.00
Reach 1	4020	PF 2	8000.00	4637.00	4645.68		4645.90	0.000677	3.81	2129.02	367.16	0.26
Reach 1	4010	PF 1	20000.00	4633.60	4643.68		4643.79	0.000840	3.25	7648.01	1155.45	0.25
Reach 1	4010	PF 2	8000.00	4633.60	4645.70		4645.71	0.000044	1.00	10057.82	1224.63	0.07
Reach 1	4008	PF 1	20000.00	4632.20	4643.43	4640.21	4643.46	0.000151	1.76	15057.38	1924.32	0.12
Reach 1	4008	PF 2	8000.00	4632.20	4645.68	4639.16	4645.69	0.000011	0.54	19479.61	1986.73	0.03
Reach 1	4007	PF 1	20000.00	4630.70	4642.17		4642.89	0.001456	6.80	2941.90	2172.40	0.41
Reach 1	4007	PF 2	8000.00	4630.70	4645.59		4645.65	0.000077	1.95	4103.02	2296.29	0.10
Reach 1	4006	PF 1	20000.00	4629.70	4641.29		4641.74	0.001151	5.39	3708.18	1500.75	0.35
Reach 1	4006	PF 2	8000.00	4629.70	4645.56		4645.59	0.000039	1.36	5887.38	1501.36	0.07
Reach 1	4002	PF 1	20000.00	4628.70	4640.59		4640.95	0.000949	4.83	4138.28	577.85	0.32
Reach 1	4002	PF 2	8000.00	4628.70	4645.54		4645.56	0.000027	1.14	7017.07	583.71	0.06
Reach 1	4001	PF 1	20000.00	4628.70	4640.45	4636.61	4640.92	0.001303	5.49	3640.21	519.11	0.37
Reach 1	4001	PF 2	8000.00	4628.70	4645.54	4632.80	4645.56	0.000035	1.22	6536.19	583.71	0.06
Reach 1	3999.5		Bridge									
Reach 1	3999	PF 1	20000.00	4628.70	4640.42		4640.90	0.001321	5.52	3624.60	519.00	0.37
Reach 1	3999	PF 2	8000.00	4628.70	4645.50		4645.53	0.000035	1.23	6517.67	583.69	0.06
Reach 1	3998	PF 1	20000.00	4628.70	4640.46		4640.84	0.001008	4.92	4062.13	577.40	0.33
Reach 1	3998	PF 2	8000.00	4628.70	4645.50		4645.52	0.000027	1.14	6896.84	583.69	0.06
Reach 1	3990	PF 1	20000.00	4628.50	4639.97		4640.63	0.001536	6.72	3318.96	470.14	0.41
Reach 1	3990	PF 2	8000.00	4628.50	4645.48		4645.52	0.000040	1.53	5915.29	471.23	0.07
Reach 1	3900	PF 1	20000.00	4628.00	4638.65	4636.45	4639.66	0.003162	8.08	2534.83	597.98	0.57
Reach 1	3900	PF 2	8000.00	4628.00	4645.47	4633.84	4645.50	0.000036	1.38	6755.90	624.13	0.07

Geom Title=Arkansas geo  
Program Version=3.12  
Viewing Rectangle= 0 , 1 , 1 , 0

River Reach=Arkansas , Reach 1  
Reach XY= 2  
.4035294 .8776471 .4035294 .2870588  
Rch Text X Y=0.4035294,0.73  
Reverse River Text= 0

Type RM Length L Ch R = 1 , 4060 , 380,380,380  
Node Last Edited Time=Feb/23/2005 16:05

#Sta/Elev= 12  
2189 4672.8 2206 466 235 4643.8 2240 4642.5  
2325 4642.5 2330 464 8.1 4651.1 2400 4662  
2420 4665.9 3190 466  
#Mann= 3 , 0 , 0  
2189 .025 0 2: 120 .025 0  
Bank Sta=2189,2420  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 4031 , 26,571.26,571.26  
Node Last Edited Time=Mar/07/2005 08:56:04

#Sta/Elev= 11  
2060 4673.7 2082 4657.7 2106 4644.1 2120 4641.8 2275 4641.8  
2276 4644.1 2279 4647.2 2289 4648 2302 4653.2 2317 4663.2  
2326 4669  
#Mann= 3 , 0 , 0  
2060 .025 0 2060 .02 0 2326 .025 0  
Bank Sta=2060,2326  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 4032 , 25,25,25

BEGIN DESCRIPTION:  
Upstream Transition  
END DESCRIPTION:  
Node Last Edited Time=Mar/09/2005 14:45:50

#Sta/Elev= 10  
115.29 4674.69 125 4665.46 136.95 4666.28 162.73 4649.94 171.71 4649.81  
175.27 4639.87 362.45 4639.87 402.18 4669.24 441.48 4667.97 447.6 4674.95  
#Mann= 3 , 0 , 0  
115.29 .025 0 136.95 .02 0 402.18 .25 0  
Bank Sta=136.95,402.18  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 4031 , 83.74,83.74,83.74

BEGIN DESCRIPTION:  
Upstream Edge of Bridge  
END DESCRIPTION:  
Node Last Edited Time=Mar/09/2005 14:57:00

#Sta/Elev= 10  
116.45 4674.61 124.53 4665.71 138.42 4666.05 163.84 4649.98 173.09 4649.82  
176.69 4639.78 363.9 4639.78 403.64 4669.23 442.39 4667.54 447.6 4675.12  
#Mann= 3 , 0 , 0  
116.45 .025 0 138.42 .02 0 403.64 .25 0  
Bank Sta=138.42,403.64  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 4030 , 71.46,71.46,71.46

Node Last Edited Time=Mar/09/2005 14:56:54

#Sta/Elev= 8  
1550 4669 1572 4652.6 1592 4639.9 1595 4639.5 1775 4639.5  
1778 4639.9 1798 4654.4 1817 4665.1  
#Mann= 3 , 0 , 0

1550 .025 0 1550 .02 0 1817 .025 0  
Bank Sta=1550,1817  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,4029 ,25,25,25

BEGIN DESCRIPTION:

Downstream Edge of Bridge

END DESCRIPTION:

Node Last Edited Time=Mar/09/2005 14:56:48

#Sta/Elev= 8

165.73	4664.3	170.7	4665.42	181.32	4665.32	207.06	4649.23	216.45	4648.25
219.97	4639.2	407.21	4639.2	447.6	4669.07				

#Mann= 3 , 0 , 0

165.73	.025	0	181.32	.02	0	447.6	.025	0
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Bank Sta=181.32,447.6

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,4028 ,503.54,503.54,503.54

BEGIN DESCRIPTION:

Downstream Transition

END DESCRIPTION:

Node Last Edited Time=Mar/07/2005 10:17:15

#Sta/Elev= 8

0	4669.04	42.52	4639.1	227.58	4639.1	232.19	4648.84	240.49	4648.94
266.39	4665.22	275.65	4665.55	283.3	4664.27				

#Mann= 3 , 0 , 0

0	.04	0	0	.03	0	266.39	.04	0
---	-----	---	---	-----	---	--------	-----	---

Bank Sta=0,266.39

Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,4020 ,570,570,570

Node Last Edited Time=Feb/23/2005 14:39:37

#Sta/Elev= 29

2572	4656.9	2607	4645.4	2623	4644.6	2639	4644.6	2649	4645.5
2662	4648.8	2685	4648.5	2717	4650.8	2733	4645	2754	4640.7
2777	4639.6	2802	4638.6	2820	4637	2880	4637	3000	4638.6
3014	4643.3	3027	4644	3037	4646.2	3054	4642.1	3063	4648.2
3073	4650	3093	4649	3121	4649	3144	4650.8	3162	4651.2
3177	4653.6	3197	4654.5	3211	4658.4	3230	4659.9		

#Mann= 3 , 0 , 0

2572	.06	0	2717	.035	0	3073	.06	0
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Bank Sta=2717,3073

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4010 ,1000,1050,1050

Node Last Edited Time=Feb/23/2005 14:32:42

#Sta/Elev= 37

1124	4654.4	1150	4649	1180	4641.7	1198	4644.2	1223	4643.1
1248	4643.1	1274	4642.4	1310	4639	1324	4633.6	1772	4633.6
1804	4638.8	1823	4637.5	1844	4637.5	1867	4640.2	1884	4641.6
1901	4641.8	1940	4640	1955	4643.7	1960	4645.7	1975	4645.7
1991	4641.5	2037	4639.7	2059	4639.7	2070	4636	2120	4633.6
2145	4633.6	2182	4636	2196	4639.1	2216	4639.9	2243	4640.5
2276	4639.7	2312	4640.5	2341	4639.9	2362	4638.2	2372	4644.4
2408	4645.9	2430	4649.1						

#Mann= 3 , 0 , 0

1124	.06	0	1975	.035	0	2430	.06	0
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Bank Sta=1975,2430

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4008 ,1000,1090,1150

Node Last Edited Time=Feb/23/2005 16:06:46

#Sta/Elev= 32

400	4653.8	450	4640	660	4640	700	4633.6	1772	4633.6
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1804	4637.4	1823	4636.1	1844	4636.1	1867	4638.8	1884	4640.2
1901	4640.4	1940	4638.6	1955	4642.3	1960	4644.3	1975	4644.3
1991	4640.1	2037	4638.3	2059	4638.3	2070	4634.6	2120	4632.2
2145	4632.2	2182	4634.6	2196	4637.7	2216	4638.5	2243	4639
2276	4638.3	2312	4639	2341	4638.5	2362	4636.8	2372	4643
2408	4644.5	2430	4647.7						

#Mann= 3 , 0 , 0  
 400 .06 0 1975 .035 0 2430 .06 0

#XS Ineff= 2 , 0  
 0 1975 4640.2 2430 0 4640.2

Permanent Ineff=  
 F F  
 Bank Sta=1975,2430  
 Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4007 ,750,770,800  
 Node Last Edited Time=Feb/23/2005 16:06:05

#Sta/Elev= 19

1010	4653.6	1030	4642.5	1210	4642	1370	4640	1450	4638
1560	4633.6	2350	4633.6	2380	4638.8	2510	4638.8	2580	4636.7
2640	4633.9	2670	4630.7	2825	4630.7	2835	4636.4	2850	4640
3040	4640	3060	4633.6	3320	4633.6	3321	4650		

#Mann= 3 , 0 , 0  
 1010 .06 0 2510 .035 0 2850 .06 0

#XS Ineff= 2 , 0  
 0 2510 2850 0

Permanent Ineff=  
 F F  
 Bank Sta=2510,2850  
 Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4006 ,650,699,750  
 Node Last Edited Time=Feb/23/2005 16:05:40

#Sta/Elev= 14

2199	4650	2200	4637.9	2510	4637	2580	4635.7	2588	4635.5
2640	4632.9	2670	4629.7	2825	4629.7	2835	4635.4	2920	4637.1
3020	4638.7	3055	4633.6	3700	4633.6	3701	4650		

#Mann= 3 , 0 , 0  
 2199 .06 0 2510 .035 0 3020 .06 0

#XS Ineff= 2 , 0  
 0 2510 3020 0

Permanent Ineff=  
 F F  
 Bank Sta=2510,3020  
 Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4002 ,1,1,1  
 Node Last Edited Time=Feb/23/2005 16:53:08

#Sta/Elev= 17

2495	4650	2496	4646	2500	4639.3	2510	4636.8	2580	4634.7
2588	4634.5	2640	4631.9	2670	4628.7	2770	4628.7	2825	4628.7
2835	4634.4	2920	4636.1	3020	4637.7	3055	4632.7	3079.9	4641.6
3080	4646	3080.1	4650						

#Mann= 3 , 0 , 0  
 2495 .06 0 2496 .035 0 3080 .06 0

Bank Sta=2496,3080  
 Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4001 ,20,20,20  
 Node Last Edited Time=Feb/23/2005 16:51:42

#Sta/Elev= 18

2495	4650	2496	4646	2500	4639.3	2510	4636.8	2580	4634.7
2581	4641.5	2639	4641.5	2640	4631.9	2670	4628.7	2770	4628.7
2825	4628.7	2835	4634.4	2920	4636.1	3020	4637.7	3055	4632.7

3079.9 4641.6 3080 4646 3080.1 4650  
 #Mann= 3 , 0 , 0  
 2495 .06 0 2496 .035 0 3080 .06 0  
 Bank Sta=2496,3080  
 Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 3 ,3999.5 , , ,  
 Node Last Edited Time=Feb/23/2005 16:55:05  
 Bridge Culvert--1,0,-1,-1, 0  
 Deck Dist Width WeirC Skew NumUp NumDn MinLoCord MaxHiCord MaxSubmerge Is\_Ogee  
 0.1,0.1,2.6,0, 2, 2, , , 0.95, 0, 0,0,,  
 2000 4000  
 4646 4646  
 4641.5 4641.5  
 2000 4000  
 4646 4646  
 4641.5 4641.5  
 BR Coef=-1 , 0 , 0 , , 0 , , ,0.8,-1,,0,  
 WSPro=, , , , 1 , , , , 0 , , , , 0 , , , , -1 , -1 , -1 , 0 , 0 , 0 , 0 , 0  
 BC Design=, , , 0 , , 0 , , , , ,

Type RM Length L Ch R = 1 ,3999 ,1,1,1  
 Node Last Edited Time=Feb/23/2005 16:51:34  
 #Sta/Elev= 18  
 2495 4650 2496 4646 2500 4639.3 2510 4636.8 2580 4634.7  
 2581 4641.5 2639 4641.5 2640 4631.9 2670 4628.7 2770 4628.7  
 2825 4628.7 2835 4634.4 2920 4636.1 3020 4637.7 3055 4632.7  
 3079.9 4641.6 3080 4646 3080.1 4650  
 #Mann= 3 , 0 , 0  
 2495 .06 0 2496 .035 0 3080 .06 0  
 Bank Sta=2496,3080  
 Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,3998 ,99,99,99  
 Node Last Edited Time=Feb/23/2005 14:38:54  
 #Sta/Elev= 17  
 2495 4650 2496 4646 2500 4639.3 2510 4636.8 2580 4634.7  
 2588 4634.5 2640 4631.9 2670 4628.7 2770 4628.7 2825 4628.7  
 2835 4634.4 2920 4636.1 3020 4637.7 3055 4632.7 3079.9 4641.6  
 3080 4646 3080.1 4650  
 #Mann= 3 , 0 , 0  
 2495 .06 0 2496 .035 0 3080 .06 0  
 Bank Sta=2496,3080  
 Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,3990 ,500,400,300  
 Node Last Edited Time=Feb/23/2005 14:38:59  
 #Sta/Elev= 15  
 2479 4650 2480 4635.7 2610 4636 2615 4631 2660 4628.5  
 2715 4631 2720 4632 2735 4632 2745 4631 2800 4628.5  
 2840 4631 2850 4634 2930 4636 2950 4640 2951 4650  
 #Mann= 3 , 0 , 0  
 2479 .06 0 2610 .035 0 2950 .06 0  
 Bank Sta=2610,2950  
 Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,3900 ,660,575,580  
 Node Last Edited Time=Feb/23/2005 14:37:34  
 #Sta/Elev= 14  
 2969 4650 2970 4638.7 3190 4638 3280 4634 3285 4632  
 3320 4628 3360 4632 3400 4633 3440 4632 3500 4628  
 3545 4632 3555 4634 3580 4636 3600 4650  
 #Mann= 3 , 0 , 0  
 2969 .06 0 3190 .035 0 3600 .06 0

Bank Sta=3190,3600

Exp/Cntr=0.6,0.3

Chan Stop Cuts=-1

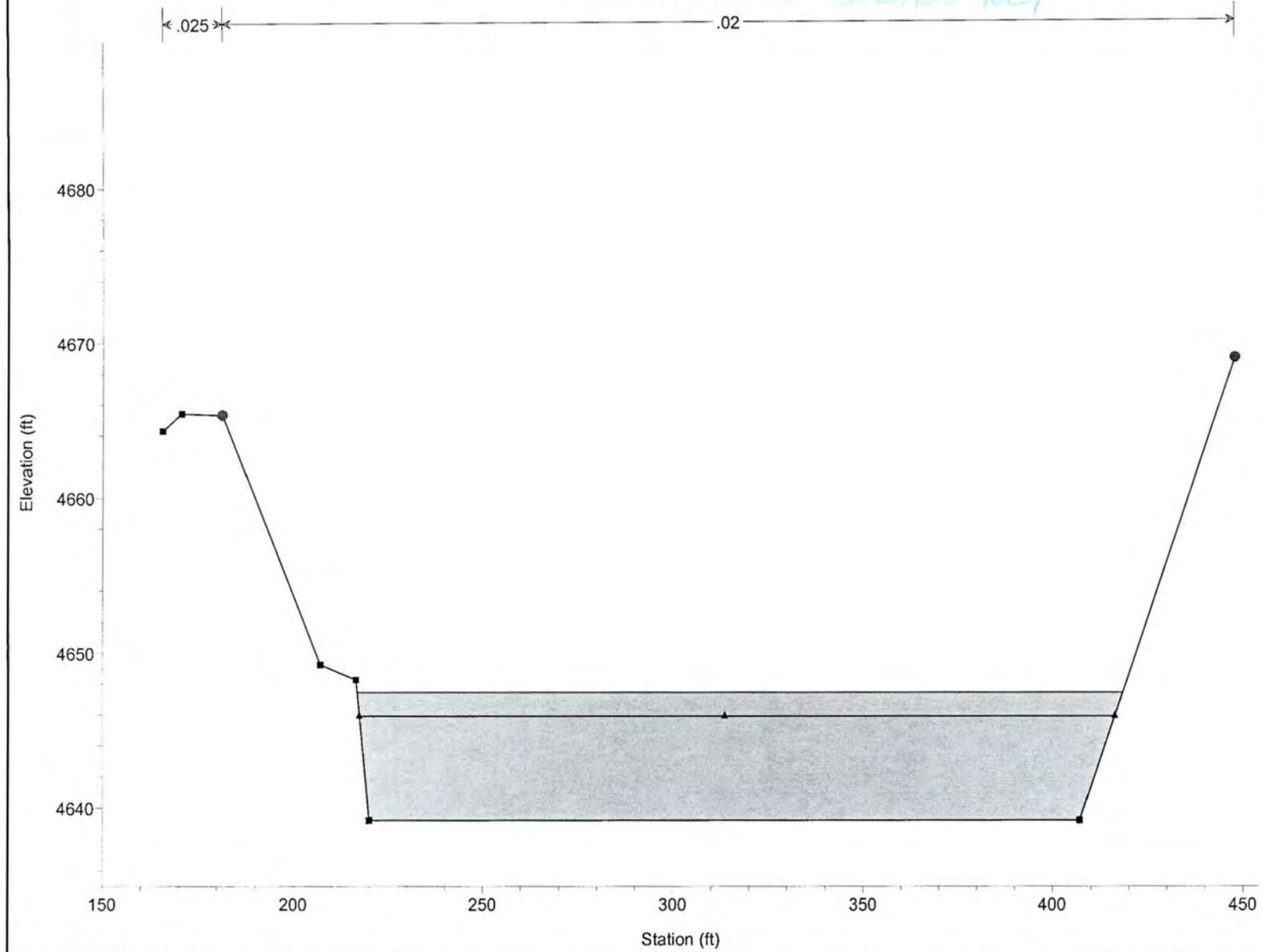
Use User Specified Reach Order=0

User Specified Reach Order=Arkansas ,Reach 1

Arkansas River Plan: Plan 03 06/30/2005

Downstream Edge of Bridge

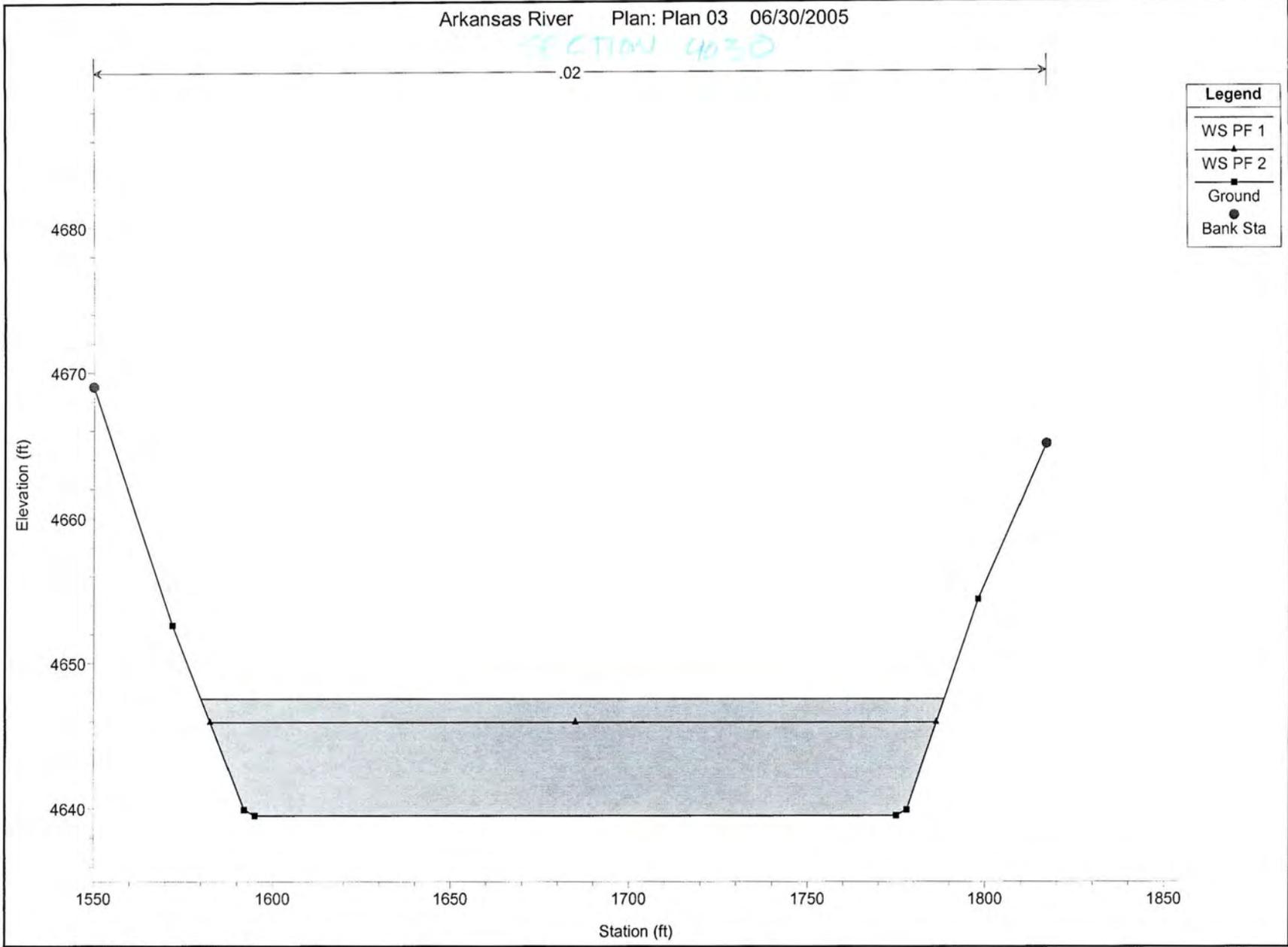
SECTION 4029



1 in Horiz. = 40 ft 1 in Vert. = 10 ft

SECTION 4030

.02



Legend	
WS PF 1	—▲—
WS PF 2	—▼—
Ground	—
Bank Sta	●

1 in Horiz. = 40 ft 1 in Vert. = 10 ft

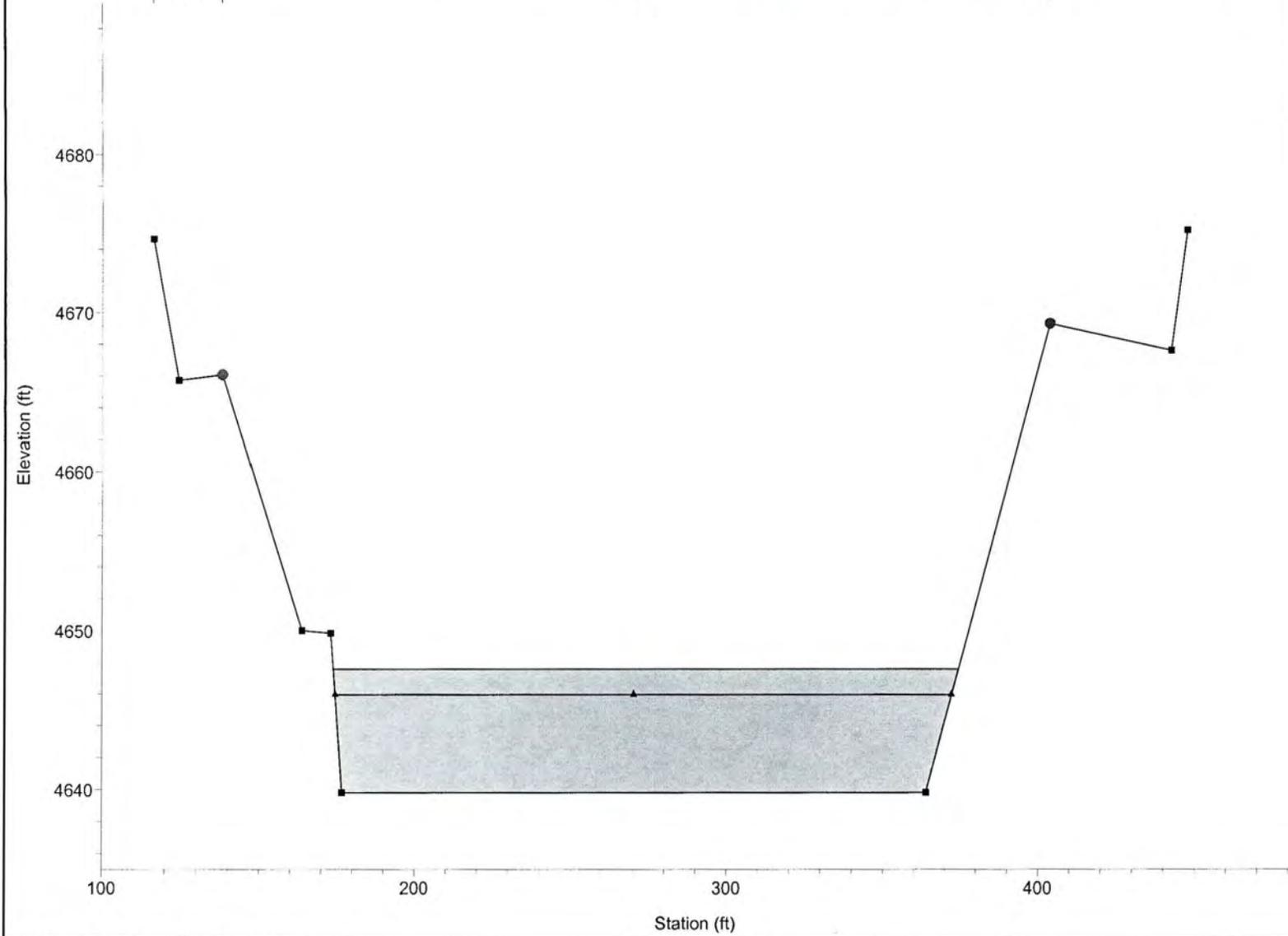
Arkansas River Plan: Plan 03 06/30/2005

Upstream Edge of Bridge

*Station 4031*

← .025 →      .02      ← .25 →

Legend	
WS PF 1	▲
WS PF 2	●
Ground	■
Bank Sta	●



1 in Horiz. = 50 ft 1 in Vert. = 10 ft

4/21/2016  
 Family  
 Arkansas  
 IMPROVED CHANNELS  
 FLOWING IN THE DIRECTION OF THE  
 FLOWING IN THE DIRECTION OF THE

HEC-RAS Plan: Plan 03 River: Arkansas Reach: Reach 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach 1	4060	PF 1	20000.00	4642.50	4653.34	4653.34	4657.68	0.003028	16.73	1195.23	138.85	1.01
Reach 1	4060	PF 2	8000.00	4642.50	4648.52	4648.52	4651.29	0.003461	13.36	598.87	108.65	1.00
Reach 1	4035	PF 1	20000.00	4641.80	4649.46	4649.46	4652.90	0.003187	14.89	1343.30	196.11	1.00
Reach 1	4035	PF 2	8000.00	4641.80	4646.01	4646.01	4648.02	0.003757	11.37	703.42	175.22	1.00
Reach 1	4032	PF 1	20000.00	4639.87	4647.87		4650.45	0.002081	12.89	1551.31	200.86	0.82
Reach 1	4032	PF 2	8000.00	4639.87	4645.96		4646.68	0.000821	6.83	1171.43	197.60	0.49
Reach 1	4031	PF 1	20000.00	4639.78	4647.48	4646.84	4650.36	0.002677	13.61	1469.96	197.37	0.88
Reach 1	4031	PF 2	8000.00	4639.78	4645.93		4646.66	0.000889	6.87	1164.98	194.71	0.49
Reach 1	4030	PF 1	20000.00	4639.50	4647.44		4650.07	0.002384	13.02	1535.88	205.28	0.84
Reach 1	4030	PF 2	8000.00	4639.50	4645.91		4646.57	0.000771	6.53	1224.82	200.75	0.47
Reach 1	4029	PF 1	20000.00	4639.20	4647.31		4649.89	0.002265	12.89	1551.23	198.36	0.81
Reach 1	4029	PF 2	8000.00	4639.20	4645.89		4646.51	0.000675	6.29	1271.61	195.89	0.44
Reach 1	4028	PF 1	20000.00	4639.10	4647.30	4646.14	4649.79	0.004373	12.65	1581.29	200.59	0.79
Reach 1	4028	PF 2	8000.00	4639.10	4645.89		4646.48	0.001312	6.16	1299.34	197.91	0.42
Reach 1	4020	PF 1	20000.00	4637.00	4643.90	4643.90	4646.52	0.010514	12.99	1539.89	296.80	1.00
Reach 1	4020	PF 2	8000.00	4637.00	4645.68		4645.90	0.000677	3.81	2129.02	367.16	0.26
Reach 1	4010	PF 1	20000.00	4633.60	4643.68		4643.79	0.000640	3.25	7648.01	1155.45	0.25
Reach 1	4010	PF 2	8000.00	4633.60	4645.70		4645.71	0.000044	1.00	10057.82	1224.63	0.07
Reach 1	4008	PF 1	20000.00	4632.20	4643.43	4640.21	4643.46	0.000151	1.76	15057.38	1924.32	0.12
Reach 1	4008	PF 2	8000.00	4632.20	4645.88	4639.16	4645.69	0.000011	0.54	19479.61	1986.73	0.03
Reach 1	4007	PF 1	20000.00	4630.70	4642.17		4642.89	0.001456	6.80	2941.90	2172.40	0.41
Reach 1	4007	PF 2	8000.00	4630.70	4645.59		4645.65	0.000077	1.95	4103.02	2296.29	0.10
Reach 1	4006	PF 1	20000.00	4629.70	4641.29		4641.74	0.001151	5.39	3708.18	1500.75	0.35
Reach 1	4006	PF 2	8000.00	4629.70	4645.56		4645.59	0.000039	1.36	5887.38	1501.36	0.07
Reach 1	4002	PF 1	20000.00	4628.70	4640.59		4640.95	0.000949	4.83	4138.28	577.85	0.32
Reach 1	4002	PF 2	8000.00	4628.70	4645.54		4645.56	0.000027	1.14	7017.07	583.71	0.06
Reach 1	4001	PF 1	20000.00	4628.70	4640.45	4636.61	4640.92	0.001303	5.49	3640.21	519.11	0.37
Reach 1	4001	PF 2	8000.00	4628.70	4645.54	4632.80	4645.56	0.000035	1.22	6536.19	583.71	0.06
Reach 1	3999.5		Bridge									
Reach 1	3999	PF 1	20000.00	4628.70	4640.42		4640.90	0.001321	5.52	3624.50	519.00	0.37
Reach 1	3999	PF 2	8000.00	4628.70	4645.50		4645.53	0.000035	1.23	6517.67	583.69	0.06
Reach 1	3998	PF 1	20000.00	4628.70	4640.46		4640.84	0.001008	4.92	4062.13	577.40	0.33
Reach 1	3998	PF 2	8000.00	4628.70	4645.50		4645.52	0.000027	1.14	6996.84	583.69	0.06
Reach 1	3990	PF 1	20000.00	4628.50	4639.97		4640.63	0.001536	6.72	3318.96	470.14	0.41
Reach 1	3990	PF 2	8000.00	4628.50	4645.48		4645.52	0.000040	1.53	5915.29	471.23	0.07
Reach 1	3900	PF 1	20000.00	4628.00	4638.65	4636.45	4639.66	0.003162	8.08	2534.83	597.98	0.57
Reach 1	3900	PF 2	8000.00	4628.00	4645.47	4633.84	4645.50	0.000036	1.38	6755.90	624.13	0.07

Geom Title=Arkansas geo  
Program Version=3.12  
Viewing Rectangle= 0 , 1 , 1 , 0

River Reach=Arkansas , Reach 1  
Reach XY= 2  
.4035294 .8776471 .4035294 .2870588  
Rch Text X Y=0.4035294,0.73  
Reverse River Text= 0

Type RM Length L Ch R = 1 , 4060 , 380,380,380  
Node Last Edited Time=Feb/23/2005 16:05:13

#Sta/Elev= 12  
2189 4672.8 2206 4663.5 2228 4647.4 4642.5  
2325 4642.5 2330 4643.8 2335 4648.5 2 4662  
2420 4665.9 3190 4665.9  
#Mann= 3 , 0 , 0  
2189 .025 0 2189 .02 0 2  
Bank Sta=2189,2420  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 4035 , 571.26,571.26,571.26  
Node Last Edited Time=Mar/07/2005 08:56:04

#Sta/Elev= 11  
2060 4673.7 2082 4657.7 2106 4644.1 2120 4641.8 2275 4641.8  
2276 4644.1 2279 4647.2 2289 4648 2302 4653.2 2317 4663.2  
2326 4669  
#Mann= 3 , 0 , 0  
2060 .025 0 2060 .02 0 2326 .025 0  
Bank Sta=2060,2326  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 4032 , 25,25,25

BEGIN DESCRIPTION:  
Upstream Transition  
END DESCRIPTION:  
Node Last Edited Time=Mar/09/2005 14:45:50

#Sta/Elev= 10  
115.29 4674.69 125 4665.46 136.95 4666.28 162.73 4649.94 171.71 4649.81  
175.27 4639.87 362.45 4639.87 402.18 4669.24 441.48 4667.97 447.6 4674.95  
#Mann= 3 , 0 , 0  
115.29 .025 0 136.95 .02 0 402.18 .25 0  
Bank Sta=136.95,402.18  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 4031 , 83.74,83.74,83.74

BEGIN DESCRIPTION:  
Upstream Edge of Bridge  
END DESCRIPTION:  
Node Last Edited Time=Mar/09/2005 14:52:33

#Sta/Elev= 10  
116.45 4674.61 124.53 4665.71 138.42 4666.05 163.84 4649.98 173.09 4649.82  
176.69 4639.78 363.9 4639.78 403.64 4669.23 442.39 4667.54 447.6 4675.12  
#Mann= 3 , 0 , 0  
116.45 .025 0 138.42 .02 0 403.64 .25 0  
#Block Obstruct= 1 , -1  
244.53 247.53 4680  
Bank Sta=138.42,403.64  
Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 , 4030 , 71.46,71.46,71.46  
Node Last Edited Time=Mar/09/2005 14:52:17

#Sta/Elev= 8  
1550 4669 1572 4652.6 1592 4639.9 1595 4639.5 1775 4639.5

1778 4639.9 1798 4654.4 1817 4665.1  
 #Mann= 3 , 0 , 0  
 1550 .025 0 1550 .02 0 1817 .025 0  
 #Block Obstruct= 1 , -1  
 1658.33 1661.33 4680  
 Bank Sta=1550,1817  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,4029 ,25,25,25  
 BEGIN DESCRIPTION:  
 Downstream Edge of Bridge  
 END DESCRIPTION:  
 Node Last Edited Time=Mar/09/2005 14:55:00  
 #Sta/Elev= 8  
 165.73 4664.3 170.7 4665.42 181.32 4665.32 207.06 4649.23 216.45 4648.25  
 219.97 4639.2 407.21 4639.2 447.6 4669.07  
 #Mann= 3 , 0 , 0  
 165.73 .025 0 181.32 .02 0 447.6 .025 0  
 #Block Obstruct= 1 , -1  
 291.53 294.53 4680  
 Bank Sta=181.32,447.6  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,4028 ,503.54,503.54,503.54  
 BEGIN DESCRIPTION:  
 Downstream Transition  
 END DESCRIPTION:  
 Node Last Edited Time=Mar/07/2005 10:17:15  
 #Sta/Elev= 8  
 0 4669.04 42.52 4639.1 227.58 4639.1 232.19 4648.84 240.49 4648.94  
 266.39 4665.22 275.65 4665.55 283.3 4664.27  
 #Mann= 3 , 0 , 0  
 0 .04 0 0 .03 0 266.39 .04 0  
 Bank Sta=0,266.39  
 Exp/Cntr=0.3,0.1

Type RM Length L Ch R = 1 ,4020 ,570,570,570  
 Node Last Edited Time=Feb/23/2005 14:39:37  
 #Sta/Elev= 29  
 2572 4656.9 2607 4645.4 2623 4644.6 2639 4644.6 2649 4645.5  
 2662 4648.8 2685 4648.5 2717 4650.8 2733 4645 2754 4640.7  
 2777 4639.6 2802 4638.6 2820 4637 2880 4637 3000 4638.6  
 3014 4643.3 3027 4644 3037 4646.2 3054 4642.1 3063 4648.2  
 3073 4650 3093 4649 3121 4649 3144 4650.8 3162 4651.2  
 3177 4653.6 3197 4654.5 3211 4658.4 3230 4659.9  
 #Mann= 3 , 0 , 0  
 2572 .06 0 2717 .035 0 3073 .06 0  
 Bank Sta=2717,3073  
 Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4010 ,1000,1050,1050  
 Node Last Edited Time=Feb/23/2005 14:32:42  
 #Sta/Elev= 37  
 1124 4654.4 1150 4649 1180 4641.7 1198 4644.2 1223 4643.1  
 1248 4643.1 1274 4642.4 1310 4639 1324 4633.6 1772 4633.6  
 1804 4638.8 1823 4637.5 1844 4637.5 1867 4640.2 1884 4641.6  
 1901 4641.8 1940 4640 1955 4643.7 1960 4645.7 1975 4645.7  
 1991 4641.5 2037 4639.7 2059 4639.7 2070 4636 2120 4633.6  
 2145 4633.6 2182 4636 2196 4639.1 2216 4639.9 2243 4640.5  
 2276 4639.7 2312 4640.5 2341 4639.9 2362 4638.2 2372 4644.4  
 2408 4645.9 2430 4649.1  
 #Mann= 3 , 0 , 0  
 1124 .06 0 1975 .035 0 2430 .06 0  
 Bank Sta=1975,2430

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4008 ,1000,1090,1150  
Node Last Edited Time=Feb/23/2005 16:06:46

#Sta/Elev= 32

400	4653.8	450	4640	660	4640	700	4633.6	1772	4633.6
1804	4637.4	1823	4636.1	1844	4636.1	1867	4638.8	1884	4640.2
1901	4640.4	1940	4638.6	1955	4642.3	1960	4644.3	1975	4644.3
1991	4640.1	2037	4638.3	2059	4638.3	2070	4634.6	2120	4632.2
2145	4632.2	2182	4634.6	2196	4637.7	2216	4638.5	2243	4639
2276	4638.3	2312	4639	2341	4638.5	2362	4636.8	2372	4643
2408	4644.5	2430	4647.7						

#Mann= 3 , 0 , 0

400	.06	0	1975	.035	0	2430	.06	0
-----	-----	---	------	------	---	------	-----	---

#XS Ineff= 2 , 0

0	1975	4640.2	2430	0	4640.2
---	------	--------	------	---	--------

Permanent Ineff=

F F

Bank Sta=1975,2430

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4007 ,750,770,800  
Node Last Edited Time=Feb/23/2005 16:06:05

#Sta/Elev= 19

1010	4653.6	1030	4642.5	1210	4642	1370	4640	1450	4638
1560	4633.6	2350	4633.6	2380	4638.8	2510	4638.8	2580	4636.7
2640	4633.9	2670	4630.7	2825	4630.7	2835	4636.4	2850	4640
3040	4640	3060	4633.6	3320	4633.6	3321	4650		

#Mann= 3 , 0 , 0

1010	.06	0	2510	.035	0	2850	.06	0
------	-----	---	------	------	---	------	-----	---

#XS Ineff= 2 , 0

0	2510	2850	0
---	------	------	---

Permanent Ineff=

F F

Bank Sta=2510,2850

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4006 ,650,699,750  
Node Last Edited Time=Feb/23/2005 16:05:40

#Sta/Elev= 14

2199	4650	2200	4637.9	2510	4637	2580	4635.7	2588	4635.5
2640	4632.9	2670	4629.7	2825	4629.7	2835	4635.4	2920	4637.1
3020	4638.7	3055	4633.6	3700	4633.6	3701	4650		

#Mann= 3 , 0 , 0

2199	.06	0	2510	.035	0	3020	.06	0
------	-----	---	------	------	---	------	-----	---

#XS Ineff= 2 , 0

0	2510	3020	0
---	------	------	---

Permanent Ineff=

F F

Bank Sta=2510,3020

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4002 ,1,1,1  
Node Last Edited Time=Feb/23/2005 16:53:08

#Sta/Elev= 17

2495	4650	2496	4646	2500	4639.3	2510	4636.8	2580	4634.7
2588	4634.5	2640	4631.9	2670	4628.7	2770	4628.7	2825	4628.7
2835	4634.4	2920	4636.1	3020	4637.7	3055	4632.7	3079.9	4641.6
3080	4646	3080.1	4650						

#Mann= 3 , 0 , 0

2495	.06	0	2496	.035	0	3080	.06	0
------	-----	---	------	------	---	------	-----	---

Bank Sta=2496,3080

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4001 ,20,20,20

Node Last Edited Time=Feb/23/2005 16:51:42

#Sta/Elev= 18

2495	4650	2496	4646	2500	4639.3	2510	4636.8	2580	4634.7
2581	4641.5	2639	4641.5	2640	4631.9	2670	4628.7	2770	4628.7
2825	4628.7	2835	4634.4	2920	4636.1	3020	4637.7	3055	4632.7
3079.9	4641.6	3080	4646	3080.1	4650				

#Mann= 3 , 0 , 0

2495	.06	0	2496	.035	0	3080	.06	0
------	-----	---	------	------	---	------	-----	---

Bank Sta=2496,3080

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 3 ,3999.5 , , ,

Node Last Edited Time=Feb/23/2005 16:55:05

Bridge Culvert--1,0,-1,-1, 0

Deck Dist Width WeirC Skew NumUp NumDn MinLoCord MaxHiCord MaxSubmerge Is\_Ogee

0.1,0.1,2.6,0, 2, 2, , , 0.95, 0, 0,0,,

2000	4000
4646	4646
4641.5	4641.5
2000	4000
4646	4646
4641.5	4641.5

BR Coef=-1 , 0 , 0 , , 0 , , ,0.8,-1,,0,

WSPro= , , , , 1 , , , , 0 , , , , 0 , , , , -1 , -1 , -1 , 0 , 0 , 0 , 0 , 0

BC Design= , , 0 , , 0 , , , , ,

Type RM Length L Ch R = 1 ,3999 ,1,1,1

Node Last Edited Time=Feb/23/2005 16:51:34

#Sta/Elev= 18

2495	4650	2496	4646	2500	4639.3	2510	4636.8	2580	4634.7
2581	4641.5	2639	4641.5	2640	4631.9	2670	4628.7	2770	4628.7
2825	4628.7	2835	4634.4	2920	4636.1	3020	4637.7	3055	4632.7
3079.9	4641.6	3080	4646	3080.1	4650				

#Mann= 3 , 0 , 0

2495	.06	0	2496	.035	0	3080	.06	0
------	-----	---	------	------	---	------	-----	---

Bank Sta=2496,3080

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,3998 ,99,99,99

Node Last Edited Time=Feb/23/2005 14:38:54

#Sta/Elev= 17

2495	4650	2496	4646	2500	4639.3	2510	4636.8	2580	4634.7
2588	4634.5	2640	4631.9	2670	4628.7	2770	4628.7	2825	4628.7
2835	4634.4	2920	4636.1	3020	4637.7	3055	4632.7	3079.9	4641.6
3080	4646	3080.1	4650						

#Mann= 3 , 0 , 0

2495	.06	0	2496	.035	0	3080	.06	0
------	-----	---	------	------	---	------	-----	---

Bank Sta=2496,3080

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,3990 ,500,400,300

Node Last Edited Time=Feb/23/2005 14:38:59

#Sta/Elev= 15

2479	4650	2480	4635.7	2610	4636	2615	4631	2660	4628.5
2715	4631	2720	4632	2735	4632	2745	4631	2800	4628.5
2840	4631	2850	4634	2930	4636	2950	4640	2951	4650

#Mann= 3 , 0 , 0

2479	.06	0	2610	.035	0	2950	.06	0
------	-----	---	------	------	---	------	-----	---

Bank Sta=2610,2950

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,3900 ,660,575,580

Node Last Edited Time=Feb/23/2005 14:37:34

```

#Sta/Elev= 14
  2969   4650   2970  4638.7   3190   4638   3280   4634   3285   4632
  3320   4628   3360   4632   3400   4633   3440   4632   3500   4628
  3545   4632   3555   4634   3580   4636   3600   4650
#Mann= 3 , 0 , 0
  2969   .06           0   3190   .035           0   3600   .06           0
Bank Sta=3190,3600
Exp/Cntr=0.6,0.3

```

```

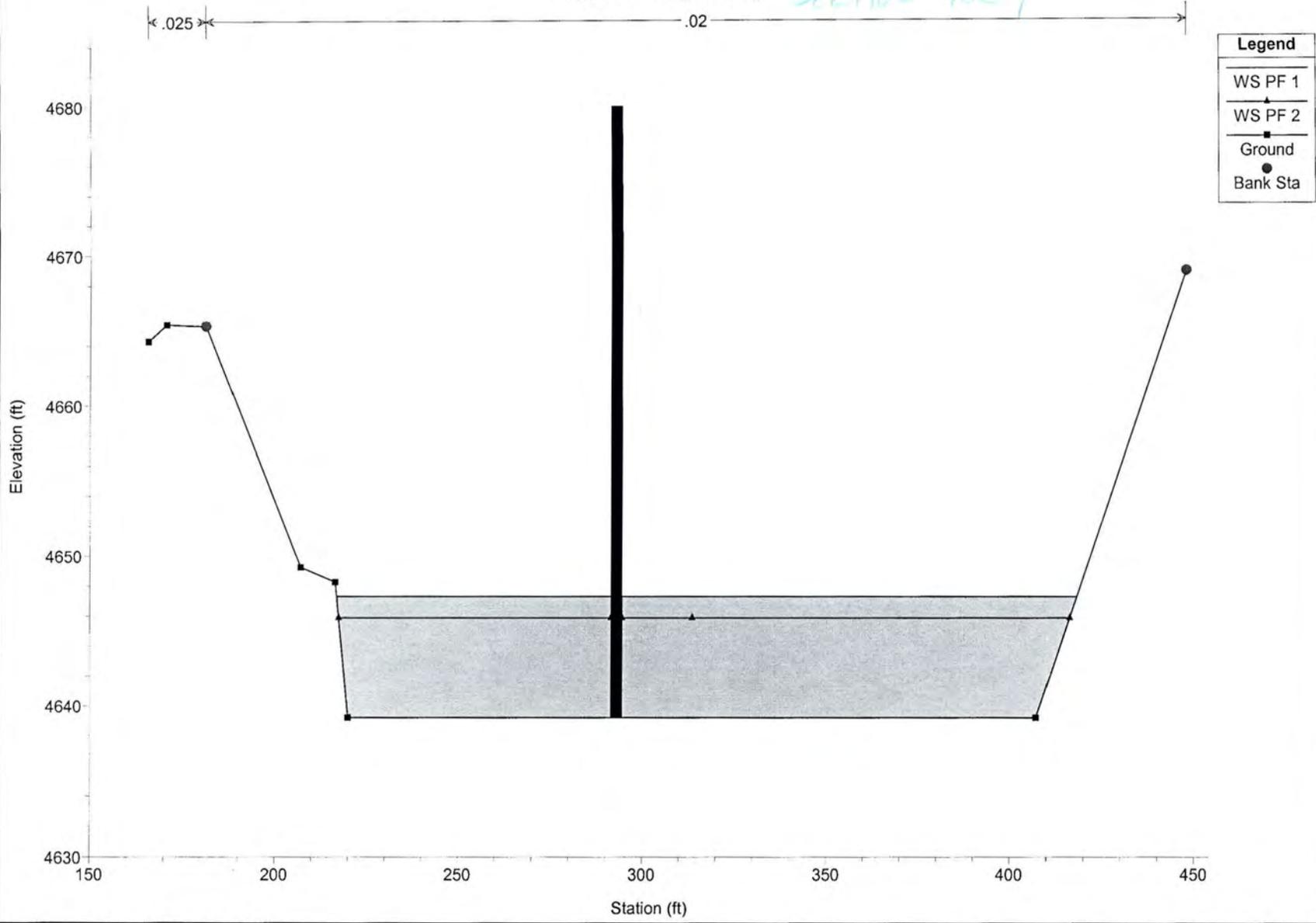
Chan Stop Cuts=-1
Use User Specified Reach Order=0
User Specified Reach Order=Arkansas ,Reach 1

```

Arkansas River Plan: Plan 03 06/30/2005

Downstream Edge of Bridge

SECTION 4029

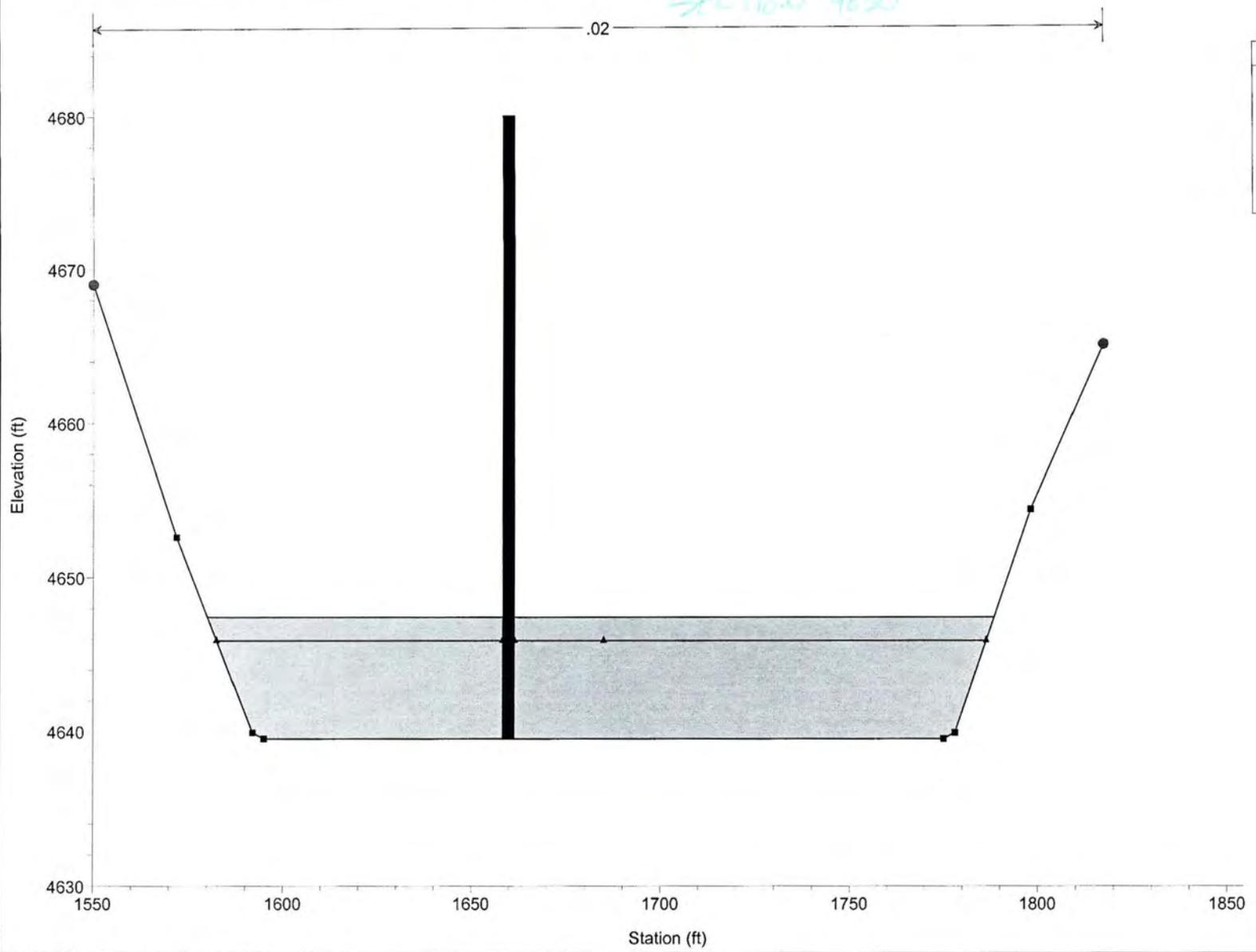


1 in Horiz. = 40 ft 1 in Vert. = 10 ft

Arkansas River Plan: Plan 03 06/30/2005

SECTION 4830

.02



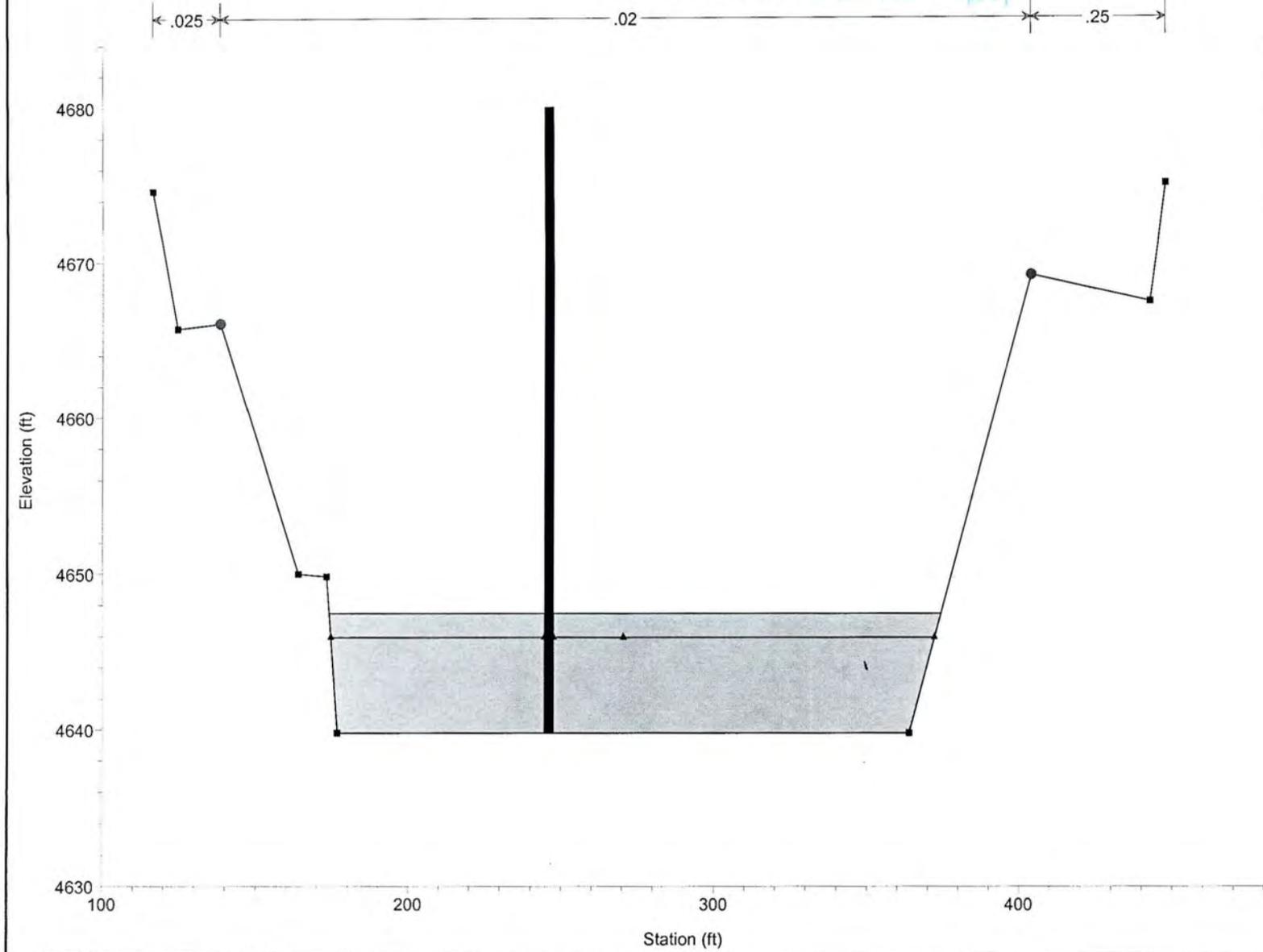
Legend	
WS PF 1	▲
WS PF 2	▲
Ground	■
Bank Sta	●

1 in Horiz. = 40 ft 1 in Vert. = 10 ft

Arkansas River Plan: Plan 03 06/30/2005

Upstream Edge of Bridge

SECTION 4031



1 in Horiz. = 50 ft 1 in Vert. = 10 ft

HEC-RAS Plan: a River Arkansas Reach: Reach 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach 1	4060	PF 1	4000.00	4641.80	4646.30		4646.72	0.000729	5.22	765.85	180.53	0.45
Reach 1	4060	PF 2	20000.00	4641.80	4651.52		4653.54	0.001324	11.41	1753.15	197.45	0.67
Reach 1	4035	PF 1	4000.00	4640.90	4645.99		4646.28	0.000401	4.26	938.95	188.89	0.34
Reach 1	4035	PF 2	20000.00	4640.90	4650.76		4652.55	0.001185	10.74	1862.27	205.94	0.63
Reach 1	4030	PF 1	4000.00	4639.50	4645.68		4645.88	0.000523	3.59	1114.23	192.48	0.26
Reach 1	4030	PF 2	20000.00	4639.50	4646.96	4646.85	4650.31	0.006879	14.69	1361.53	195.18	0.98
Reach 1	4022	PF 1	4000.00	4637.83	4645.63		4645.70	0.000141	2.14	1867.09	259.76	0.14
Reach 1	4022	PF 2	20000.00	4637.83	4645.43		4647.31	0.003442	10.99	1819.39	238.94	0.70
Reach 1	4021	PF 1	4000.00	4637.18	4645.62	4639.30	4645.68	0.000107	2.01	1991.47	252.55	0.13
Reach 1	4021	PF 2	20000.00	4637.18	4645.11	4643.32	4646.89	0.003218	10.71	1867.08	245.12	0.68
Reach 1	4020.5		Bridge									
Reach 1	4019	PF 1	4000.00	4634.15	4645.59		4645.61	0.000035	1.13	4179.72	574.01	0.06
Reach 1	4019	PF 2	20000.00	4634.15	4642.43		4643.54	0.003083	8.62	2528.66	418.00	0.57
Reach 1	4010	PF 1	4000.00	4633.60	4645.60		4645.60	0.000014	0.67	8283.53	984.08	0.04
Reach 1	4010	PF 2	20000.00	4633.60	4642.58		4642.85	0.001414	5.23	5357.39	939.15	0.38
Reach 1	4009	PF 1	4000.00	4633.52	4645.59		4645.60	0.000013	0.68	8729.28	1094.74	0.04
Reach 1	4009	PF 2	20000.00	4633.52	4642.47		4642.76	0.001463	5.38	5373.47	1032.91	0.38
Reach 1	4008	PF 1	4000.00	4632.20	4645.59	4634.98	4645.59	0.000004	0.35	16948.99	1890.09	0.02
Reach 1	4008	PF 2	20000.00	4632.20	4641.81	4637.43	4641.89	0.000479	3.02	9831.52	1777.60	0.22

Geom Title=Arkansas geo  
Program Version=3.12  
Viewing Rectangle= 0 , 1 , 1 , 0

River Reach=Arkansas , Reach 1  
Reach XY= 2  
.4035294 .8776471 .4035294 .2870588  
Rch Text X Y=0.4035294,0.73  
Reverse River Text= 0

Type RM Length L Ch R = 1 ,4060 ,680,680,680  
Node Last Edited Time=May/06/2005 13:24:14  
#Sta/Elev= 6  
0 4672.94 48.0 8 212.43 4641.8 221.82 4644.24  
267.42 4673.31  
#Mann= 3 , 0 , 0  
0 .025 0 267.42 .025 0  
Bank Sta=0,267.42  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R =  
Node Last Edited Time=Ma\_ . . . . .  
#Sta/Elev= 8  
0 4668.24 27.82 4650.21 35.67 4650.7 37.09 4644.04 39.39 4640.9  
219.36 4640.9 221.66 4643.46 263.78 4670.8  
#Mann= 3 , 0 , 0  
0 .025 0 0 .02 0 263.78 .025 0  
Bank Sta=0,263.78  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4030 ,448,448,448  
Node Last Edited Time=May/06/2005 13:18:46  
#Sta/Elev= 8  
0 4665.68 24.56 4649.53 33.91 4649.51 37.23 4643.36 40.98 4639.5  
221.03 4639.9 224.78 4643.36 265.52 4669.15  
#Mann= 3 , 0 , 0  
0 .04 0 0 .03 0 265.52 .04 0  
Bank Sta=0,265.52  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4022 ,108,108,108  
BEGIN DESCRIPTION:  
Upstream Transition  
END DESCRIPTION:  
Node Last Edited Time=May/02/2005 16:09:16  
#Sta/Elev= 13  
181.51 4664.7 246.54 4658.51 271.94 4649.66 296.19 4645.46 330.5 4645.75  
339.35 4637.63 566.73 4637.63 569.88 4645.68 579.21 4645.74 628.94 4667.96  
664.5 4670.36 746.4 4670.65 913.04 4667.86  
#Mann= 3 , 0 , 0  
181.51 .04 0 246.54 .03 0 628.94 .04 0  
Bank Sta=246.54,628.94  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4021 ,491,491,491  
BEGIN DESCRIPTION:  
Upstream Edge of Bridge  
END DESCRIPTION:  
Node Last Edited Time=May/02/2005 16:09:23  
#Sta/Elev= 15  
152.846 4644.72 204.407 4658.75 231.621 4647.62 249.546 4645.58 291.454 4646.17  
296.374 4637.18 523.412 4637.18 536.351 4645.52 598.453 4648.78 614.38 4651.15  
643.088 4646.34 693.977 4647.72 717.69 4650.01 796.979 4648.36 854.973 4649.81  
#Mann= 3 , 0 , 0

152.846 .04 0 204.407 .03 0 614.38 .04 0  
Bank Sta=204.407,614.38  
Skew Angle= 21  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4019 ,93,93,93

BEGIN DESCRIPTION:

Downstream Edge of Bridge

END DESCRIPTION:

Node Last Edited Time=May/02/2005 16:09:29

#Sta/Elev= 16

92.0984657.125	162.1544643.475	227.0934642.295	263.0554644.935	282.707	4644.45
307.185	4637.43	357.216	4638.57	389.06	4642.9
436.449	4641.63	457.109	4634.15	702.958	4634.15
715.169	4640.85	796.139	4641.78	817.732	4640.9
876.884	4648.4	956.434	4647.7		

#Mann= 3 , 0 , 0

92.098	.06	0	389.06	.035	0	796.139	.06	0
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Bank Sta=389.06,796.139

Skew Angle= 21

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4010 ,61,61,61

Node Last Edited Time=May/06/2005 13:05:24

#Sta/Elev= 24

0	4653.88	19.45	4654.24	71.23	4643.02	203.03	4640.24	228.84	4635.18
607.4	4635.18	626.68	4635.18	639.24	4637.95	677.85	4640.25	715.51	4641.19
767.03	4640.61	816.84	4637.03	836.69	4636.77	846.78	4634.94	913	4633.6
938	4633.6	1004.68	4634.79	1017.71	4640.91	1115.29	4641.84	1142.21	4640.85
1188.59	4647.58	1324.35	4648.76	1375.31	4650.51	1403.32	4658.38		

#Mann= 3 , 0 , 0

0	.06	0	715.51	.035	0	1375.31	.06	0
---	-----	---	--------	------	---	---------	-----	---

Bank Sta=715.51,1375.31

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4009 ,939,989,989

BEGIN DESCRIPTION:

Downstream Transition

END DESCRIPTION:

Node Last Edited Time=May/12/2005 10:52:10

#Sta/Elev= 20

357.674649.915	407.814654.425	456.814643.085	5564641.285	594.21	4635.18
949.58	4635.18	981.264638.505	1083.024641.075	1162.834637.085	1181.764636.845
1191.15	4633.52	1337.89	4633.52	1347.914640.185	1390.714641.905
1412.754640.705	1513.54639.895	1534.514645.255	1629.874650.475	1648.984648.775	1711.514658.345

#Mann= 3 , 0 , 0

357.67	.06	0	1083.02	.035	0	1390.71	.06	0
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Bank Sta=1083.02,1390.71

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4008 ,1000,1090,1150

Node Last Edited Time=May/06/2005 13:28:46

#Sta/Elev= 31

52.35	4653.18	90.92	4643.18	100	4642.14	138.52	4637	160.58	4636.85
168.08	4644.16	288.58	4637.39	309.37	4637.47	348.15	4635.96	370.98	4635.18
1271.23	4635.18	1286.44	4640.29	1320.3	4639.66	1366.28	4641.38	1400.31	4641.05
1411.54	4634.51	1424.23	4634.51	1483.71	4634.51	1507	4640.23	1524.23	4641.32
1580.18	4639.23	1689.54	4639.47	1703.1	4633.09	1786	4632.2	1811	4632.2
1836.814632.414	1900.17	4632.94	1936.81	4646.4	1962.12	4645.05	2013.1	4646.07	
2028.07	4653.89								

#Mann= 3 , 0 , 0

52.35	.06	0	1524.23	.035	0	1936.81	.06	0
-------	-----	---	---------	------	---	---------	-----	---

#XS Ineff= 2 , 0

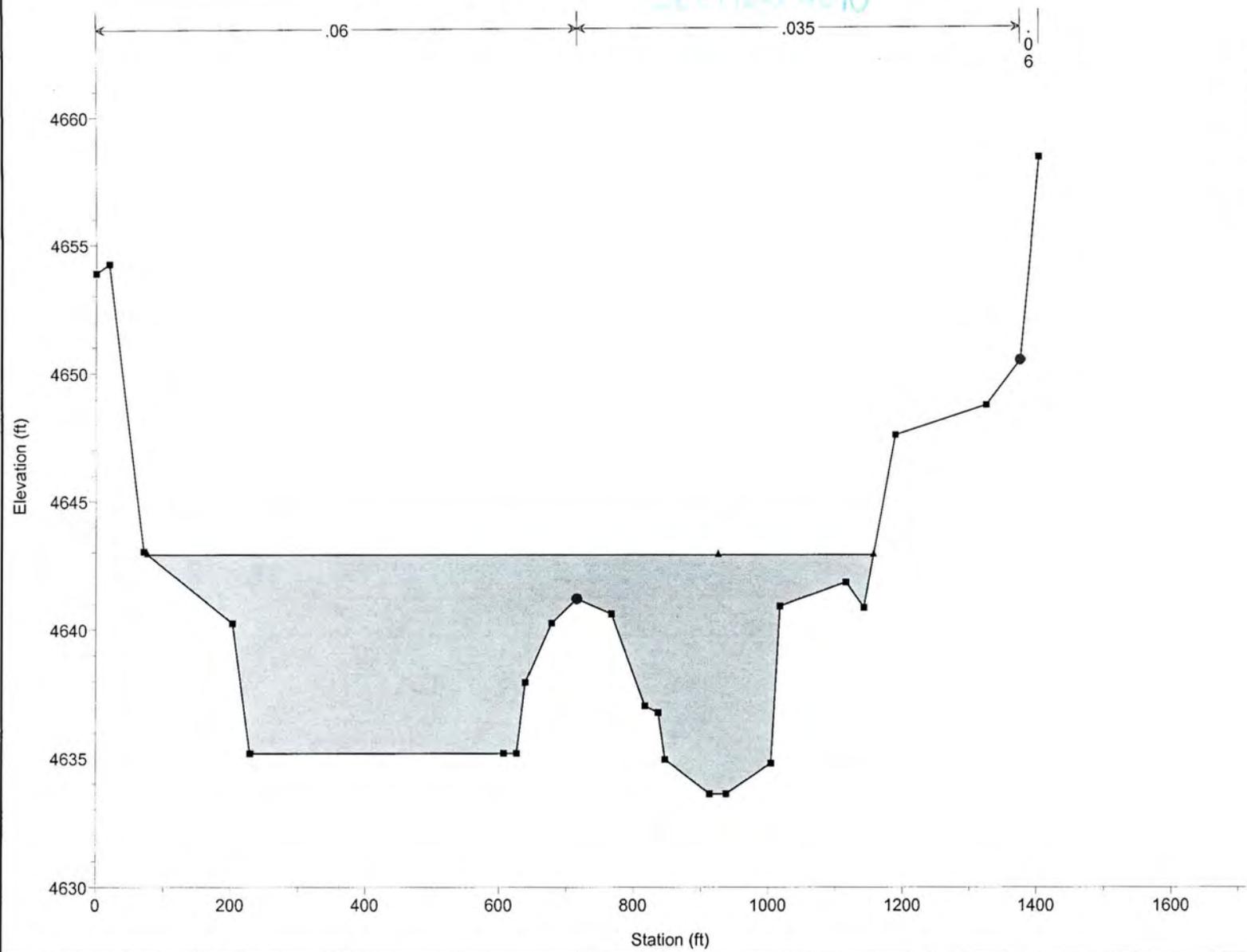
0	168.08	4645	0
---	--------	------	---

Permanent Ineff=

F F  
Bank Sta=1524.23,1936.81  
Exp/Cntr=0.6,0.3

Chan Stop Cuts=-1  
Use User Specified Reach Order=0  
User Specified Reach Order=Arkansas ,Reach 1

SECTION 4010



1 in Horiz. = 225 ft 1 in Vert. = 6 ft

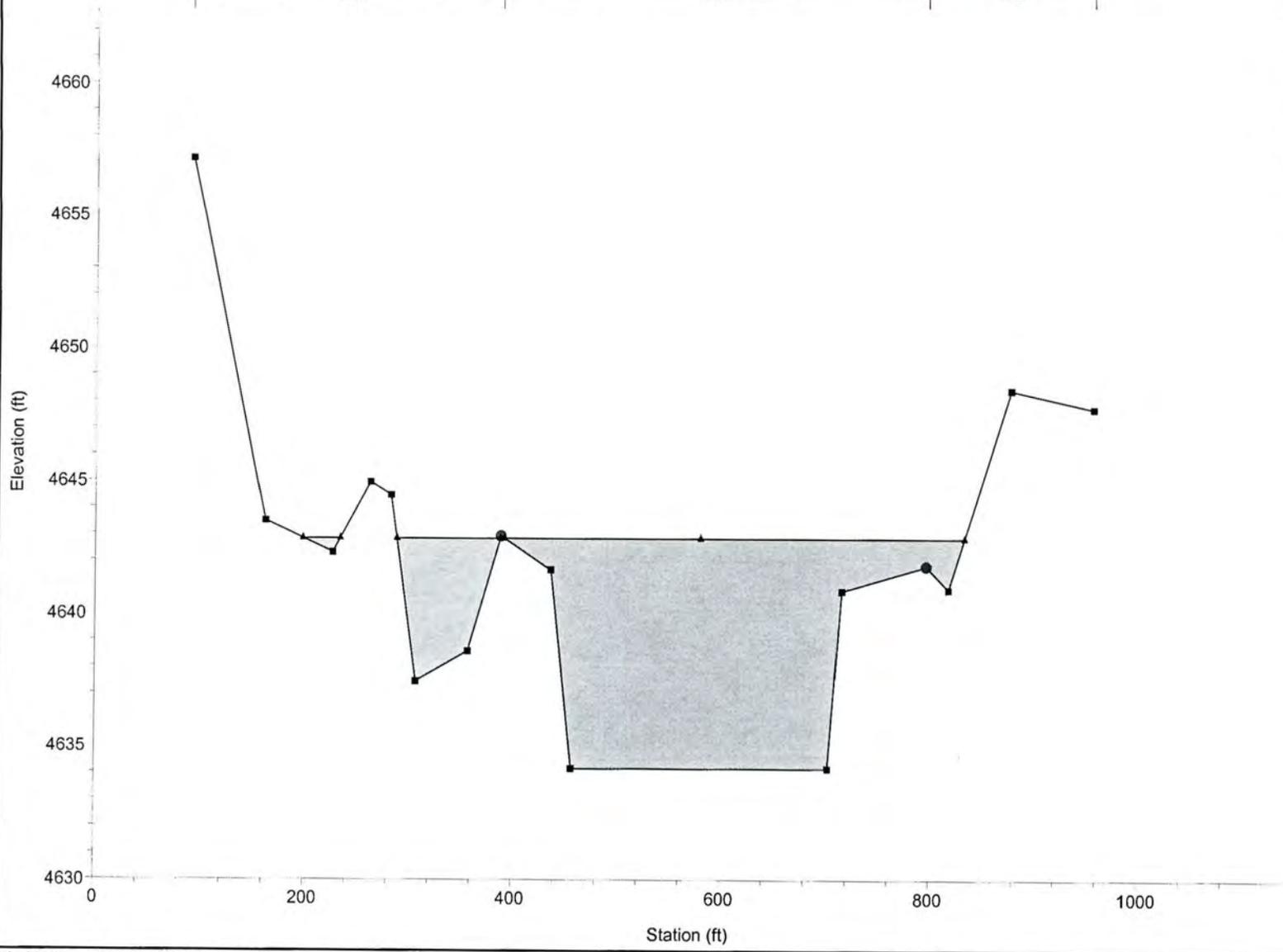
Ark Rvr - Mod no bdg proj topo sctns FW Plan: Arkansas Flow 05/11/2005

Downstream Edge of Bridge

SECTION 4019



Legend	
WS PF 1	▲
WS PF 2	■
Ground	●
Bank Sta	●



1 in Horiz. = 150 ft 1 in Vert. = 6 ft

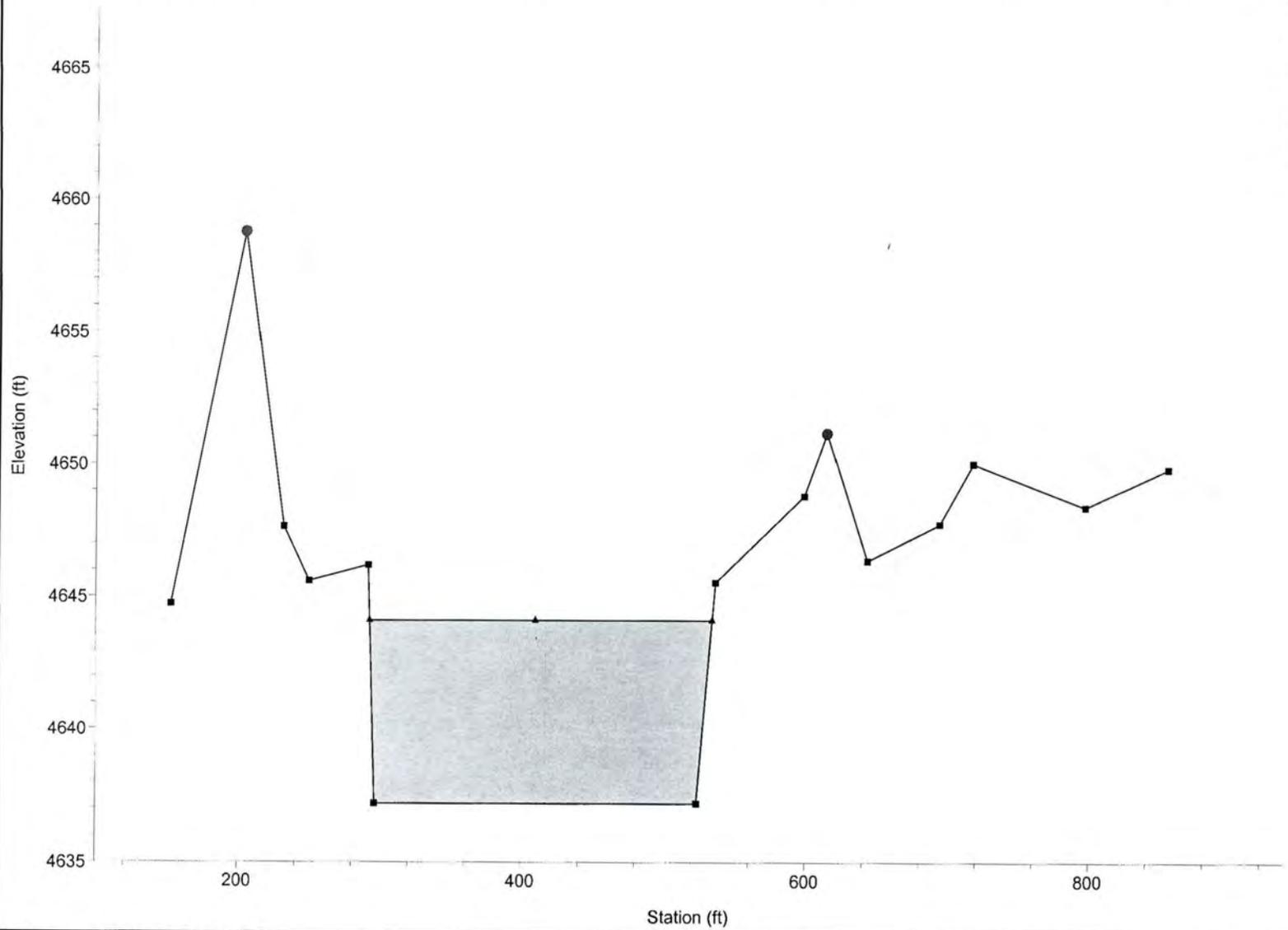
Ark Rvr - Mod no bdg proj topo scns FW Plan: Arkansas Flow 05/11/2005

Upstream Edge of Bridge

-202 11003 421



Legend	
WS PF 1	▲
WS PF 2	■
Ground	●
Bank Sta	●



1 in Horiz. = 110 ft 1 in Vert. = 6 ft

HEC-RAS Plan: a River: Arkansas Reach: Reach 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach 1	4060	PF 1	4000.00	4641.80	4646.29		4646.71	0.000735	5.24	764.00	180.49	0.45
Reach 1	4060	PF 2	20000.00	4641.80	4651.57		4653.57	0.001303	11.35	1762.12	197.60	0.67
Reach 1	4035	PF 1	4000.00	4640.90	4645.98		4645.26	0.000405	4.27	936.55	188.87	0.34
Reach 1	4035	PF 2	20000.00	4640.90	4650.83		4652.59	0.001160	10.67	1875.15	206.13	0.62
Reach 1	4030	PF 1	4000.00	4639.50	4645.67		4645.87	0.000528	3.60	1111.22	192.44	0.26
Reach 1	4030	PF 2	20000.00	4639.50	4646.85	4646.84	4650.31	0.007245	14.93	1339.62	194.94	1.00
Reach 1	4022	PF 1	4000.00	4637.63	4645.61		4645.68	0.000140	2.15	1863.17	257.86	0.14
Reach 1	4022	PF 2	20000.00	4637.63	4644.80		4647.03	0.004562	11.99	1567.56	237.99	0.80
Reach 1	4021	PF 1	4000.00	4637.18	4645.60		4645.66	0.000107	2.01	1987.66	250.99	0.13
Reach 1	4021	PF 2	20000.00	4637.18	4644.02		4646.44	0.005269	12.49	1601.64	241.39	0.85
Reach 1	4019	PF 1	4000.00	4634.15	4645.59		4645.61	0.000032	1.02	4679.25	703.47	0.06
Reach 1	4019	PF 2	20000.00	4634.15	4642.55		4643.51	0.003389	8.06	2711.08	543.64	0.58
Reach 1	4010	PF 1	4000.00	4633.60	4645.60		4645.60	0.000014	0.59	8798.81	1115.58	0.04
Reach 1	4010	PF 2	20000.00	4633.60	4642.64		4642.87	0.001505	4.57	5558.62	1065.52	0.37
Reach 1	4009	PF 1	4000.00	4633.52	4645.59		4645.60	0.000013	0.68	8729.28	1094.74	0.04
Reach 1	4009	PF 2	20000.00	4633.52	4642.47		4642.76	0.001463	5.36	5373.47	1032.91	0.38
Reach 1	4008	PF 1	4000.00	4632.20	4645.59	4634.98	4645.59	0.000004	0.35	16948.99	1890.09	0.02
Reach 1	4008	PF 2	20000.00	4632.20	4641.81	4637.43	4641.89	0.000479	3.02	9831.52	1777.60	0.22

Geom Title=Arkansas geo  
Program Version=3.12  
Viewing Rectangle= 0 , 1 , 1 , 0

River Reach=Arkansas , Reach  
Reach XY= 2  
.4035294 .2870588  
Rch Text X Y=0.4035294,0.  
Reverse River Text= 0

Type RM Length L Ch R = 1  
Node Last Edited Time=May/06/2005 13:21:13  
#Sta/Elev= 6  
0 4672.94 48.04 4644.24 4641.8 212.43 4641.8 221.82 4644.24  
267.42 4673.31  
#Mann= 3 , 0 , 0  
0 .025 0 0 .02 0 267.42 .025 0  
Bank Sta=0,267.42  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4035 ,750,750,750  
Node Last Edited Time=May/06/2005 13:21:13  
#Sta/Elev= 8  
0 4668.24 27.82 4650.21 35.67 4650.7 37.09 4644.04 39.39 4640.9  
219.36 4640.9 221.66 4643.46 263.78 4670.8  
#Mann= 3 , 0 , 0  
0 .025 0 0 .02 0 263.78 .025 0  
Bank Sta=0,263.78  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4030 ,448,448,448  
Node Last Edited Time=May/06/2005 13:18:46  
#Sta/Elev= 8  
0 4665.68 24.56 4649.53 33.91 4649.51 37.23 4643.36 40.98 4639.5  
221.03 4639.9 224.78 4643.36 265.52 4669.15  
#Mann= 3 , 0 , 0  
0 .04 0 0 .03 0 265.52 .04 0  
Bank Sta=0,265.52  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4022 ,108,108,108  
BEGIN DESCRIPTION:  
Upstream Transition  
END DESCRIPTION:  
Node Last Edited Time=May/02/2005 16:09:16  
#Sta/Elev= 13  
181.51 4664.7 246.54 4658.51 271.94 4649.66 296.19 4645.46 330.5 4645.75  
339.35 4637.63 566.73 4637.63 569.88 4645.68 579.21 4645.74 628.94 4667.96  
664.5 4670.36 746.4 4670.65 913.04 4667.86  
#Mann= 3 , 0 , 0  
181.51 .04 0 246.54 .03 0 628.94 .04 0  
Bank Sta=246.54,628.94  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4021 ,491,491,491  
BEGIN DESCRIPTION:  
Upstream Edge of Bridge  
END DESCRIPTION:  
Node Last Edited Time=May/02/2005 16:09:23  
#Sta/Elev= 15  
152.846 4644.72 204.407 4658.75 231.621 4647.62 249.546 4645.58 291.454 4646.17  
296.374 4637.18 523.412 4637.18 536.351 4645.52 598.453 4648.78 614.38 4651.15  
643.088 4646.34 693.977 4647.72 717.69 4650.01 796.979 4648.36 854.973 4649.81  
#Mann= 3 , 0 , 0

152.846 .04 0 204.407 .03 0 614.38 .04 0  
Bank Sta=204.407,614.38  
Skew Angle= 21  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 3 ,4020.5 , , ,  
Node Last Edited Time=May/06/2005 15:32:05  
Bridge Culvert--1,0,-1,-1, 0  
Deck Dist Width WeirC Skew NumUp NumDn MinLoCord MaxHiCord MaxSubmerge Is\_Ogee  
0.1,478,2.6,0, 6, 7, , , 0.95, 0, 0,0,,  
151.455 244.813 338.171 424.154 517.633 612.494  
4673.685 4675.35 4676.98 4678.62 4680.25 4681.76  
4667.43 4669.1 4670.73 4672.37 4674 4675.51  
115.792 219.01 322.235 443.572 543.39 643.209 733.953  
4656.57 4659.13 4658.68 4659.23 4659.78 4660.3 4660.05  
4650.32 4652.88 4652.43 4652.98 4653.53 4654.05 4653.8  
Pier Skew, UpSta & Num, DnSta & Num= ,222.836, 2 ,219.01, 2 , 0 , 0 , 0 , ,  
3 3  
4630 4667.43  
3 3  
46304652.875  
Pier Skew, UpSta & Num, DnSta & Num= ,244.813, 2 ,322.235, 2 , 0 , 0 , 0 , ,  
3 3  
4630 4667.43  
3 3  
46304652.875  
Pier Skew, UpSta & Num, DnSta & Num= ,338.171, 2 ,443.572, 2 , 0 , 0 , 0 , ,  
3 3  
46304670.725  
3 3  
46304652.975  
Pier Skew, UpSta & Num, DnSta & Num= ,424.154, 2 ,543.497, 2 , 0 , 0 , 0 , ,  
3 3  
46304670.725  
3 3  
46304652.975  
Pier Skew, UpSta & Num, DnSta & Num= ,517.633, 2 ,643.209, 2 , 0 , 0 , 0 , ,  
3 3  
46304670.725  
3 3  
46304652.975  
Abutment Skew #Up #Dn= , 3 , 2  
0 174.415 214.229  
4667.43 4667.43 4648.43  
0 132.854  
4650.3154650.315  
Abutment Skew #Up #Dn= , 3 , 3  
550.626 612.494 854.973  
46424675.5054675.505  
702.211 733.953 956.434  
46354653.7954653.765  
BR Coef=-1 , 0 , 0 , , 0 , , ,0.8,-1,,0,  
WSPro=, , , , 1 , , , , 0 , , , , 0 , , , , -1 , -1 , -1 , 0 , 0 , 0 , 0 , 0  
BC Design=, , 0 , , 0 , , , , ,

Type RM Length L Ch R = 1 ,4019 ,93,93,93  
BEGIN DESCRIPTION:  
Downstream Edge of Bridge  
END DESCRIPTION:  
Node Last Edited Time=May/06/2005 16:14:49  
#Sta/Elev= 13  
92.0984657.125 162.1544643.475 227.0934642.295 263.0554644.935 282.707 4644.45  
307.185 4637.43 357.216 4638.57 389.06 4642.9 436.449 4641.63 457.109 4634.15  
702.958 4634.15 708.48 4637.18 754.12 4660

#Mann= 3 , 0 , 0  
92.098 .06 0 389.06 .035 0 754.12 .06 0  
Bank Sta=389.06,754.12  
Skew Angle= 21  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4010 ,61,61,61  
Node Last Edited Time=May/06/2005 16:07:11  
#Sta/Elev= 19  
0 4653.88 19.45 4654.24 71.23 4643.02 203.03 4640.24 228.84 4635.18  
607.4 4635.18 626.68 4635.18 639.24 4637.95 677.85 4640.25 715.51 4641.19  
767.03 4640.61 816.84 4637.03 836.69 4636.77 846.78 4634.94 913 4633.6  
938 4633.6 1004.68 4634.79 1009.77 4637.18 1097.77 4659.18  
#Mann= 3 , 0 , 0  
0 .06 0 715.51 .035 0 1097.77 .06 0  
Bank Sta=715.51,1097.77  
Exp/Cntr=0.6,0.3

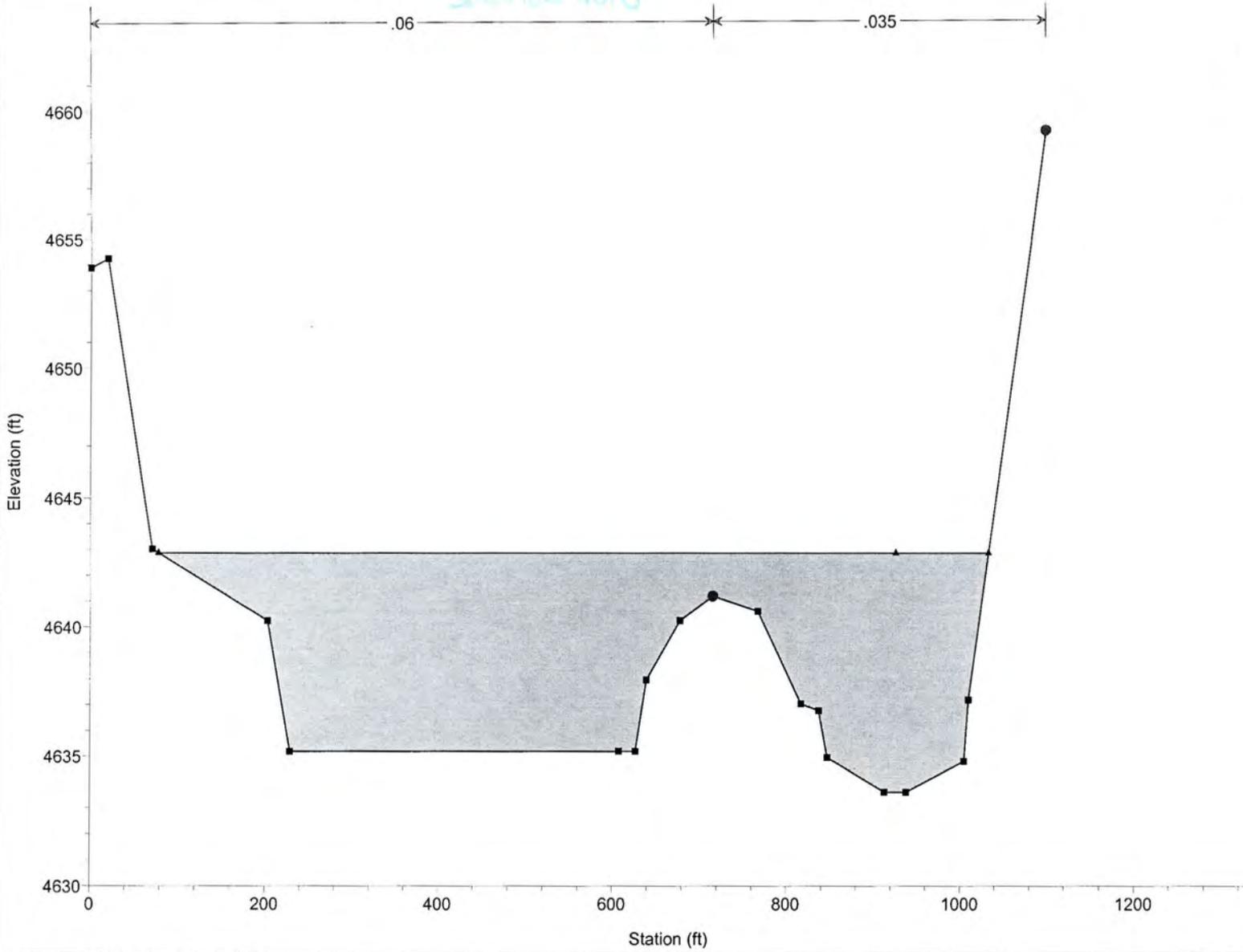
Type RM Length L Ch R = 1 ,4009 ,939,989,989  
BEGIN DESCRIPTION:  
Downstream Transition  
END DESCRIPTION:  
Node Last Edited Time=May/12/2005 11:00:08  
#Sta/Elev= 20  
357.674649.915 407.814654.425 456.814643.085 5564641.285 594.21 4635.18  
949.58 4635.18 981.264638.505 1083.024641.075 1162.834637.085 1181.764636.845  
1191.15 4633.52 1337.89 4633.52 1347.914640.185 1390.714641.905 1412.754640.705  
1513.54639.895 1534.514645.255 1629.874650.475 1648.984648.775 1711.514658.345  
#Mann= 3 , 0 , 0  
357.67 .06 0 1083.02 .035 0 1390.71 .06 0  
Bank Sta=1083.02,1390.71  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4008 ,1000,1090,1150  
Node Last Edited Time=May/06/2005 13:28:46  
#Sta/Elev= 31  
52.35 4653.18 90.92 4643.18 100 4642.14 138.52 4637 160.58 4636.85  
168.08 4644.16 288.58 4637.39 309.37 4637.47 348.15 4635.96 370.98 4635.18  
1271.23 4635.18 1286.44 4640.29 1320.3 4639.66 1366.28 4641.38 1400.31 4641.05  
1411.54 4634.51 1424.23 4634.51 1483.71 4634.51 1507 4640.23 1524.23 4641.32  
1580.18 4639.23 1689.54 4639.47 1703.1 4633.09 1786 4632.2 1811 4632.2  
1836.814632.414 1900.17 4632.94 1936.81 4646.4 1962.12 4645.05 2013.1 4646.07  
2028.07 4653.89  
#Mann= 3 , 0 , 0  
52.35 .06 0 1524.23 .035 0 1936.81 .06 0  
#XS Ineff= 2 , 0  
0 168.08 4645 0  
Permanent Ineff=  
F F  
Bank Sta=1524.23,1936.81  
Exp/Cntr=0.6,0.3

Chan Stop Cuts=-1  
Use User Specified Reach Order=0  
User Specified Reach Order=Arkansas ,Reach 1

Ark Rvr - Mod w/ bdg proj topo sctns FW Plan: Arkansas Flow 05/11/2005

SECTION 4010



1 in Horiz. = 175 ft 1 in Vert. = 6 ft

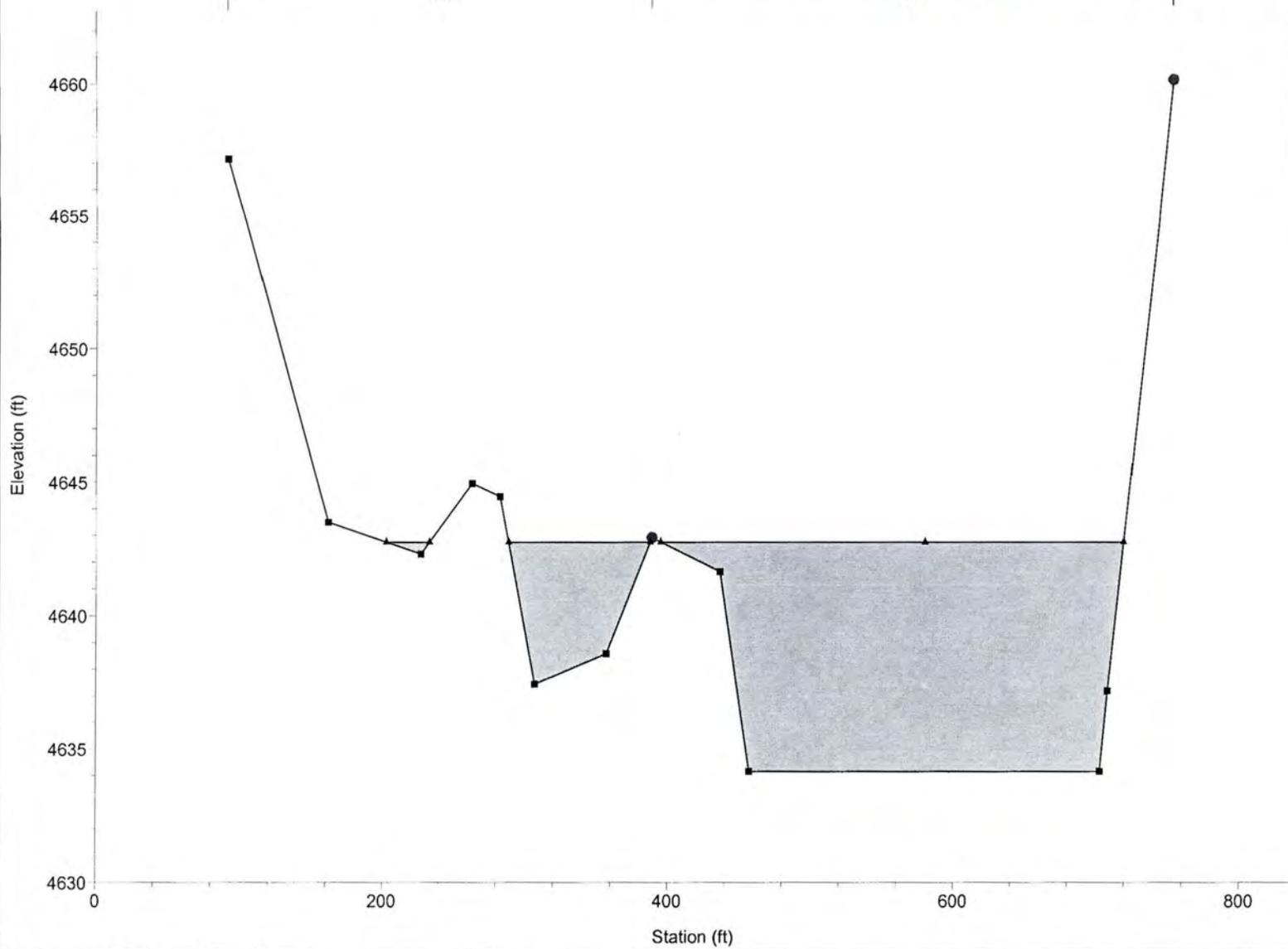
Ark Rvr - Mod w/ bdg proj topo scns FW Plan: Arkansas Flow 05/11/2005

Downstream Edge of Bridge

SECTION 4019



Legend	
WS PF 1	▲
WS PF 2	▲
Ground	■
Bank Sta	●



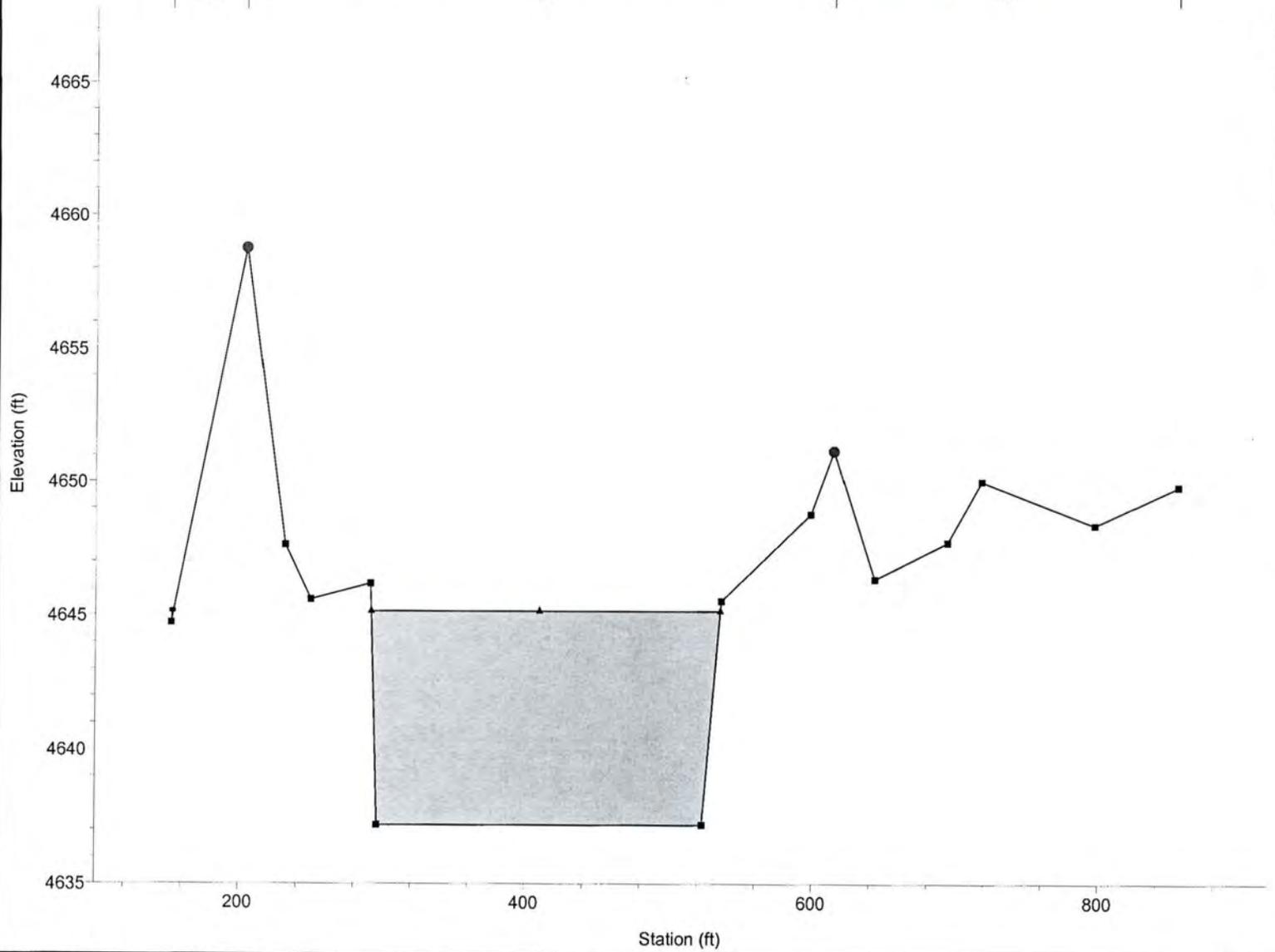
1 in Horiz. = 110 ft 1 in Vert. = 6 ft

Ark Rvr - Mod w/ bdg proj topo scns FW Plan: Arkansas Flow 05/11/2005

Upstream Edge of Bridge SECTION 4021



Legend	
WS PF 1	▲
WS PF 2	■
Ground	●
Bank Sta	●
Encroachment	▭



1 in Horiz. = 110 ft 1 in Vert. = 6 ft

ARKANSAS RIVER  
 EXISTING CONDITIONS  
 FLOODWAY ANALYSIS RESULTS  
 MODIFIED ALIGNMENT ALIGNMENT

HEC-RAS Plan: a River: Arkansas Reach: Reach 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach 1	4060	PF 1	20000.00	4641.80	4651.57		4653.57	0.001302	11.35	1762.31	197.60	0.67
Reach 1	4060	PF 2	20000.00	4641.80	4651.57		4653.57	0.001303	11.35	1762.21	197.60	0.67
Reach 1	4035	PF 1	20000.00	4640.90	4650.83		4652.59	0.001159	10.66	1875.45	206.14	0.62
Reach 1	4035	PF 2	20000.00	4640.90	4650.83		4652.59	0.001159	10.66	1875.35	206.14	0.62
Reach 1	4030	PF 1	20000.00	4639.50	4646.85	4646.84	4650.31	0.007251	14.93	1339.24	194.94	1.00
Reach 1	4030	PF 2	20000.00	4639.50	4646.85	4646.85	4650.31	0.007250	14.93	1339.34	194.94	1.00
Reach 1	4022	PF 1	20000.00	4637.63	4644.77		4647.02	0.004615	12.04	1661.63	237.96	0.80
Reach 1	4022	PF 2	20000.00	4637.63	4644.77		4647.02	0.004617	12.04	1661.40	237.96	0.80
Reach 1	4021	PF 1	20000.00	4637.18	4644.10		4646.46	0.005069	12.33	1622.04	241.57	0.84
Reach 1	4021	PF 2	20000.00	4637.18	4644.10		4646.46	0.005069	12.34	1620.98	241.56	0.84
Reach 1	4019	PF 1	20000.00	4634.15	4642.82		4643.69	0.002994	7.68	2861.57	577.12	0.55
Reach 1	4019	PF 2	20000.00	4634.15	4642.81		4643.68	0.003015	7.70	2844.41	540.19	0.55
Reach 1	4010	PF 1	20000.00	4633.60	4642.91		4643.12	0.001291	4.38	5844.09	1079.97	0.35
Reach 1	4010	PF 2	20000.00	4633.60	4642.91		4643.11	0.001208	4.24	5670.06	953.37	0.34
Reach 1	4009	PF 1	20000.00	4635.18	4642.81		4643.04	0.001001	4.26	5732.54	1053.23	0.32
Reach 1	4009	PF 2	20000.00	4635.18	4642.79		4643.04	0.000921	4.43	5644.44	968.85	0.31
Reach 1	4008	PF 1	20000.00	4632.20	4642.33	4637.43	4642.40	0.000362	2.77	10725.82	1792.94	0.19
Reach 1	4008	PF 2	20000.00	4632.20	4642.33	4637.43	4642.40	0.000362	2.77	10725.82	1725.08	0.19

Geom Title=Arkansas geo  
Program Version=3.12  
Viewing Rectangle= 0 , 1 , 1 , 0

River Reach=Arkansas , Reach 1  
Reach XY= 2  
.4035294 .8776471 .4035294 .2870588  
Rch Text X Y=0.4035294,0.73  
Reverse River Text= 0

Type RM Length L Ch R = 1 ,4060 ,680,680,680  
Node Last Edited Time=May/06/2005 13:24:14  
#Sta/Elev= 6  
0 4672.94 48.04 4644.19 57.43 4641.8 212.43 4641.8 221.82 4644.24  
267.42 4673.31  
#Mann= 3 , 0 , 0  
0 .025 0 0 .02 0 267.42 .025 0  
Bank Sta=0,267.42  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4035 ,750,750,750  
Node Last Edited Time=May/06/2005 13:21:13  
#Sta/Elev= 8  
0 4668.24 27.82 4650.21 1644.04 39.39 4640.9  
219.36 4640.9 221.66 4643.46  
#Mann= 3 , 0 , 0  
0 .025 0 0 .025 0  
Bank Sta=0,263.78  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4030  
Node Last Edited Time=May/06/2005  
#Sta/Elev= 8  
0 4665.68 24.56 4649.53 33.91 4649.51 37.23 4643.36 40.98 4639.5  
221.03 4639.9 224.78 4643.36 265.52 4669.15  
#Mann= 3 , 0 , 0  
0 .04 0 0 .03 0 265.52 .04 0  
Bank Sta=0,265.52  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4022 ,108,108,108  
BEGIN DESCRIPTION:  
Upstream Transition  
END DESCRIPTION:  
Node Last Edited Time=May/02/2005 16:09:16  
#Sta/Elev= 13  
181.51 4664.7 246.54 4658.51 271.94 4649.66 296.19 4645.46 330.5 4645.75  
339.35 4637.63 566.73 4637.63 569.88 4645.68 579.21 4645.74 628.94 4667.96  
664.5 4670.36 746.4 4670.65 913.04 4667.86  
#Mann= 3 , 0 , 0  
181.51 .04 0 246.54 .03 0 628.94 .04 0  
Bank Sta=246.54,628.94  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4021 ,491,491,491  
BEGIN DESCRIPTION:  
Upstream Edge of Bridge  
END DESCRIPTION:  
Node Last Edited Time=May/02/2005 16:09:23  
#Sta/Elev= 15  
152.846 4644.72 204.407 4658.75 231.621 4647.62 249.546 4645.58 291.454 4646.17  
296.374 4637.18 523.412 4637.18 536.351 4645.52 598.453 4648.78 614.38 4651.15  
643.088 4646.34 693.977 4647.72 717.69 4650.01 796.979 4648.36 854.973 4649.81  
#Mann= 3 , 0 , 0

152.846 .04 0 204.407 .03 0 614.38 .04 0  
Bank Sta=204.407,614.38  
Skew Angle= 21  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4019 ,93,93,93

BEGIN DESCRIPTION:

Downstream Edge of Bridge

END DESCRIPTION:

Node Last Edited Time=May/02/2005 16:09:29

#Sta/Elev= 16

92.0984657.125	162.1544643.475	227.0934642.295	263.0554644.935	282.707	4644.45
307.185	4637.43	357.216	4638.57	389.06	4642.9
436.449	4641.63	457.109	4634.15	702.958	4634.15
715.169	4640.85	796.139	4641.78	817.732	4640.9
876.884	4648.4	956.434	4647.7		

#Mann= 3 , 0 , 0

92.098	.06	0	389.06	.035	0	796.139	.06	0
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Bank Sta=389.06,796.139

Skew Angle= 21

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4010 ,61,61,61

Node Last Edited Time=May/06/2005 13:05:24

#Sta/Elev= 24

0	4653.88	19.45	4654.24	71.23	4643.02	203.03	4640.24	228.84	4635.18
607.4	4635.18	626.68	4635.18	639.24	4637.95	677.85	4640.25	715.51	4641.19
767.03	4640.61	816.84	4637.03	836.69	4636.77	846.78	4634.94	913	4633.6
938	4633.6	1004.68	4634.79	1017.71	4640.91	1115.29	4641.84	1142.21	4640.85
1188.59	4647.58	1324.35	4648.76	1375.31	4650.51	1403.32	4658.38		

#Mann= 3 , 0 , 0

0	.06	0	715.51	.035	0	1375.31	.06	0
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Bank Sta=715.51,1375.31

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4009 ,939,989,989

BEGIN DESCRIPTION:

Downstream Transition

END DESCRIPTION:

Node Last Edited Time=May/06/2005 12:57:18

#Sta/Elev= 20

357.674649.915	407.814654.425	456.814643.085	5564641.285	594.21	4635.18
949.58	4635.18	981.264638.505	1083.024641.075	1162.834637.085	1181.764636.845
1191.15	4633.52	1337.89	4633.52	1347.914640.185	1390.714641.905
1412.754640.705	1513.54639.895	1534.514645.255	1629.874650.475	1648.984648.775	1711.514658.345

#Mann= 3 , 0 , 0

357.67	.06	0	407.81	.035	0	1083.02	.06	0
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Bank Sta=407.81,1083.02

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4008 ,1000,1090,1150

Node Last Edited Time=May/06/2005 13:28:46

#Sta/Elev= 31

52.35	4653.18	90.92	4643.18	100	4642.14	138.52	4637	160.58	4636.85
168.08	4644.16	288.58	4637.39	309.37	4637.47	348.15	4635.96	370.98	4635.18
1271.23	4635.18	1286.44	4640.29	1320.3	4639.66	1366.28	4641.38	1400.31	4641.05
1411.54	4634.51	1424.23	4634.51	1483.71	4634.51	1507	4640.23	1524.23	4641.32
1580.18	4639.23	1689.54	4639.47	1703.1	4633.09	1786	4632.2	1811	4632.2
1836.814632.414	1900.17	4632.94	1936.81	4646.4	1962.12	4645.05	2013.1	4646.07	
2028.07	4653.89								

#Mann= 3 , 0 , 0

52.35	.06	0	1524.23	.035	0	1936.81	.06	0
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#XS Ineff= 2 , 0

0	168.08	4645	0
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Permanent Ineff=

F F  
Bank Sta=1524.23,1936.81  
Exp/Cntr=0.6,0.3

Chan Stop Cuts=-1  
Use User Specified Reach Order=0  
User Specified Reach Order=Arkansas ,Reach 1

ARKANSAS RIVER  
 EXISTING CONDITIONS  
 BACKWATER FLOODWAY  
 ANALYSIS RESULTS  
 MODIFIED ALIGNMENT ALTERNATIVE

HEC-RAS Plan: a River: Arkansas Reach: Reach 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach 1	4060	PF 1	8000.00	4641.80	4647.83		4648.74	0.001073	7.64	1046.80	185.50	0.57
Reach 1	4060	PF 2	8000.00	4641.80	4647.81		4648.72	0.001088	7.67	1042.46	185.42	0.57
Reach 1	4035	PF 1	8000.00	4640.90	4647.31		4648.01	0.000750	6.73	1188.75	191.20	0.48
Reach 1	4035	PF 2	8000.00	4640.90	4647.28		4647.99	0.000763	6.77	1182.50	191.14	0.48
Reach 1	4030	PF 1	8000.00	4639.50	4646.63		4647.22	0.001285	6.17	1297.03	194.48	0.42
Reach 1	4030	PF 2	8000.00	4639.50	4646.58		4647.18	0.001314	6.21	1288.20	194.38	0.43
Reach 1	4022	PF 1	8000.00	4637.63	4646.46		4646.69	0.000436	3.80	2105.78	290.43	0.25
Reach 1	4022	PF 2	8000.00	4637.63	4646.45		4646.68	0.000368	3.88	2062.42	240.00	0.23
Reach 1	4021	PF 1	8000.00	4637.18	4646.43		4646.63	0.000397	3.60	2228.17	321.55	0.24
Reach 1	4021	PF 2	8000.00	4637.18	4646.42		4646.63	0.000311	3.68	2187.96	246.00	0.22
Reach 1	4019	PF 1	8000.00	4634.15	4646.41		4646.45	0.000092	1.83	5255.46	714.06	0.10
Reach 1	4019	PF 2	8000.00	4634.15	4646.41		4646.46	0.000094	1.85	4870.33	578.17	0.11
Reach 1	4010	PF 1	8000.00	4633.60	4646.42		4646.43	0.000039	1.06	9716.70	1125.00	0.07
Reach 1	4010	PF 2	8000.00	4633.60	4646.42		4646.43	0.000040	1.08	9060.04	977.57	0.07
Reach 1	4009	PF 1	8000.00	4635.18	4646.41		4646.43	0.000031	1.02	9632.73	1113.23	0.06
Reach 1	4009	PF 2	8000.00	4635.18	4646.41		4646.43	0.000031	1.10	9188.99	999.65	0.06
Reach 1	4008	PF 1	8000.00	4632.20	4646.40	4636.20	4646.40	0.000011	0.65	18502.17	1935.23	0.04
Reach 1	4008	PF 2	8000.00	4632.20	4646.40	4636.20	4646.40	0.000011	0.66	17931.80	1845.02	0.04

Arkansas  
Energy Resources  
Arkansas Energy Resources  
Arkansas Energy Resources

Geom Title=Arkansas geo  
Program Version=3.12  
Viewing Rectangle= 0 , 1 , 1 , 0

River Reach=Arkansas , Reach 1  
Reach XY= 2  
.4035294 .8776471 .4035294 .2870588  
Rch Text X Y=0.4035294,0.73  
Reverse River Text= 0

Type RM Length L Ch R = 1 , 4060 , 680,680,680  
Node Last Edited Time=May/06/2005 13:24:14  
#Sta/Elev= 6  
0 4672.94 48.04 4644.19 57.43 4641.8 212.43 4641.8 221.82 4644.24  
267.42 4673.31  
#Mann= 3 , 0 , 0  
0 .025 0 0 .02 0 267.42 .025 0  
Bank Sta=0,267.42  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 , 4035 , 750,750,750  
Node Last Edited Time=May/06/2005 13:24:14  
#Sta/Elev= 8  
0 4668.24 27.7 37.09 4644.04 39.39 4640.9  
219.36 4640.9 221.8  
#Mann= 3 , 0 , 0  
0 .025 0 263.78 .025 0  
Bank Sta=0,263.78  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 8  
Node Last Edited Time=May/06/2005 13:18:40  
#Sta/Elev= 8  
0 4665.68 24.56 4649.53 33.91 4649.51 37.23 4643.36 40.98 4639.5  
221.03 4639.9 224.78 4643.36 265.52 4669.15  
#Mann= 3 , 0 , 0  
0 .04 0 0 .03 0 265.52 .04 0  
Bank Sta=0,265.52  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 , 4022 , 108,108,108  
BEGIN DESCRIPTION:  
Upstream Transition  
END DESCRIPTION:  
Node Last Edited Time=May/02/2005 16:09:16  
#Sta/Elev= 13  
181.51 4664.7 246.54 4658.51 271.94 4649.66 296.19 4645.46 330.5 4645.75  
339.35 4637.63 566.73 4637.63 569.88 4645.68 579.21 4645.74 628.94 4667.96  
664.5 4670.36 746.4 4670.65 913.04 4667.86  
#Mann= 3 , 0 , 0  
181.51 .04 0 246.54 .03 0 628.94 .04 0  
Bank Sta=246.54,628.94  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 , 4021 , 491,491,491  
BEGIN DESCRIPTION:  
Upstream Edge of Bridge  
END DESCRIPTION:  
Node Last Edited Time=May/02/2005 16:09:23  
#Sta/Elev= 15  
152.846 4644.72 204.407 4658.75 231.621 4647.62 249.546 4645.58 291.454 4646.17  
296.374 4637.18 523.412 4637.18 536.351 4645.52 598.453 4648.78 614.38 4651.15  
643.088 4646.34 693.977 4647.72 717.69 4650.01 796.979 4648.36 854.973 4649.81  
#Mann= 3 , 0 , 0

152.846 .04 0 204.407 .03 0 614.38 .04 0  
Bank Sta=204.407,614.38  
Skew Angle= 21  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4019 ,93,93,93

BEGIN DESCRIPTION:

Downstream Edge of Bridge

END DESCRIPTION:

Node Last Edited Time=May/02/2005 16:09:29

#Sta/Elev= 16

92.098	4657.125	162.154	4643.475	227.093	4642.295	263.055	4644.935	282.707	4644.45
307.185	4637.43	357.216	4638.57	389.06	4642.9	436.449	4641.63	457.109	4634.15
702.958	4634.15	715.169	4640.85	796.139	4641.78	817.732	4640.9	876.884	4648.4
956.434	4647.7								

#Mann= 3 , 0 , 0

92.098	.06	0	389.06	.035	0	796.139	.06	0
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Bank Sta=389.06,796.139

Skew Angle= 21

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4010 ,61,61,61

Node Last Edited Time=May/06/2005 13:05:24

#Sta/Elev= 24

0	4653.88	19.45	4654.24	71.23	4643.02	203.03	4640.24	228.84	4635.18
607.4	4635.18	626.68	4635.18	639.24	4637.95	677.85	4640.25	715.51	4641.19
767.03	4640.61	816.84	4637.03	836.69	4636.77	846.78	4634.94	913	4633.6
938	4633.6	1004.68	4634.79	1017.71	4640.91	1115.29	4641.84	1142.21	4640.85
1188.59	4647.58	1324.35	4648.76	1375.31	4650.51	1403.32	4658.38		

#Mann= 3 , 0 , 0

0	.06	0	715.51	.035	0	1375.31	.06	0
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Bank Sta=715.51,1375.31

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4009 ,939,989,989

BEGIN DESCRIPTION:

Downstream Transition

END DESCRIPTION:

Node Last Edited Time=May/06/2005 12:57:18

#Sta/Elev= 20

357.67	4649.915	407.81	4654.425	456.81	4643.085	556	4641.285	594.21	4635.18
949.58	4635.18	981.26	4638.505	1083.02	4641.075	1162.83	4637.085	1181.76	4636.845
1191.15	4633.52	1337.89	4633.52	1347.91	4640.185	1390.71	4641.905	1412.75	4640.705
1513.54	4639.895	1534.51	4645.255	1629.87	4650.475	1648.98	4648.775	1711.51	4658.345

#Mann= 3 , 0 , 0

357.67	.06	0	407.81	.035	0	1083.02	.06	0
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Bank Sta=407.81,1083.02

Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4008 ,1000,1090,1150

Node Last Edited Time=May/06/2005 13:28:46

#Sta/Elev= 31

52.35	4653.18	90.92	4643.18	100	4642.14	138.52	4637	160.58	4636.85
168.08	4644.16	288.58	4637.39	309.37	4637.47	348.15	4635.96	370.98	4635.18
1271.23	4635.18	1286.44	4640.29	1320.3	4639.66	1366.28	4641.38	1400.31	4641.05
1411.54	4634.51	1424.23	4634.51	1483.71	4634.51	1507	4640.23	1524.23	4641.32
1580.18	4639.23	1689.54	4639.47	1703.1	4633.09	1786	4632.2	1811	4632.2
1836.81	4632.414	1900.17	4632.94	1936.81	4646.4	1962.12	4645.05	2013.1	4646.07
2028.07	4653.89								

#Mann= 3 , 0 , 0

52.35	.06	0	1524.23	.035	0	1936.81	.06	0
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#XS Ineff= 2 , 0

0	168.08	4645	0
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Permanent Ineff=

F F  
Bank Sta=1524.23,1936.81  
Exp/Cntr=0.6,0.3

Chan Stop Cuts=-1  
Use User Specified Reach Order=0  
User Specified Reach Order=Arkansas ,Reach 1

ARKANSAS RIVER  
 IMPROVED CONDITIONS  
 FLOODWAY ANALYSIS RESULTS  
 MODIFIED ALIGNMENT ALTERNATIVE

HEC-RAS Plan: a River: Arkansas Reach: Reach 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach 1	4050	PF 1	20000.00	4641.80	4651.52		4653.54	0.001326	11.41	1752.28	197.44	0.68
Reach 1	4060	PF 2	20000.00	4641.80	4651.52		4653.54	0.001325	11.41	1752.67	197.44	0.67
Reach 1	4035	PF 1	20000.00	4640.90	4650.76		4652.55	0.001188	10.75	1860.96	205.92	0.63
Reach 1	4035	PF 2	20000.00	4640.90	4650.76		4652.55	0.001187	10.74	1861.46	205.93	0.63
Reach 1	4030	PF 1	20000.00	4639.50	4646.97	4646.86	4650.31	0.006842	14.66	1363.82	195.20	0.98
Reach 1	4030	PF 2	20000.00	4639.50	4646.97	4646.86	4650.31	0.006856	14.67	1362.96	195.20	0.98
Reach 1	4022	PF 1	20000.00	4637.63	4645.46		4647.33	0.003407	10.95	1826.74	239.47	0.70
Reach 1	4022	PF 2	20000.00	4637.63	4645.46		4647.32	0.003403	10.95	1825.81	238.98	0.70
Reach 1	4021	PF 1	20000.00	4637.18	4645.15	4643.32	4646.91	0.003171	10.66	1875.70	245.33	0.68
Reach 1	4021	PF 2	20000.00	4637.18	4645.14	4643.32	4646.91	0.003175	10.67	1874.42	243.75	0.68
Reach 1	4020.5		Bridge									
Reach 1	4019	PF 1	20000.00	4634.15	4642.74		4643.74	0.002786	8.22	2660.86	454.02	0.54
Reach 1	4019	PF 2	20000.00	4634.15	4642.71		4643.72	0.002815	8.26	2641.35	422.13	0.55
Reach 1	4010	PF 1	20000.00	4633.60	4642.87		4643.12	0.001217	4.99	5636.60	954.32	0.35
Reach 1	4010	PF 2	20000.00	4633.60	4642.85		4643.10	0.001149	4.84	5456.62	829.46	0.34
Reach 1	4009	PF 1	20000.00	4635.18	4642.81		4643.04	0.001001	4.26	5732.54	1053.23	0.32
Reach 1	4009	PF 2	20000.00	4635.18	4642.79		4643.04	0.000921	4.43	5644.44	968.85	0.31
Reach 1	4008	PF 1	20000.00	4632.20	4642.33	4637.43	4642.40	0.000362	2.77	10725.82	1792.94	0.19
Reach 1	4008	PF 2	20000.00	4632.20	4642.33	4637.43	4642.40	0.000362	2.77	10725.82	1725.08	0.19

Geom Title=Arkansas geo  
Program Version=3.12  
Viewing Rectangle= 0 , 1 , 1 , 0

River Reach=Arkansas , Reach 1  
Reach XY= 2  
.4035294 .8776471 .4035294 .2870588  
Rch Text X Y=0.4035294,0.73  
Reverse River Text= 0

Type RM Length L Ch R = 1 ,4060 ,680,680,680  
Node Last Edited Time=May/06/2005 13:24:14  
#Sta/Elev= 6  
0 4672.94 48.04 4644.19 57.43 4641.8 212.43 4641.8 221.82 4644.24  
267.42 4673.31  
#Mann= 3 , 0 , 0  
0 .025 0 0 .02 0 267.42 .025 0  
Bank Sta=0,267.42  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4035 ,750,750,750  
Node Last Edited Time=May/06/2005 13:21:13  
#Sta/Elev= 8  
0 4668.24 27.82 4650.21 35.67 4650.7 4640.9  
219.36 4640.9 221.66 4643.46 263.78 4670.  
#Mann= 3 , 0 , 0  
0 .025 0 0 .02 0  
Bank Sta=0,263.78  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4030 ,448,448,448  
Node Last Edited Time=May/06/2005 13:18:46  
#Sta/Elev= 8  
0 4665.68 24.56 4649.53 33.91 4649.51 37.23 4643.36 40.98 4639.5  
221.03 4639.9 224.78 4643.36 265.52 4669.15  
#Mann= 3 , 0 , 0  
0 .04 0 0 .03 0 265.52 .04 0  
Bank Sta=0,265.52  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4022 ,108,108,108  
BEGIN DESCRIPTION:  
Upstream Transition  
END DESCRIPTION:  
Node Last Edited Time=May/02/2005 16:09:16  
#Sta/Elev= 13  
181.51 4664.7 246.54 4658.51 271.94 4649.66 296.19 4645.46 330.5 4645.75  
339.35 4637.63 566.73 4637.63 569.88 4645.68 579.21 4645.74 628.94 4667.96  
664.5 4670.36 746.4 4670.65 913.04 4667.86  
#Mann= 3 , 0 , 0  
181.51 .04 0 246.54 .03 0 628.94 .04 0  
Bank Sta=246.54,628.94  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4021 ,491,491,491  
BEGIN DESCRIPTION:  
Upstream Edge of Bridge  
END DESCRIPTION:  
Node Last Edited Time=May/02/2005 16:09:23  
#Sta/Elev= 15  
152.846 4644.72 204.407 4658.75 231.621 4647.62 249.546 4645.58 291.454 4646.17  
296.374 4637.18 523.412 4637.18 536.351 4645.52 598.453 4648.78 614.38 4651.15  
643.088 4646.34 693.977 4647.72 717.69 4650.01 796.979 4648.36 854.973 4649.81  
#Mann= 3 , 0 , 0

152.846 .04 0 204.407 .03 0 614.38 .04 0  
Bank Sta=204.407,614.38  
Skew Angle= 21  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 3 ,4020.5 ,,,  
Node Last Edited Time=May/06/2005 15:32:05  
Bridge Culvert--1,0,-1,-1, 0  
Deck Dist Width WeirC Skew NumUp NumDn MinLoCord MaxHiCord MaxSubmerge Is\_Ogee  
0.1,478,2.6,0, 6, 7, , , 0.95, 0, 0,0,,  
151.455 244.813 338.171 424.154 517.633 612.494  
4673.685 4675.35 4676.98 4678.62 4680.25 4681.76  
4667.43 4669.1 4670.73 4672.37 4674 4675.51  
115.792 219.01 322.235 443.572 543.39 643.209 733.953  
4656.57 4659.13 4658.68 4659.23 4659.78 4660.3 4660.05  
4650.32 4652.88 4652.43 4652.98 4653.53 4654.05 4653.8  
Pier Skew, UpSta & Num, DnSta & Num= ,222.836, 2 ,219.01, 2 , 0 , 0 , 0 , ,  
3 3  
4630 4667.43  
3 3  
46304652.875  
Pier Skew, UpSta & Num, DnSta & Num= ,244.813, 2 ,322.235, 2 , 0 , 0 , 0 , ,  
3 3  
4630 4667.43  
3 3  
46304652.875  
Pier Skew, UpSta & Num, DnSta & Num= ,338.171, 2 ,443.572, 2 , 0 , 0 , 0 , ,  
3 3  
46304670.725  
3 3  
46304652.975  
Pier Skew, UpSta & Num, DnSta & Num= ,424.154, 2 ,543.497, 2 , 0 , 0 , 0 , ,  
3 3  
46304670.725  
3 3  
46304652.975  
Pier Skew, UpSta & Num, DnSta & Num= ,517.633, 2 ,643.209, 2 , 0 , 0 , 0 , ,  
3 3  
46304670.725  
3 3  
46304652.975  
Abutment Skew #Up #Dn= , 3 , 2  
0 174.415 214.229  
4667.43 4667.43 4648.43  
0 132.854  
4650.3154650.315  
Abutment Skew #Up #Dn= , 3 , 3  
550.626 612.494 854.973  
46424675.5054675.505  
702.211 733.953 956.434  
46354653.7954653.765  
BR Coef=-1 , 0 , 0 , , 0 , , ,0.8,-1,,0,  
WSPro=, , , 1 , , , 0 , , , 0 , , , -1 , -1 , -1 , 0 , 0 , 0 , 0 , 0  
BC Design=, , 0 , , 0 , , , , ,

Type RM Length L Ch R = 1 ,4019 ,93,93,93  
BEGIN DESCRIPTION:  
Downstream Edge of Bridge  
END DESCRIPTION:  
Node Last Edited Time=May/06/2005 16:14:49  
#Sta/Elev= 13  
92.0984657.125 162.1544643.475 227.0934642.295 263.0554644.935 282.707 4644.45  
307.185 4637.43 357.216 4638.57 389.06 4642.9 436.449 4641.63 457.109 4634.15  
702.958 4634.15 708.48 4637.18 754.12 4660

#Mann= 3 , 0 , 0  
92.098 .06 0 389.06 .035 0 754.12 .06 0  
Bank Sta=389.06,754.12  
Skew Angle= 21  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4010 ,61,61,61  
Node Last Edited Time=May/06/2005 16:07:11  
#Sta/Elev= 19  
0 4653.88 19.45 4654.24 71.23 4643.02 203.03 4640.24 228.84 4635.18  
607.4 4635.18 626.68 4635.18 639.24 4637.95 677.85 4640.25 715.51 4641.19  
767.03 4640.61 816.84 4637.03 836.69 4636.77 846.78 4634.94 913 4633.6  
938 4633.6 1004.68 4634.79 1009.77 4637.18 1097.77 4659.18  
#Mann= 3 , 0 , 0  
0 .06 0 715.51 .035 0 1097.77 .06 0  
Bank Sta=715.51,1097.77  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4009 ,939,989,989  
BEGIN DESCRIPTION:  
Downstream Transition  
END DESCRIPTION:  
Node Last Edited Time=May/06/2005 12:57:18  
#Sta/Elev= 20  
357.674649.915 407.814654.425 456.814643.085 5564641.285 594.21 4635.18  
949.58 4635.18 981.264638.505 1083.024641.075 1162.834637.085 1181.764636.845  
1191.15 4633.52 1337.89 4633.52 1347.914640.185 1390.714641.905 1412.754640.705  
1513.54639.895 1534.514645.255 1629.874650.475 1648.984648.775 1711.514658.345  
#Mann= 3 , 0 , 0  
357.67 .06 0 407.81 .035 0 1083.02 .06 0  
Bank Sta=407.81,1083.02  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4008 ,1000,1090,1150  
Node Last Edited Time=May/06/2005 13:28:46  
#Sta/Elev= 31  
52.35 4653.18 90.92 4643.18 100 4642.14 138.52 4637 160.58 4636.85  
168.08 4644.16 288.58 4637.39 309.37 4637.47 348.15 4635.96 370.98 4635.18  
1271.23 4635.18 1286.44 4640.29 1320.3 4639.66 1366.28 4641.38 1400.31 4641.05  
1411.54 4634.51 1424.23 4634.51 1483.71 4634.51 1507 4640.23 1524.23 4641.32  
1580.18 4639.23 1689.54 4639.47 1703.1 4633.09 1786 4632.2 1811 4632.2  
1836.814632.414 1900.17 4632.94 1936.81 4646.4 1962.12 4645.05 2013.1 4646.07  
2028.07 4653.89  
#Mann= 3 , 0 , 0  
52.35 .06 0 1524.23 .035 0 1936.81 .06 0  
#XS Ineff= 2 , 0  
0 168.08 4645 0  
Permanent Ineff=  
F F  
Bank Sta=1524.23,1936.81  
Exp/Cntr=0.6,0.3

Chan Stop Cuts=-1  
Use User Specified Reach Order=0  
User Specified Reach Order=Arkansas ,Reach 1

ARKANSAS RIVER  
IMPROVED CONDITIONS  
BACKWATER FLOODWAY ANALYSIS  
RESULTS

MODIFIED ALIGNMENT  
ALTERNATIVE

HEC-RAS Plan: a River: Arkansas Reach: Reach 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Ctl
Reach 1	4060	PF 1	8000.00	4641.80	4647.86		4648.76	0.001059	7.61	1051.15	185.58	0.56
Reach 1	4060	PF 2	8000.00	4641.80	4647.83		4648.74	0.001072	7.64	1047.07	185.50	0.57
Reach 1	4035	PF 1	8000.00	4640.90	4647.34		4648.04	0.000738	8.70	1194.92	191.25	0.47
Reach 1	4035	PF 2	8000.00	4640.90	4647.31		4648.01	0.000750	8.73	1189.13	191.20	0.48
Reach 1	4030	PF 1	8000.00	4639.50	4646.68		4647.26	0.001256	8.12	1306.34	194.58	0.42
Reach 1	4030	PF 2	8000.00	4639.50	4646.63		4647.22	0.001284	8.17	1297.60	194.48	0.42
Reach 1	4022	PF 1	8000.00	4637.63	4646.52		4646.74	0.000427	3.77	2121.11	290.85	0.25
Reach 1	4022	PF 2	8000.00	4637.63	4646.50		4646.73	0.000361	3.86	2074.84	240.00	0.23
Reach 1	4021	PF 1	8000.00	4637.18	4646.48	4640.53	4646.68	0.000390	3.57	2245.54	325.54	0.24
Reach 1	4021	PF 2	8000.00	4637.18	4646.47	4640.54	4646.68	0.000305	3.64	2200.81	246.00	0.21
Reach 1	4020.5		Bridge									
Reach 1	4019	PF 1	8000.00	4634.15	4646.40		4646.46	0.000104	2.05	4647.32	579.79	0.11
Reach 1	4019	PF 2	8000.00	4634.15	4646.40		4646.46	0.000107	2.08	4262.06	443.92	0.11
Reach 1	4010	PF 1	8000.00	4633.60	4646.41		4646.43	0.000042	1.23	9092.23	991.14	0.07
Reach 1	4010	PF 2	8000.00	4633.60	4646.41		4646.43	0.000044	1.25	8434.90	843.70	0.07
Reach 1	4009	PF 1	8000.00	4635.18	4646.41		4646.43	0.000031	1.02	9632.73	1113.23	0.06
Reach 1	4009	PF 2	8000.00	4635.18	4646.41		4646.43	0.000031	1.10	9188.99	999.65	0.06
Reach 1	4008	PF 1	8000.00	4632.20	4646.40	4636.20	4646.40	0.000011	0.65	18502.17	1935.23	0.04
Reach 1	4008	PF 2	8000.00	4632.20	4646.40	4636.20	4646.40	0.000011	0.66	17931.80	1845.02	0.04

Geom Title=Arkansas geo  
Program Version=3.12  
Viewing Rectangle= 0 , 1 , 1 , 0

River Reach=Arkansas , Reach 1  
Reach XY= 2  
.4035294 .8776471 .4035294 .2870588  
Rch Text X Y=0.4035294,0.73  
Reverse River Text= 0

Type RM Length L Ch R = 1 ,4060 ,680,680,680  
Node Last Edited Time=May/06/2005 13:24:14  
#Sta/Elev= 6  
0 4672.94 48.04 4644.19 57.43 4641.8 212.43 4641.8 221.82 4644.24  
267.42 4673.31  
#Mann= 3 , 0 , 0  
0 .025 0 0 .02 0 267.42 .025 0  
Bank Sta=0,267.42  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4035 ,750,750,750  
Node Last Edited Time=May/06/2005 13:21:13  
#Sta/Elev= 8  
0 4668.24 27.82 4650.21 35.67 4650.7 37.09 4644.04 39.39 4640.9  
219.36 4640.9 221.66 4643.46 263.78 4670.8  
#Mann= 3 , 0 , 0  
0 .025 0 0 .02 0 263.78 .025 0  
Bank Sta=0,263.78  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4022 ,108,108  
Node Last Edited Time=May/02/2005 16:09:16  
#Sta/Elev= 8  
0 4665.68 49.51 37.23 4643.36 40.98 4639.5  
221.03 4639.9 569.15  
#Mann= 3 , 0 , 0  
0 .04 0 265.52 .04 0  
Bank Sta=0,265.52  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4021 ,491,491,491  
Node Last Edited Time=May/02/2005 16:09:23  
#Sta/Elev= 15  
152.846 4644.72 204.407 4658.75 231.621 4647.62 249.546 4645.58 291.454 4646.17  
296.374 4637.18 523.412 4637.18 536.351 4645.52 598.453 4648.78 614.38 4651.15  
643.088 4646.34 693.977 4647.72 717.69 4650.01 796.979 4648.36 854.973 4649.81  
#Mann= 3 , 0 , 0

Arkansas geo  
3.12  
0 1 1 0

152.846 .04 0 204.407 .03 0 614.38 .04 0  
Bank Sta=204.407,614.38  
Skew Angle= 21  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 3 ,4020.5 , , ,  
Node Last Edited Time=May/06/2005 15:32:05  
Bridge Culvert--1,0,-1,-1, 0  
Deck Dist Width WeirC Skew NumUp NumDn MinLoCord MaxHiCord MaxSubmerge Is\_Ogee  
0.1,478,2.6,0, 6, 7, , , 0.95, 0, 0,0,,  
151.455 244.813 338.171 424.154 517.633 612.494  
4673.685 4675.35 4676.98 4678.62 4680.25 4681.76  
4667.43 4669.1 4670.73 4672.37 4674 4675.51  
115.792 219.01 322.235 443.572 543.39 643.209 733.953  
4656.57 4659.13 4658.68 4659.23 4659.78 4660.3 4660.05  
4650.32 4652.88 4652.43 4652.98 4653.53 4654.05 4653.8

Pier Skew, UpSta & Num, DnSta & Num= ,222.836, 2 ,219.01, 2 , 0 , 0 , 0 , ,  
3 3  
4630 4667.43  
3 3  
46304652.875

Pier Skew, UpSta & Num, DnSta & Num= ,244.813, 2 ,322.235, 2 , 0 , 0 , 0 , ,  
3 3  
4630 4667.43  
3 3  
46304652.875

Pier Skew, UpSta & Num, DnSta & Num= ,338.171, 2 ,443.572, 2 , 0 , 0 , 0 , ,  
3 3  
46304670.725  
3 3  
46304652.975

Pier Skew, UpSta & Num, DnSta & Num= ,424.154, 2 ,543.497, 2 , 0 , 0 , 0 , ,  
3 3  
46304670.725  
3 3  
46304652.975

Pier Skew, UpSta & Num, DnSta & Num= ,517.633, 2 ,643.209, 2 , 0 , 0 , 0 , ,  
3 3  
46304670.725  
3 3  
46304652.975

Abutment Skew #Up #Dn= , 3 , 2  
0 174.415 214.229  
4667.43 4667.43 4648.43  
0 132.854  
4650.3154650.315

Abutment Skew #Up #Dn= , 3 , 3  
550.626 612.494 854.973  
46424675.5054675.505  
702.211 733.953 956.434  
46354653.7954653.765

BR Coef=-1 , 0 , 0 , , 0 , , ,0.8,-1,,0,  
WSPro=, , , , 1 , , , , 0 , , , , 0 , , , , -1 , -1 , -1 , 0 , 0 , 0 , 0 , 0  
BC Design=, , 0 , , 0 , , , , ,

Type RM Length L Ch R = 1 ,4019 , ,93,93,93  
BEGIN DESCRIPTION:  
Downstream Edge of Bridge  
END DESCRIPTION:  
Node Last Edited Time=May/06/2005 16:14:49  
#Sta/Elev= 13

92.0984657.125 162.1544643.475 227.0934642.295 263.0554644.935 282.707 4644.45  
307.185 4637.43 357.216 4638.57 389.06 4642.9 436.449 4641.63 457.109 4634.15  
702.958 4634.15 708.48 4637.18 754.12 4660

#Mann= 3 , 0 , 0  
92.098 .06 0 389.06 .035 0 754.12 .06 0  
Bank Sta=389.06,754.12  
Skew Angle= 21  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4010 ,61,61,61  
Node Last Edited Time=May/06/2005 16:07:11  
#Sta/Elev= 19  
0 4653.88 19.45 4654.24 71.23 4643.02 203.03 4640.24 228.84 4635.18  
607.4 4635.18 626.68 4635.18 639.24 4637.95 677.85 4640.25 715.51 4641.19  
767.03 4640.61 816.84 4637.03 836.69 4636.77 846.78 4634.94 913 4633.6  
938 4633.6 1004.68 4634.79 1009.77 4637.18 1097.77 4659.18  
#Mann= 3 , 0 , 0  
0 .06 0 715.51 .035 0 1097.77 .06 0  
Bank Sta=715.51,1097.77  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4009 ,939,989,989  
BEGIN DESCRIPTION:  
Downstream Transition  
END DESCRIPTION:  
Node Last Edited Time=May/06/2005 12:57:18  
#Sta/Elev= 20  
357.674649.915 407.814654.425 456.814643.085 5564641.285 594.21 4635.18  
949.58 4635.18 981.264638.505 1083.024641.075 1162.834637.085 1181.764636.845  
1191.15 4633.52 1337.89 4633.52 1347.914640.185 1390.714641.905 1412.754640.705  
1513.54639.895 1534.514645.255 1629.874650.475 1648.984648.775 1711.514658.345  
#Mann= 3 , 0 , 0  
357.67 .06 0 407.81 .035 0 1083.02 .06 0  
Bank Sta=407.81,1083.02  
Exp/Cntr=0.6,0.3

Type RM Length L Ch R = 1 ,4008 ,1000,1090,1150  
Node Last Edited Time=May/06/2005 13:28:46  
#Sta/Elev= 31  
52.35 4653.18 90.92 4643.18 100 4642.14 138.52 4637 160.58 4636.85  
168.08 4644.16 288.58 4637.39 309.37 4637.47 348.15 4635.96 370.98 4635.18  
1271.23 4635.18 1286.44 4640.29 1320.3 4639.66 1366.28 4641.38 1400.31 4641.05  
1411.54 4634.51 1424.23 4634.51 1483.71 4634.51 1507 4640.23 1524.23 4641.32  
1580.18 4639.23 1689.54 4639.47 1703.1 4633.09 1786 4632.2 1811 4632.2  
1836.814632.414 1900.17 4632.94 1936.81 4646.4 1962.12 4645.05 2013.1 4646.07  
2028.07 4653.89  
#Mann= 3 , 0 , 0  
52.35 .06 0 1524.23 .035 0 1936.81 .06 0  
#XS Ineff= 2 , 0  
0 168.08 4645 0  
Permanent Ineff=  
F F  
Bank Sta=1524.23,1936.81  
Exp/Cntr=0.6,0.3

Chan Stop Cuts=-1  
Use User Specified Reach Order=0  
User Specified Reach Order=Arkansas ,Reach 1