BEFORE USING ANY

DATA IN THIS STUDY

PLEASE SEE EITHER

KATHRYN GROSS

TIM MURPHY

MIKE DUNCAN

THE AREA IS BEING RESTUDIED

Flood Control District of Maricopa County
Phoenix, Arizona
May, 1999

FLOODPLAIN DELINEATION STUDY
OF
RIO VERDE SOUTH EXTENSION
FCD 97-13

TECHNICAL DATA NOTEBOOK
VOLUME 2 of 2

Submitted by:

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CERTIFICATE NO. 29325
BRIAN R. ISERMAN
Date Signed 5/26/99
ARIZONA, U.S.A.

Brian R. Iserman

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TECHNICAL DATA NOTEBOOK

Registered Professional Engineer (Civil) CERTIFICATE NO. 29325 BRIAN R. ISERMAN Date Signed 5/26/99 ARIZONA U.S.A.

Brian R. Iserman

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E.1 Roughness Coefficient Estimation

PREFACE

The following report describes the evaluation of Manning's roughness coefficients for this floodplain delineation study. Between the time of the roughness coefficient evaluation and the final TDN, the naming convention used to identify the various washes within the study area was modified. The following table contains a cross reference between the names used in the roughness evaluation report and the final FIS. Additionally, the original downstream (east) limit of detailed study, was moved west from Forest Road approximately 4,000 feet; the following report is based on the original limit of detailed study.

Wash Name in N-value Report	Wash Name in Final FIS
Wash 10	W10.0000
Wash 10B	W10.0555
Wash 10C	W10.0556
Wash 10D	W10.0600
Wash 11	W11.0000
Wash 11S(outh)	W11.0100
Wash 11A	W11.0205
Wash 12	W12.0000
Wash 12A-1	W12.0100
Wash 12S(outh)	W12.0300
Wash 12B	W12.0355
Wash 12SA	W12.0365
Wash 12SB	W12.0375
Wash 12A	W12.0400
Wash 12C	W12.0500

FLOODPLAIN DELINEATION STUDY
for
RIO VERDE SOUTH EXTENSION
(WASHES 10, 11, 11.0100 (Wash 11 South), 12 and 12.0300 (Wash 12 South))
FCD CONTRACT NO. 97-13

TASK 6.7.3 FIELD RECONNAISSANCE REPORT

November, 1998

JE Fuller Hydrology and Geomorphology, Inc., (JEF) conducted its original field reconnaissance of the project area on March 30, 1998. A subsequent field reconnaissance was undertaken on November 17, 1998 as the result of the addition of Wash 11.0100 (11 South) and Wash 12.0300 (12 South) to this study. Accompanying JEF on the initial field reconnaissance were staff from Dibble and Associates (Dibble), and the Flood Control District of Maricopa County (FCDMC); JEF staff performed the second field reconnaissance. The purpose of the field reconnaissance was to document channel and overbank Manning's "n" values, floodplain conditions affecting the floodplain delineation, and major hydraulic structures. The project area, ground photo locations, and Manning's "n" values are shown on Figure 6.7.1

Manning's "n" Values

Manning's "n" values were determined using the methodology in the USGS report, "Estimating Manning's Roughness Coefficients for Stream Channels and Flood Plains in Maricopa County, Arizona". On the following pages, photographs showing typical reach conditions are followed by the worksheet used to determine the reach-average Manning's "n" values for the reach depicted in the photographs. Reach designations were assigned based on distinctions in general channel morphology, vegetation, and channel and overbank soil characteristics. The alphabetic reach identifiers are a continuation of the identification scheme employed for the previous Rio Verde South Floodplain Delineation Study (FCD Contract Number 93-07). Photographs in series A through D were taken on March 30, 1998. Photographs in series F and G were taken on November, 17, 1998.

Wash 10, Reach E, Photo C-18:
Looking downstream (east) from approximately 1,000 feet downstream of 156th Street.

Wash 10, Reach E, Photo C-19:
Looking downstream (east) from approximately 1,400 feet downstream of 156th Street.

Wash 10, Reach E, Photo C-20:
Looking at right overbank area typical vegetation from approximately 1,400 feet downstream of 156th Street.

Wash 10, Reach E, Photo C-23:
Looking upstream (west) from 162nd Street.

Wash 10, Reach E, Photo D-5:
Looking downstream (east) from 164th Street.

Wash 10, Reach E, Photo D-6:
Looking at right overbank from just downstream of 164th street.

Wash 10, Reach E, Photo D-16:
Looking upstream (west) from 168th Street.

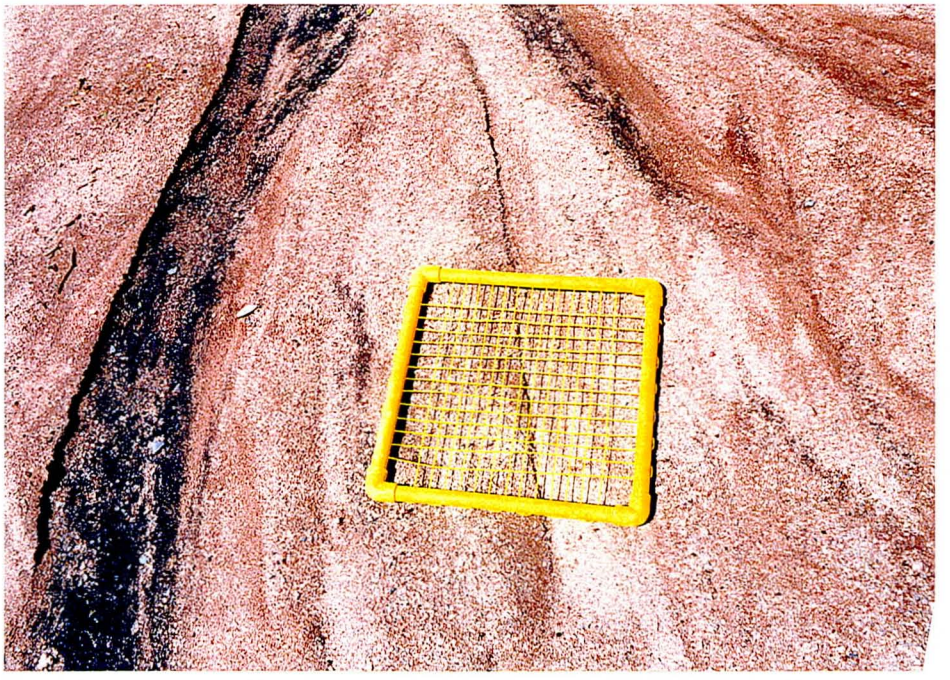
DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Rio Verde South Floodplain Delineation Study Extension, FCD97-13
Stream: Wash 10
Location: Reach E
Photo No: C-18, C-19, C-20, C-23, D-5, D-6, D-16

Channel Conditions		Manning's n Adjustment		Left Overbank (Sand with some cobbles)	Channel (Coarse Sand/Gravel)	Right Overbank (Sand with some cobbles)
Channel Material	Concrete	n_1	.012 - .018			
	Firm Soil		.025 -.032			
	Coarse Sand		.026 - .035	.026		.026
	Gravel		.028 - .035		.028	
	Cobble		.030 - .050			
	Boulder		.040 - .070			
Degree of Irregularity	Smooth	n_2	0	0		0
	Minor		.001 - .005		.003	
	Moderate		.006 - .010			
	Severe		.011 - .020			
Effects of Obstruction	Negligible	n_3	.000 - .004			
	Minor		.005 - .015	.010	.008	.010
	Appreciable		.020 - .030			
	Severe		.040 - .060			
Vegetation	Small	n_4	.002 - .010		.006	
	Medium		.010 - .025			
	Large		.025 - .050	.032		.032
	Very Large		.050 - .100			
Variations in Channel Cross section	Gradual	n_5	0	0	0	0
	Occ. Alt.		.001 - .005			
	Freq. Alt.		.010 - .015			
				0.068	0.045	0.068
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Sever		1.3			
$n = (n_1 + n_2 + n_3 + n_4 + n_5)m$				**0.068**	**0.045**	**0.068**
				Use 0.070		Use 0.070

Wash 11, Reach I, Photo C-13:
Looking downstream (east) from approximately 1,000 feet upstream (west) of 176th Street.

Wash 11, Reach I, Photo C-14:
Looking at right overbank from approximately 1,000 feet upstream (west) of 176th Street.



Wash 11, Reach I, Photo C-15:
Looking at bed material from approximately 1,000 feet upstream (west) of 176th Street.

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Rio Verde South Floodplain Delineation Study Extension, FCD 97-13
Stream: Wash 11
Location: Reach I
Photo No: C-13, C-14, C-15

Channel Conditions		Manning's n Adjustment		Left Overbank (Sand with some cobbles)	Channel (Coarse Sand/Gravel)	Right Overbank (Sand with some cobbles)
Channel Material	Concrete	n_1	.012 - .018			
	Firm Soil		.025 -.032			
	Coarse Sand		.026 - .035			
	Gravel		.028 - .035		.028	
	Cobble		.030 - .050	.030		.030
	Boulder		.040 - .070			
Degree of Irregularity	Smooth	n_2	0	0		0
	Minor		.001 - .005		.003	
	Moderate		.006 - .010			
	Severe		.011 - .020			
Effects of Obstruction	Negligible	n_3	.000 - .004		.003	
	Minor		.005 - .015	.010		.010
	Appreciable		.020 - .030			
	Severe		.040 - .060			
Vegetation	Small	n_4	.002 - .010		.006	
	Medium		.010 - .025			
	Large		.025 - .050	.030		.030
	Very Large		.050 - .100			
Variations in Channel Cross section	Gradual	n_5	0	0		0
	Occ. Alt.		.001 - .005		.005	
	Freq. Alt.		.010 - .015			
				0.070	0.045	0.070
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Sever		1.3			
$n = (n_1 + n_2 + n_3 + n_4 + n_5)m$				**0.070**	**0.045**	**0.070**

Wash 11, Reach J, Photo B-14:
Looking upstream (northwest) from the Nelson property on the Asher Hills, Wash 11, Reach J is in the upper center of the photo, 174th Street is visible in the foreground.

Wash 11, Reach J, Photo C-1:
Looking upstream (west) from approximately 400 feet upstream (west) of 174th Street.

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Rio Verde South Floodplain Delineation Study Extension, FCD97-13
Stream: Wash 11
Location: Reach J
Photo No: B-14, C-1

Channel Conditions		Manning's n Adjustment		Left Overbank (Sand with some cobbles)	Channel (Coarse Sand/Gravel)	Right Overbank (Sand with some cobbles)
Channel Material	Concrete	n_1	.012 - .018			
	Firm Soil		.025 -.032			
	Coarse Sand		.026 - .035	.026		.026
	Gravel		.028 - .035		.028	
	Cobble		.030 - .050			
	Boulder		.040 - .070			
Degree of Irregularity	Smooth	n_2	0	0		0
	Minor		.001 - .005		.002	
	Moderate		.006 - .010			
	Severe		.011 - .020			
Effects of Obstruction	Negligible	n_3	.000 - .004		.002	
	Minor		.005 - .015	.010		.010
	Appreciable		.020 - .030			
	Severe		.040 - .060			
Vegetation	Small	n_4	.002 - .010		.004	
	Medium		.010 - .025			
	Large		.025 - .050	.029		.029
	Very Large		.050 - .100			
Variations in Channel Cross section	Gradual	n_5	0	0	0	0
	Occ. Alt.		.001 - .005			
	Freq. Alt.		.010 - .015			
				0.065	0.036	0.065
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Sever		1.3			
$n = (n_1 + n_2 + n_3 + n_4 + n_5)m$				**0.065**	**0.036**	**0.065**

User 0.035

Wash 11, Reach K, Photo C-21:
Looking downstream (east) from 156th Street.

Wash 11, Reach K, Photo D8:
Looking downstream (east) from 164th Street.

Wash 11, Reach K, Photo D-9:
Looking downstream (east) at the point where Wash 12 splits off from Wash 11 (Wash 11 to the right, Wash 12 to the left).

Wash 11, Reach K, Photo D-22:
Looking downstream (east) from 168th Street.

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

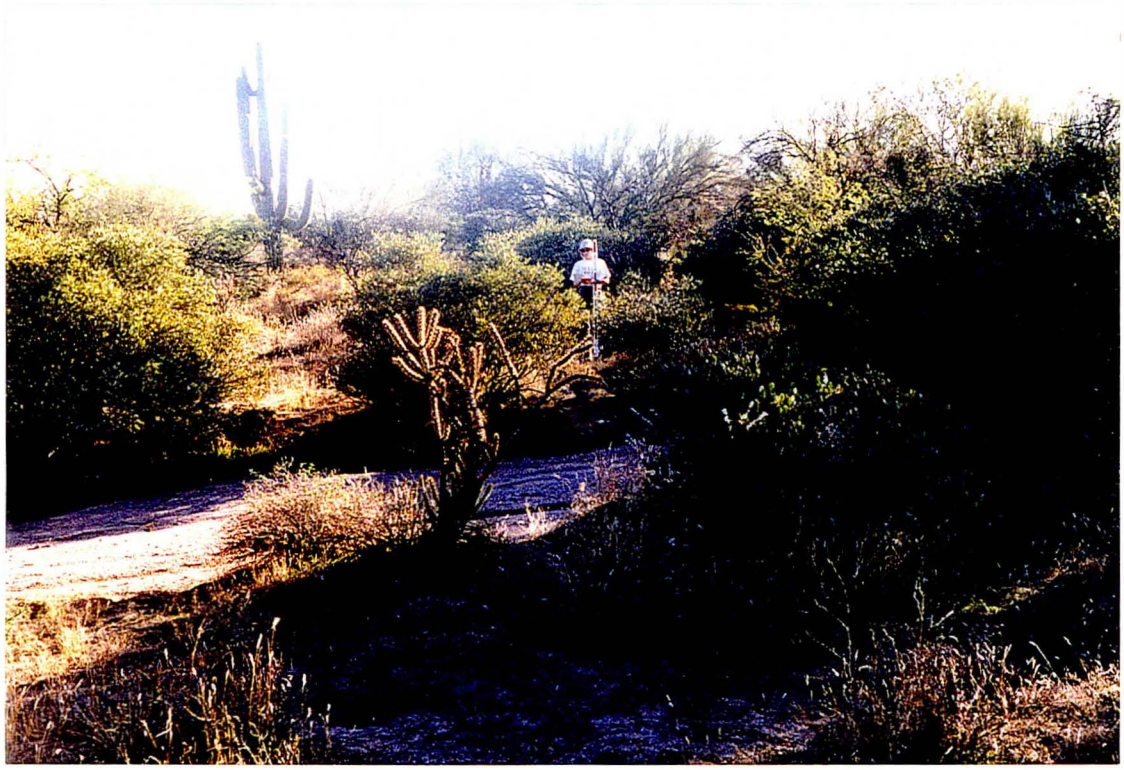
Project: Rio Verde South Floodplain Delineation Study Extension, FCD 97-13
Stream: Wash 11
Location: Reach K
Photo No: C-21, D-8, D-9, D-22

Channel Conditions		Manning's n Adjustment		Left Overbank (Sand with some cobbles)	Channel (Coarse Sand/Gravel)	Right Overbank (Sand with some cobbles)
Channel Material	Concrete	n_1	.012 - .018			
	Firm Soil		.025 -.032			
	Coarse Sand		.026 - .035	.026		.026
	Gravel		.028 - .035		.028	
	Cobble		.030 - .050			
	Boulder		.040 - .070			
Degree of Irregularity	Smooth	n_2	0	0		0
	Minor		.001 - .005		.003	
	Moderate		.006 - .010			
	Severe		.011 - .020			
Effects of Obstruction	Negligible	n_3	.000 - .004		.003	
	Minor		.005 - .015	.010		.010
	Appreciable		.020 - .030			
	Severe		.040 - .060			
Vegetation	Small	n_4	.002 - .010		.006	
	Medium		.010 - .025			
	Large		.025 - .050	.029		.029
	Very Large		.050 - .100			
Variations in Channel Cross section	Gradual	n_5	0	0	0	0
	Occ. Alt.		.001 - .005			
	Freq. Alt.		.010 - .015			
				0.065	0.040	0.065
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Sever		1.3			
$n = (n_1 + n_2 + n_3 + n_4 + n_5)m$				**0.065**	**0.040**	**0.065**

Wash 11.0100, Reach L, Photo B-22:
Looking upstream (west) from approximately 700 feet west of the 174th Street alignment.

Wash 11.0100, Reach L, Photo D-20:
Looking downstream (east) from approximately 200 feet east of 168th Street.

Wash 11.0100, Reach L, Photo G-10:
Looking downstream (east) from 164th Street.



Wash 11.0100, Reach L, Photo G-12:
Looking south across wash at overbank areas from approximately 100 feet east of 164th Street.

Wash 11.0100, Reach L, Photo G-13:
Looking downstream (east) from approximately 250 feet east of 162nd Street.

Wash 11.0100, Reach L, Photo G-14:
Looking south across wash at overbank area from approximately 250 feet east of 162nd Street.

Wash 11.0100, Reach L, Photo G-15:
Looking upstream (west) from 161st Street.

Wash 11.0100, Reach L, Photo G-16:
Looking north across wash at overbank area from approximately 150 feet west of 161st Street.

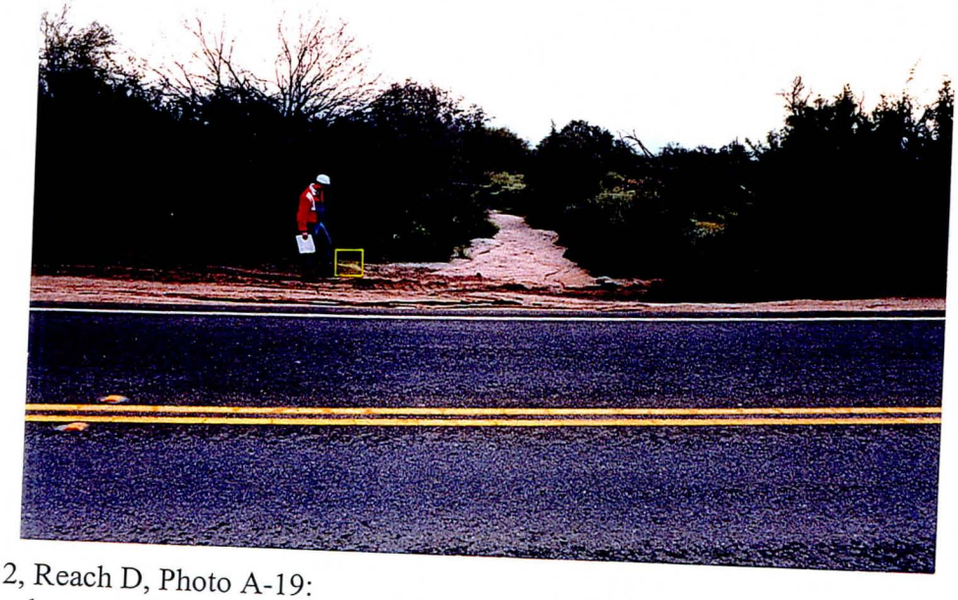
Wash 11.0100, Reach L, Photo G-18:
Looking downstream (east) from approximately 200 feet west of the158th Street alignment.

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Rio Verde South Floodplain Delineation Study Extension, FCD 97-13
Stream: Wash 11.0100
Location: Reach L
Photo No: B22, D20, G10, G12, G13, G14, G15, G16, G18

Channel Conditions		Manning's n Adjustment		Left Overbank (Sand with some cobbles)	Channel (Coarse Sand/Gravel)	Right Overbank (Sand with some cobbles)
Channel Material	Concrete	n_1	.012 - .018			
	Firm Soil		.025 -.032			
	Coarse Sand		.026 - .035	.026		.026
	Gravel		.028 - .035		.028	
	Cobble		.030 - .050			
	Boulder		.040 - .070			
Degree of Irregularity	Smooth	n_2	0	0		0
	Minor		.001 - .005		.003	
	Moderate		.006 - .010			
	Severe		.011 - .020			
Effects of Obstruction	Negligible	n_3	.000 - .004		.003	
	Minor		.005 - .015	.010		.010
	Appreciable		.020 - .030			
	Severe		.040 - .060			
Vegetation	Small	n_4	.002 - .010		.006	
	Medium		.010 - .025			
	Large		.025 - .050	.029		.029
	Very Large		.050 - .100			
Variations in Channel Cross section	Gradual	n_5	0	0	0	0
	Occ. Alt.		.001 - .005			
	Freq. Alt.		.010 - .015			
				0.065	0.040	0.065
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Sever		1.3			
$n = (n_1 + n_2 + n_3 + n_4 + n_5)m$				**0.065**	**0.040**	**0.065**

Wash 12, Reach D, Photo A-18:
Looking upstream (west) from Forest Road.



Wash 12, Reach D, Photo A-19:
Looking downstream (east) from Forest Road.

Wash 12, Reach D, Photo A-21:
Looking upstream (west) from fence just west of Forest Road.

Wash 12, Reach D, Photo A-23:
Looking downstream (east) across Forest Road.

Wash 12, Reach E, Photo C-9:
Looking upstream (west) from 176th Street.

Wash 12, Reach E, Photo C-10:
Looking downstream (east) from 176th Street.

Wash 12, Reach E, Photo C-11:
Looking downstream (east) from downstream of 176th Street at overbank "finger".

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Rio Verde South Floodplain Delineation Study Extension, FCD 97-13
Stream: Wash 12
Location: Reach E
Photo No: C-9, C-10, C-11

Channel Conditions		Manning's n Adjustment		Left Overbank (Clay/Sand)	Channel (Coarse Sand/Gravel)	Right Overbank (Clay/Sand)
Channel Material	Concrete	n_b	.012 - .018			
	Firm Soil		.025 -.032			
	Coarse Sand		.026 - .035	.025	.025	.025
	Gravel		.028 - .035			
	Cobble		.030 - .050			
	Boulder		.040 - .070			
Degree of Irregularity	Smooth	n_1	0	0		0
	Minor		.001 - .005		.002	
	Moderate		.006 - .010			
	Severe		.011 - .020			
Effects of Obstruction	Negligible	n_2	.000 - .004		.003	
	Minor		.005 - .015	.008		.008
	Appreciable		.020 - .030			
	Severe		.040 - .060			
Vegetation	Small	n_3	.002 - .010			
	Medium		.010 - .025	.020	.004	.020
	Large		.025 - .050			
	Very Large		.050 - .100			
Variations in Channel Cross section	Gradual	n_4	0	0		0
	Occ. Alt.		.001 - .005		.001	
	Freq. Alt.		.010 - .015			
				0.053	0.035	0.053
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Sever		1.3			
$n = (n_b + n_1 + n_2 + n_3 + n_4)m$				**0.053**	**0.035**	**0.053**
				Use 0.055		**Use 0.055**

Wash 12, Reach F, Photo E-4:
Looking upstream (west) from 172nd Street.

Wash 12, Reach F, Photo E-5:
Looking downstream (east) from approximately 400 feet downstream of 172nd Street.

Wash 12, Reach F, Photo E-6:
Looking at left overbank from approximately 400 feet downstream of 172nd Street.

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Rio Verde South Floodplain Delineation Study Extension, FCD 97-13
Stream: Wash 12
Location: Reach F
Photo No: E-4, E-5, E-6

Channel Conditions		Manning's n Adjustment		Left Overbank (Clay/Sand)	Channel (Coarse Sand/Gravel)	Right Overbank (Clay/Sand)
Channel Material	Concrete	n_1	.012 - .018			
	Firm Soil		.025 -.032			
	Coarse Sand		.026 - .035	.025	.025	.025
	Gravel		.028 - .035			
	Cobble		.030 - .050			
	Boulder		.040 - .070			
Degree of Irregularity	Smooth	n_2	0	0		0
	Minor		.001 - .005		.005	
	Moderate		.006 - .010			
	Severe		.011 - .020			
Effects of Obstruction	Negligible	n_3	.000 - .004		.005	
	Minor		.005 - .015	.010		.010
	Appreciable		.020 - .030			
	Severe		.040 - .060			
Vegetation	Small	n_4	.002 - .010		.006	
	Medium		.010 - .025			
	Large		.025 - .050	.028		.028
	Very Large		.050 - .100			
Variations in Channel Cross section	Gradual	n_5	0	0		0
	Occ. Alt.		.001 - .005		.003	
	Freq. Alt.		.010 - .015			
				0.063	0.044	0.063
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Sever		1.3			
$n = (n_1 + n_2 + n_3 + n_4 + n_5)m$				**0.063**	**0.044**	**0.063**
				Use 0.065	**Use 0.045**	**Use 0.065**

Wash 12, Reach G, Photo D-23:
Looking downstream (east) from approximately 150 feet downstream of 168th Street.

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

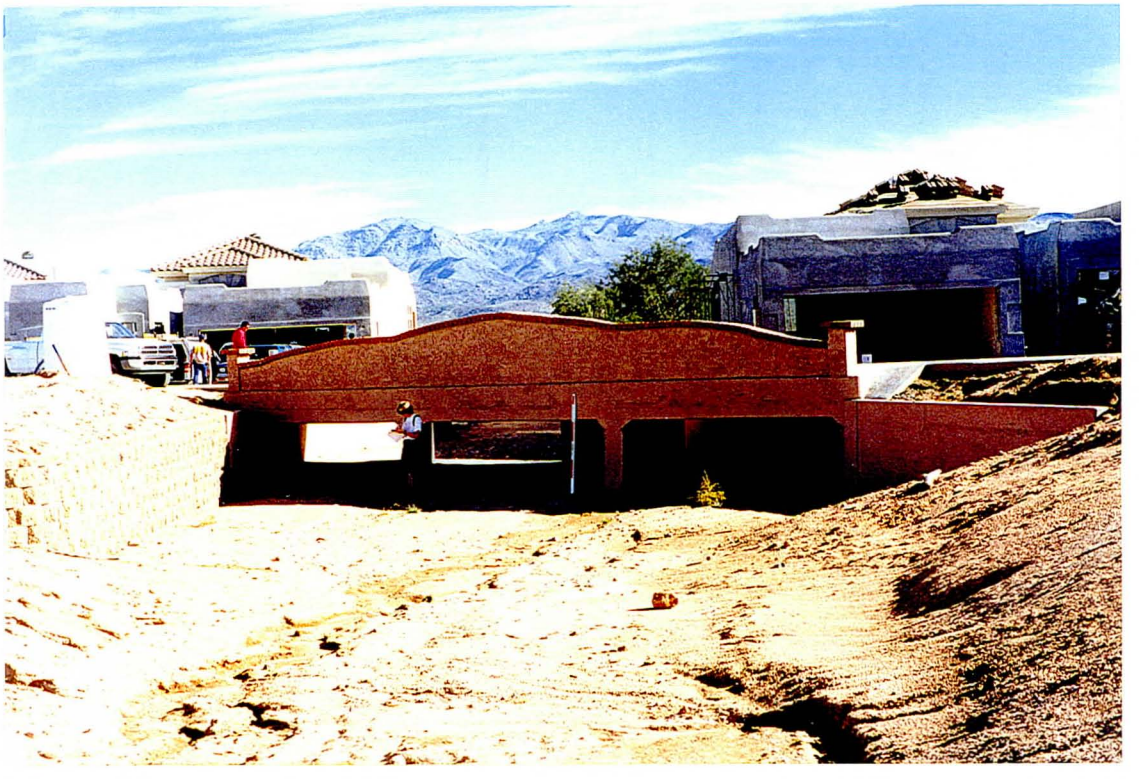
Project: Rio Verde South Floodplain Delineation Study Extension, FCD 97-13
Stream: Wash 12
Location: Reach G
Photo No: D-23

Channel Conditions		Manning's n Adjustment		Left Overbank (Clay/Sand)	Channel (Coarse Sand/Gravel)	Right Overbank (Clay/Sand)
Channel Material	Concrete	n_1	.012 - .018			
	Firm Soil		.025 -.032			
	Coarse Sand		.026 - .035	.025	.025	.025
	Gravel		.028 - .035			
	Cobble		.030 - .050			
	Boulder		.040 - .070			
Degree of Irregularity	Smooth	n_2	0	0		0
	Minor		.001 - .005		.003	
	Moderate		.006 - .010			
	Severe		.011 - .020			
Effects of Obstruction	Negligible	n_3	.000 - .004		.005	
	Minor		.005 - .015	.010		.010
	Appreciable		.020 - .030			
	Severe		.040 - .060			
Vegetation	Small	n_4	.002 - .010		.006	
	Medium		.010 - .025			
	Large		.025 - .050	.028		.028
	Very Large		.050 - .100			
Variations in Channel Cross section	Gradual	n_5	0	0		0
	Occ. Alt.		.001 - .005		.001	
	Freq. Alt.		.010 - .015			
				0.063	0.04	0.063
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Sever		1.3			
$n = (n_1 + n_2 + n_3 + n_4 + n_5)m$				**0.063**	**0.04**	**0.063**
				Use 0.065		**Use 0.065**

Wash 12.0300, Reach H, Photo F-3:
Looking downstream (east) at Tonto Verde Drive culvert entrance (3-8'x3' RCBC).

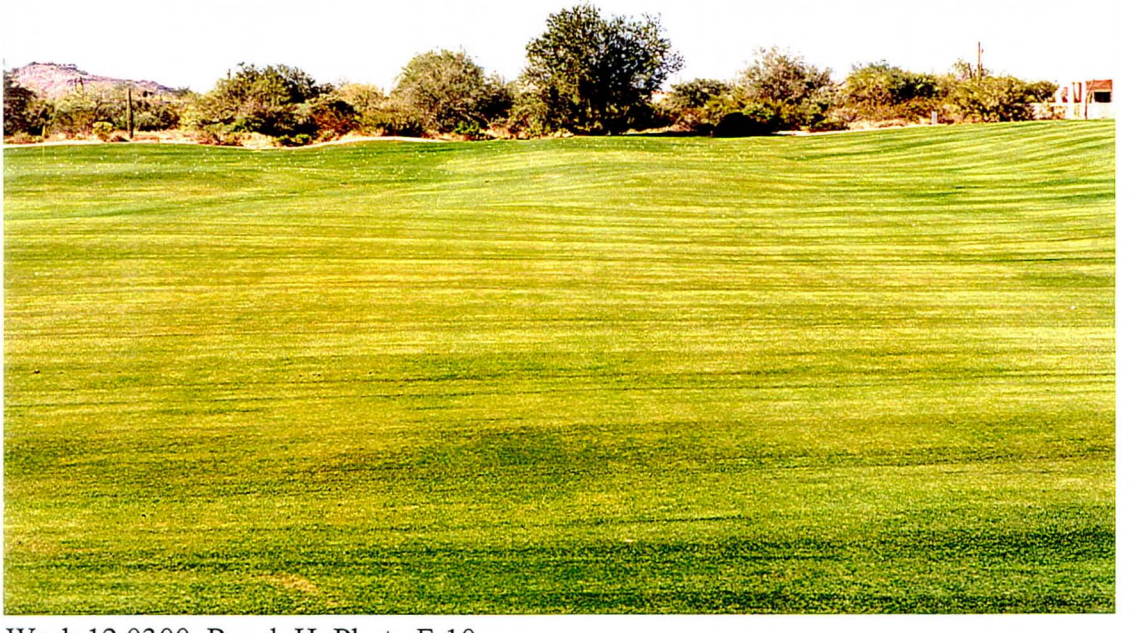
Wash 12.0300, Reach H, Photo F-4:
Looking upstream (west) from approximately 50 feet upstream of Tonto Verde Drive culvert entrance.

Wash 12.0300, Reach H, Photo F-5:
Looking uptream (west) across Forest Road.



Wash 12.0300, Reach H, Photo F-7:
Looking downstream (east) at Montana Road culvert entrance (3-10'x4' RCBC)..

Wash 12.0300, Reach H, Photo F-9:
Looking upstream (west) from approximately 150 feet upstream of the Montana Road culvert entrance.



Wash 12.0300, Reach H, Photo F-10:
Looking upstream (west) across driving range located between Montana Road and Azatlan Drive. The large Ironwood Tree at center is approximate location of thalweg.

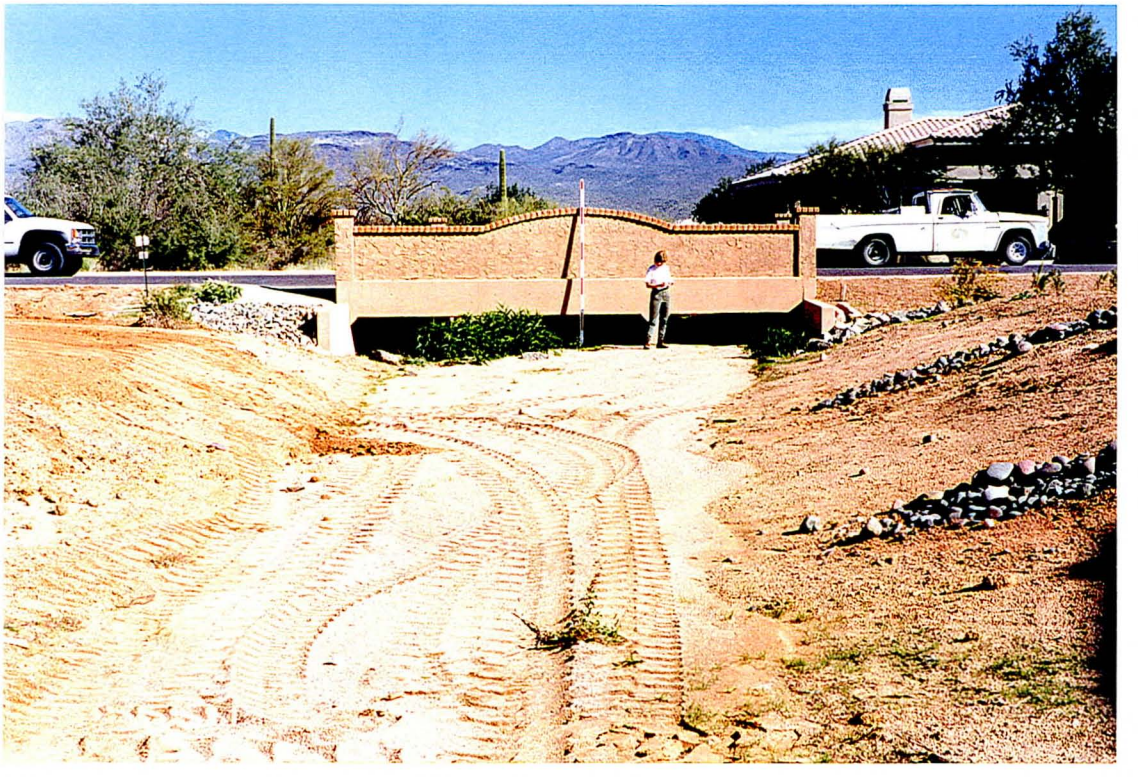
Wash 12.0300, Reach H, Photo F-11:
Looking downstream (east) from north end of fairway approximately 300 feet east (downstream) of Azatlan Dr.

Wash 12.0300, Reach H, Photo F-12:
Looking upstream (west) from north end of fairway approximately 300 feet east (downstream) of Azatlan Dr.

Wash 12.0300, Reach H, Photo F-14:
Looking downstream (east) at Azatlan Drive culvert entrance (2-10'x4' RCBC).

Wash 12.0300, Reach H, Photo F-16:
Looking downstream (east) at culvert entrance (2-4'x3' CMPA).under golf cart path, which is located between Azatlan Drive and Quintana Drive.

Wash 12.0300, Reach H, Photo F-17:
Looking downstream (east) at Quintana Drive culvert entrance (2-10'x4' RCBC).



Wash 12.0300, Reach H, Photo F-20:
Looking downstream (east) at Agua Verde Drive culvert entrance (3-8'x3' RCBC).

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Rio Verde South Floodplain Delineation Study Extension, FCD 97-13
Stream: Wash 12.0300
Location: Reach H
Photo No: F3, F4, F5, F7, F9, F10, F11, F12, F14, F16, F17, F20

Channel Conditions		Manning's n Adjustment		Left Overbank (Clay/Sand)	Channel (Coarse Sand/Gravel)	Right Overbank (Clay/Sand)
Channel Material	Concrete	n_1	.012 - .018			
	Firm Soil		.025 -.032	.025	.025	.025
	Coarse Sand		.026 - .035			
	Gravel		.028 - .035			
	Cobble		.030 - .050			
	Boulder		.040 - .070			
Degree of Irregularity	Smooth	n_2	0			
	Minor		.001 - .005	.002		.002
	Moderate		.006 - .010		.010	
	Severe		.011 - .020			
Effects of Obstruction	Negligible	n_3	.000 - .004			
	Minor		.005 - .015	.008	.005	.008
	Appreciable		.020 - .030			
	Severe		.040 - .060			
Vegetation	Small	n_4	.002 - .010		.002	
	Medium		.010 - .025	.015		.015
	Large		.025 - .050			
	Very Large		.050 - .100			
Variations in Channel Cross section	Gradual	n_5	0	0		0
	Occ. Alt.		.001 - .005		.003	
	Freq. Alt.		.010 - .015			
				0.05	0.045	0.05
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Sever		1.3			
$n = (n_1 + n_2 + n_3 + n_4 + n_5)m$				**0.05**	**0.045**	**0.05**

Wash 12.0300, Reach I, Photo F-23:
Looking upstream (west) from approximately 1,300 feet upstream of Aqua Verde Drive.

Wash 12.0300, Reach I, Photo F-24:
Looking south across wash at overbank area from approximately 1,300 feet upstream of Aqua Verde Drive.

Wash 12.0300, Reach I, Photo G-1:
Looking downstream (east) from approximately 300 feet downstream (east) of 176th Street.

Wash 12.0300, Reach I, Photo G-2:
Looking north across wash at overbank area from approximately 300 feet downstream of 176th Street.

Wash 12.0300, Reach I, Photo G-8:
Looking downstream (east) from approximately 300 feet upstream (west) of 174th Street.

Wash 12.0300, Reach I, Photo G-9:
Looking north across wash at overbank area from approximately 300 feet upstream (west) of 174th Street.

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC METHOD

Project: Rio Verde South Floodplain Delineation Study Extension, FCD 97-13
Stream: Wash 12.0300
Location: Reach I
Photo No: F23, F24, G1, G2, G8, G9

Channel Conditions		Manning's n Adjustment		Left Overbank (Clay/Sand)	Channel (Coarse Sand/Gravel)	Right Overbank (Clay/Sand)
Channel Material	Concrete	n_1	.012 - .018			
	Firm Soil		.025 -.032			
	Coarse Sand		.026 - .035	.025	.025	.025
	Gravel		.028 - .035			
	Cobble		.030 - .050			
	Boulder		.040 - .070			
Degree of Irregularity	Smooth	n_2	0	0		0
	Minor		.001 - .005		.002	
	Moderate		.006 - .010			
	Severe		.011 - .020			
Effects of Obstruction	Negligible	n_3	.000 - .004		.003	
	Minor		.005 - .015	.008		.008
	Appreciable		.020 - .030			
	Severe		.040 - .060			
Vegetation	Small	n_4	.002 - .010			
	Medium		.010 - .025	.020	.004	.020
	Large		.025 - .050			
	Very Large		.050 - .100			
Variations in Channel Cross section	Gradual	n_5	0	0		0
	Occ. Alt.		.001 - .005		.001	
	Freq. Alt.		.010 - .015			
				0.053	0.035	0.053
Degree of Meandering	Minor	m	1	1	1	1
	Appreciable		1.15			
	Sever		1.3			
$n = (n_1 + n_2 + n_3 + n_4 + n_5)m$				**0.053**	**0.035**	**0.053**
				Use 0.055		**Use 0.055**

Major Hydraulic Structures

The most notable hydraulic structure in this study area is an earthen stock tank with a 36 inch steel pipe inlet and attendant diversion dike. This stock tank is located along 174th Street in the southeast quarter of Section 35, Township 5 North, Range 6 East. The stock tank is slightly larger than one acre in aerial extent. The diversion dike extends northwest from the stock tank along the north bank of Wash 11 for approximately 2,500 feet. Before the dike was constructed, the natural flow path in Wash 11 would have probably broken out to the east prior to reaching the area now occupied by the stock tank.

Photo B7: Looking northwest from the top of the Asher Hills toward the stock tank and Wash 11.

Based on the topographic mapping dated March, 1998, it appears that the stock tank will fill to an elevation of approximately 1,830 feet before water backs up at the inlet and flows around the tank to the south. At this elevation, there is approximately three to four feet of freeboard on the stock tank. If flows immediately upstream of the stock tank on Wash 11 exceed an elevation of between approximately 1833.5 feet and 1834 feet (a maximum flow depth of approximately 3.5 to 4 feet in Wash 11 at the tank inlet), the stock tank will most likely begin to overflow. This situation could result in failure of the stock tank since no emergency spillway was observed in the field.

According to Mrs. Eldrid Nelson, the owner of the stock tank and surrounding property, the stock tank was in place when she and her husband purchased the property in the early 1970s. Mrs. Nelson noted that there is evidence on the property in the form of old fencing and cattle loading structures that cattle were raised on this ranch in the late 1800s. Mrs. Nelson reported that the stock tank was damaged by a flood which occurred during the late spring or early summer of 1971. During that flood the tank filled to capacity, and the subsequent overflow washed away the north side of the tank. The tank was later repaired, however, no armored overflow spillway was constructed. Mrs. Nelson recalled that the precipitation totals in Phoenix for that storm were "about 5 inches", and that they had "about 2 inches more than that" at the ranch.

Between the 184th Street alignment and Forest Road, Wash 12.0300 passes through alternating constructed and natural reaches, including 5 concrete box culverts and one set of corrugated metal pipe arches. Table 6.7.1 contains an inventory of the culverts which are expected to affect the hydraulic characteristics of Wash 12.0300.

Table 6.7.1: Wash 12.0300 Culvert Inventory

Culvert Location	Description
Tonto Verde Drive	3-8'x3' RCBC
Montana Drive	3-10'x4' RCBC
Azatlan Drive	2-10'x4' RCBC
Golf Cart Path between Azatlan Dr. and Quintana Dr.	2-4'x3' CMPA
Quintana Drive	2-10'x4' RCBC
Agua Verde Drive	3-8'x3' RCBC

Dimensions for all culverts were verified in the field, and upstream and downstream cross sections were measured using a hand level and rod. Additional survey data were gathered by Brooks Hersey & Associates, Inc. for concrete box culverts and attendant roadways located at Tonto Verde Drive and Montana Drive.

Between Azatlan Drive and Montana Drive, Wash 12.0300 is diverted approximately 500 feet to the south via the driving range to an unnamed wash. An approximately 5-foot-high earthen embankment, which borders the east side of the driving range, prevents flood flows from impacting newly constructed homes located just to the east of the driving range.

General Floodplain Conditions

Washes 10, 11, 11.0100,12 and 12.0300 in this study area have alternating braided and confined reaches, with evidence of possible breakouts, splits and sheet flow areas. The channel beds are predominantly comprised of fine and coarse sand; gravel and small cobbles were observed in only a few isolated locations in the eastern end of the study area. The channel banks have gradual side slopes and are generally less than two feet high; brush and trees, and soils are often the better bank indicator than are slope breaks. Channel bank stations will be set at the top of the low flow channel, resulting in a typical channel depths of from approximately 0.5 feet to 3 feet. Channel bottom widths typically vary between 10 feet wide and 20 feet wide throughout the study area; however, there are short reaches in Wash 11 and Wash 12 with bottom widths up to 50 feet wide.

Vegetation throughout the study reaches include trees such as ironwood, mesquite, little leaf palo verde, some isolated creosote, various cactus such at saguaro, staghorn, pencil or christmas tree, and teddy bear cholla, various low-growing shrubs such as jojoba, mormon tea and brittle bush. Large, mature ironwood and paloverde trees occur primarily along the banks of the most well defined washes in this study area, and are often an indicator of dominant and abandoned reaches. In general, the study area is covered quite densely by this typical Upper Sonoran plant community.

Wash 10 enters the project area at 156th Street in a well defined channel which quickly splits into three less-well defined channels. Wash 10 is the most southerly of these channels, and is the most well defined of the three. Wash 10 has a fairly well defined straight channel for most of the reach in this study area. Wash 10 is broken up by two braided sections; one located at 160th Street, and one located downstream of 162nd Street. There is a possible breakout to the northeast from Wash 10 downstream of 164th Street. If a breakout does indeed exist here, then that flow would eventually join Wash 11 just upstream of the stock tank located on 174th Street via Wash 11.0100.

Wash 11 enters the project area at 156th street in a highly braided channel; taking on better definition by the time it crosses 160th Street. Wash 12 originates at a flow split off of Wash 11 at a location upstream of 164th Street. Between 164th Street and approximately the 171st Street alignment, Wash 11 has three identifiable flow paths which appear to eventually re-join the dominant channel. From the 171st Street alignment, Wash 11 is guided toward the stock tank located at 174th Street by an earthen levee. Just upstream of the stock tank, Wash 11 joins **Wash 11.0100** which receives breakout flows originating from Wash 10 and Wash 11 between 156th Street and 160th Streets near the upstream (west) end of the study area, and possibly from Wash 10 downstream of 164th Street.

Wash 12 originates at a flow split off of Wash 11 at a location approximately 600 feet upstream of 164th Street. However, Wash 12 is not well defined until downstream of 164th Street. A breakout to the south could occur at approximately the 167th Street alignment. This breakout would join a breakout originating from Wash 11 near the 166th Street alignment. These combined breakout flows would join Wash 11 just upstream of 168th Street. Between the 180th Street and 182nd Street alignments, Wash 12 passes near a series of three ponds which are protected from flood flows by a raised earthen embankment.

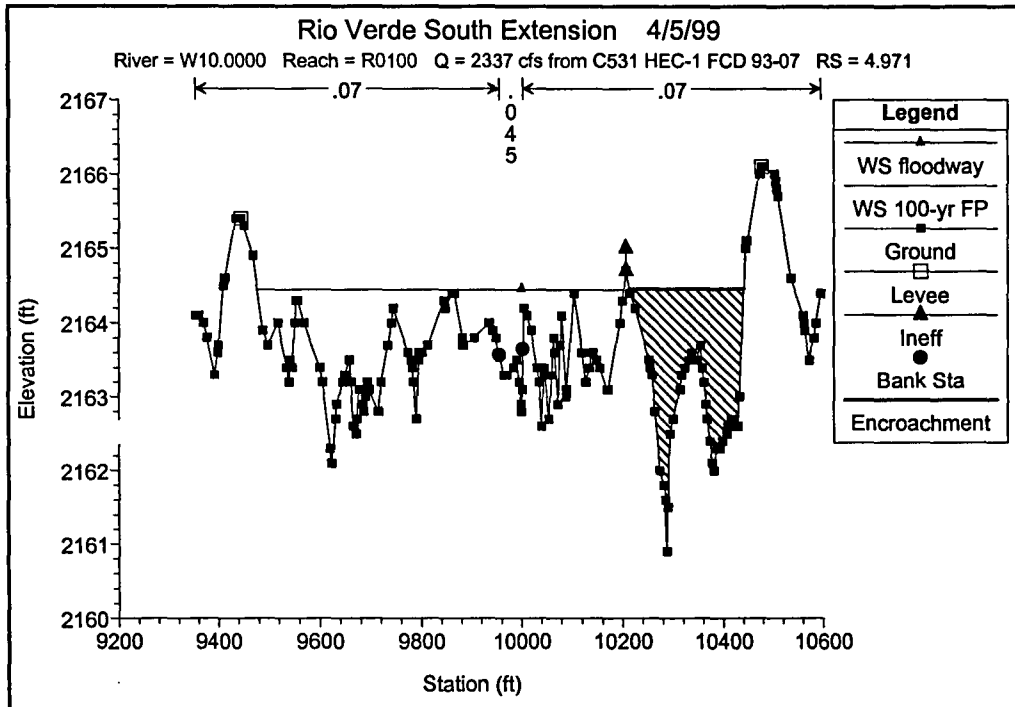
At approximately 2,900 feet upstream of Forest Road, Wash 12 cuts between two golf greens. For this extremely short reach, the bed material is comprised of sandy material and the overbank areas are grass. For the majority of Wash 12; however, the main channel top width is between five and 25 feet, with native Sonoran desert vegetation occupying the overbank areas.

Wash 12.0300 originates as breakout flow from Wash 12 at approximately 172nd Street. Between the 178th Street and180th Street alignments, Wash 12.0300 passes near two ponds which are protected from flood flows by a raised earthen embankment. Between the 184th Street alignment and Forest Road, Wash 12.0300 consists of alternating constructed and natural reaches.

In general, the overbank areas of natural portions of this reach (between the 184th Street alignment and Forest Road) have been thinned of selected vegetation or are encroached upon by new homes, golf cart paths, golf course greens and/or fairways. Constructed reaches are generally located adjacent to the five concrete box culverts and the one set of corrugated metal pipe culverts, which Wash 12.0300 passes through in this reach.

Constructed improvements include rip rap bank protection and splash pads downstream of culverts, and block and rock retaining walls.

E.2 Cross Section Plots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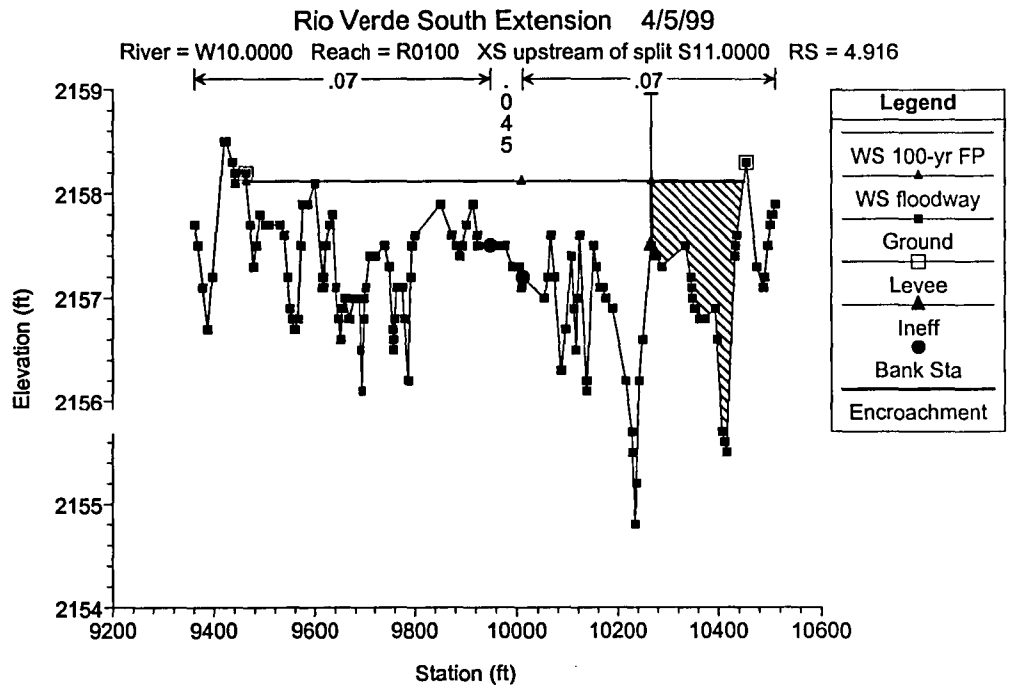
.07
.045
.07
Elevation (ft)
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Encroachment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.045
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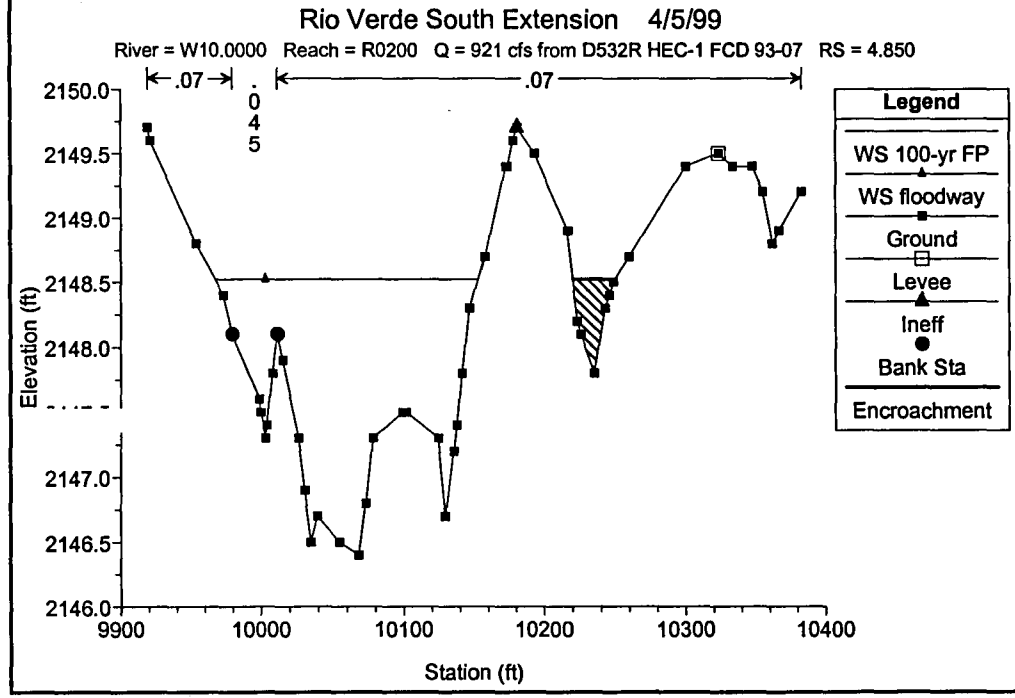
Elevation (ft)
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment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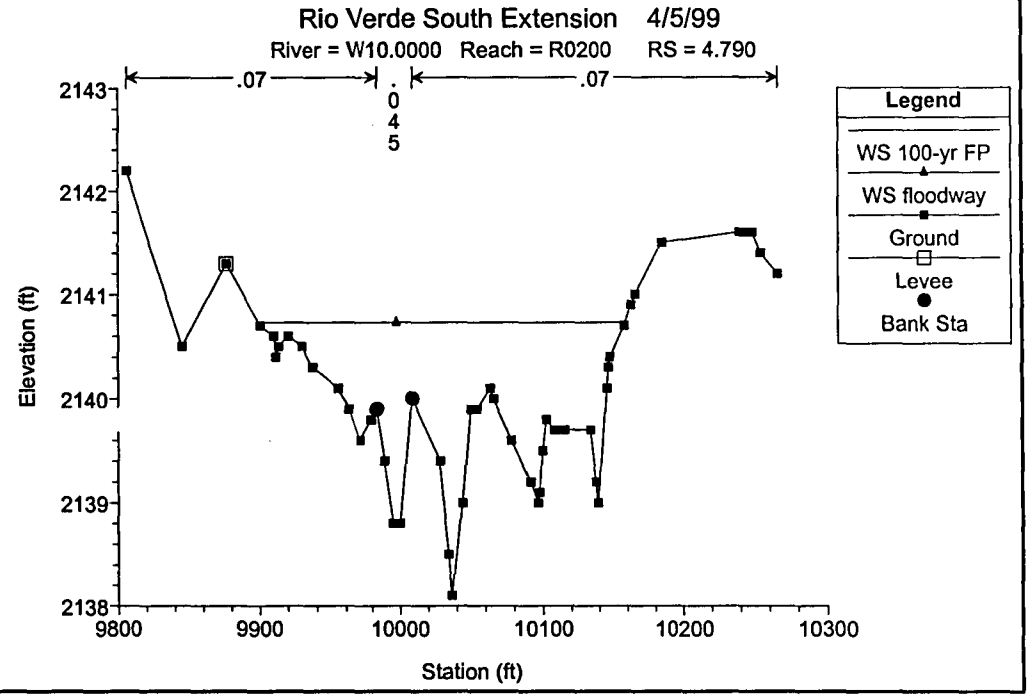
Elevation (ft)
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment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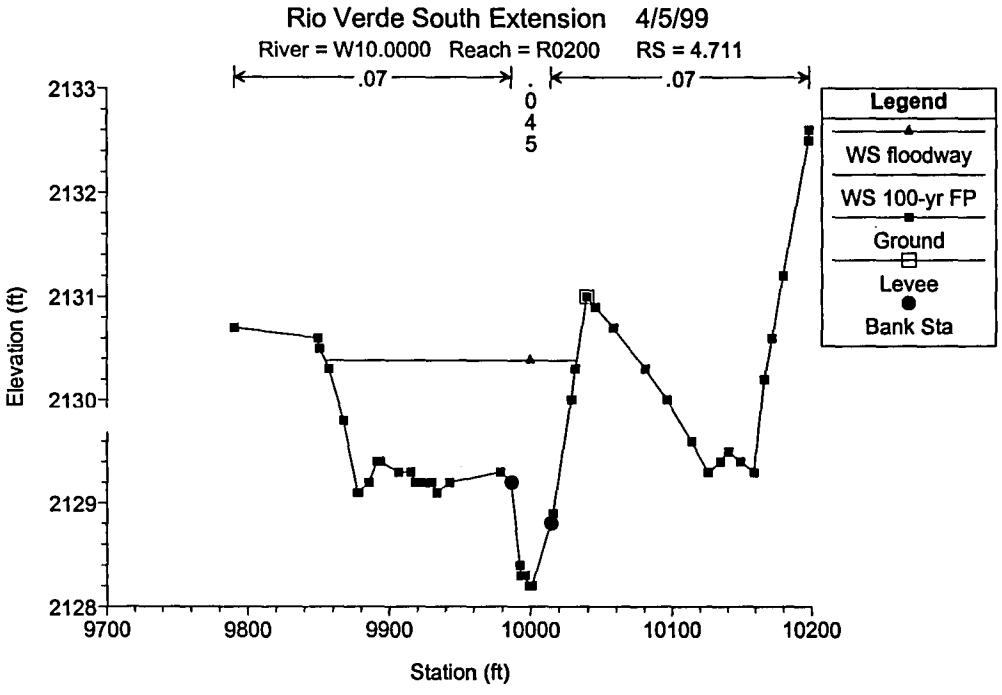
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta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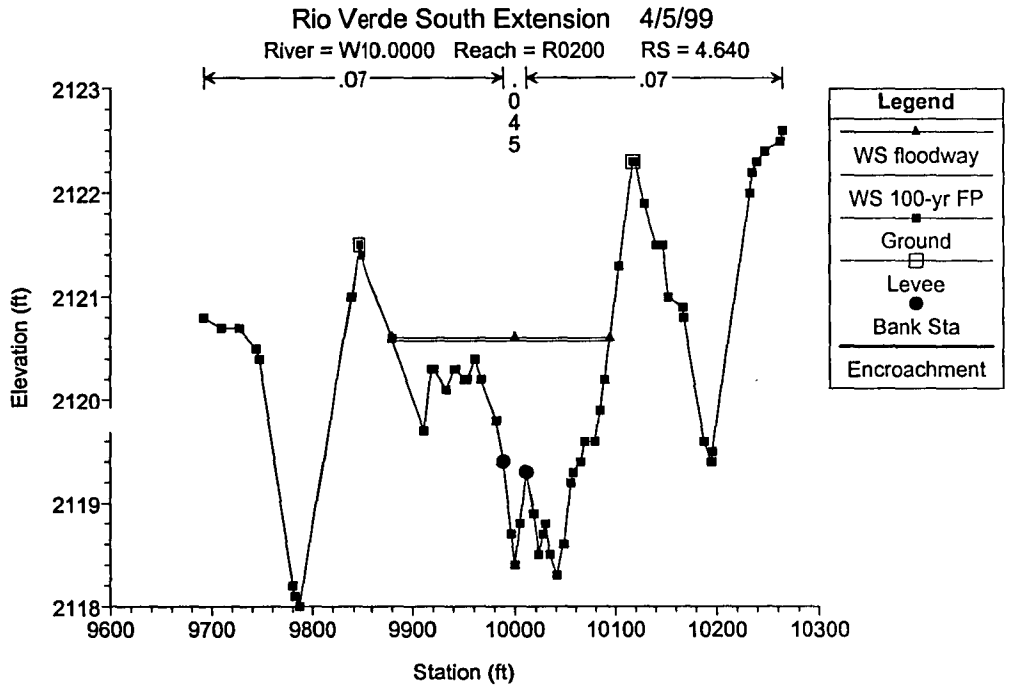
.07
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)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Legend
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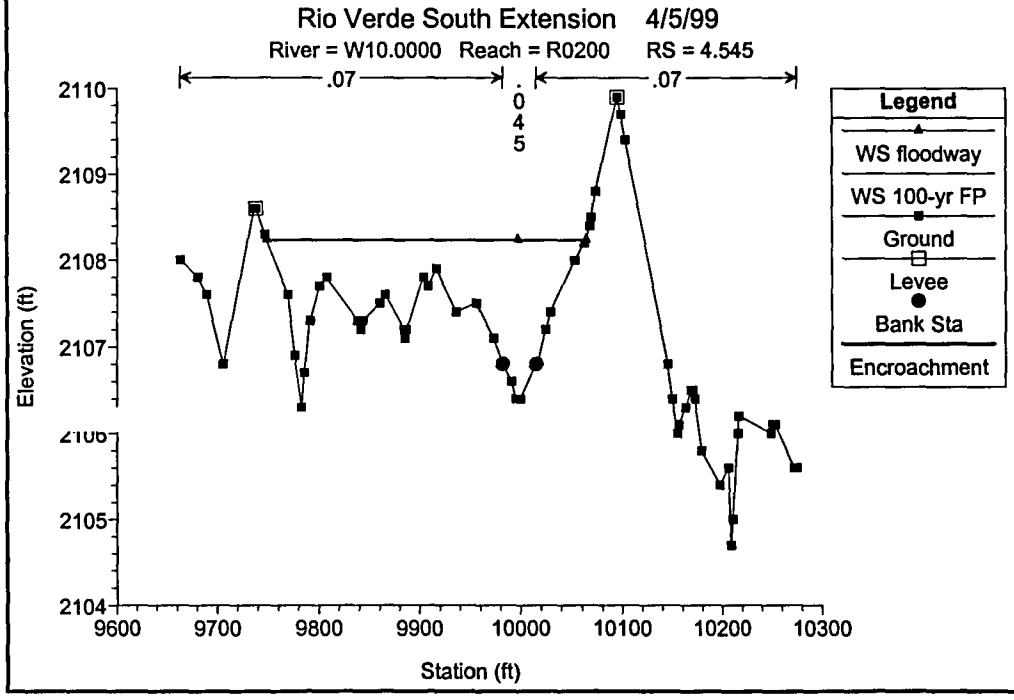
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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Legend
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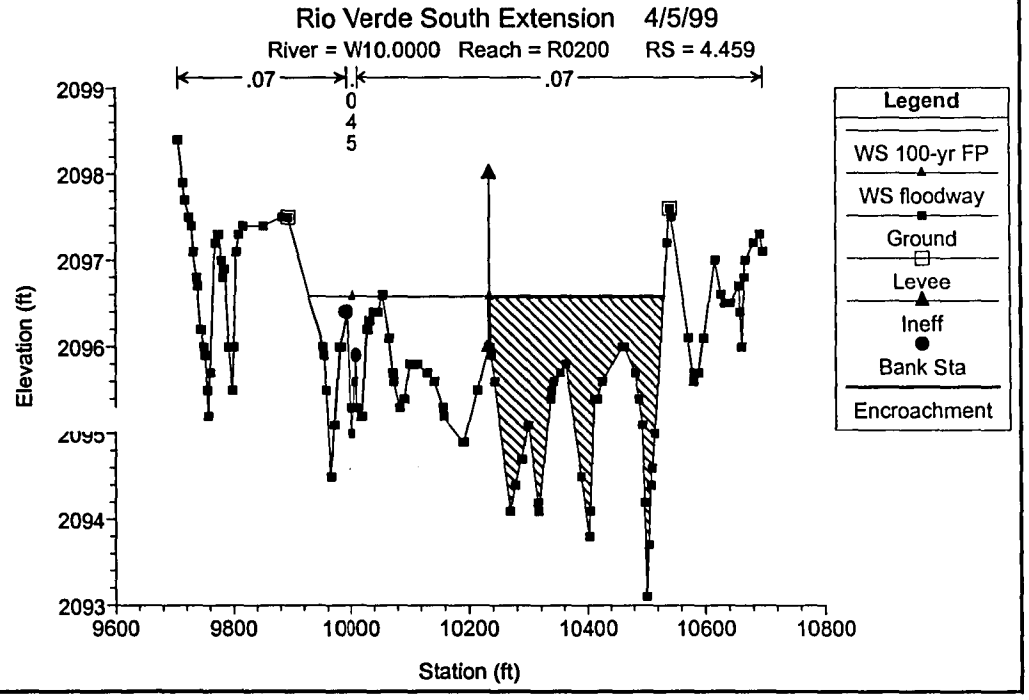
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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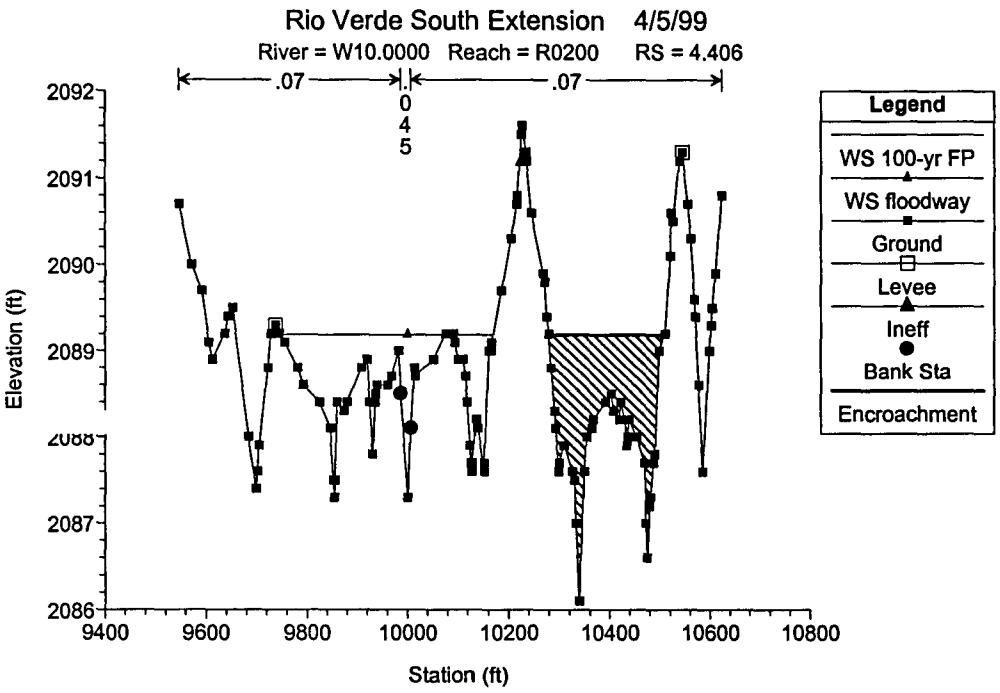
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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Ineff
Bank Sta
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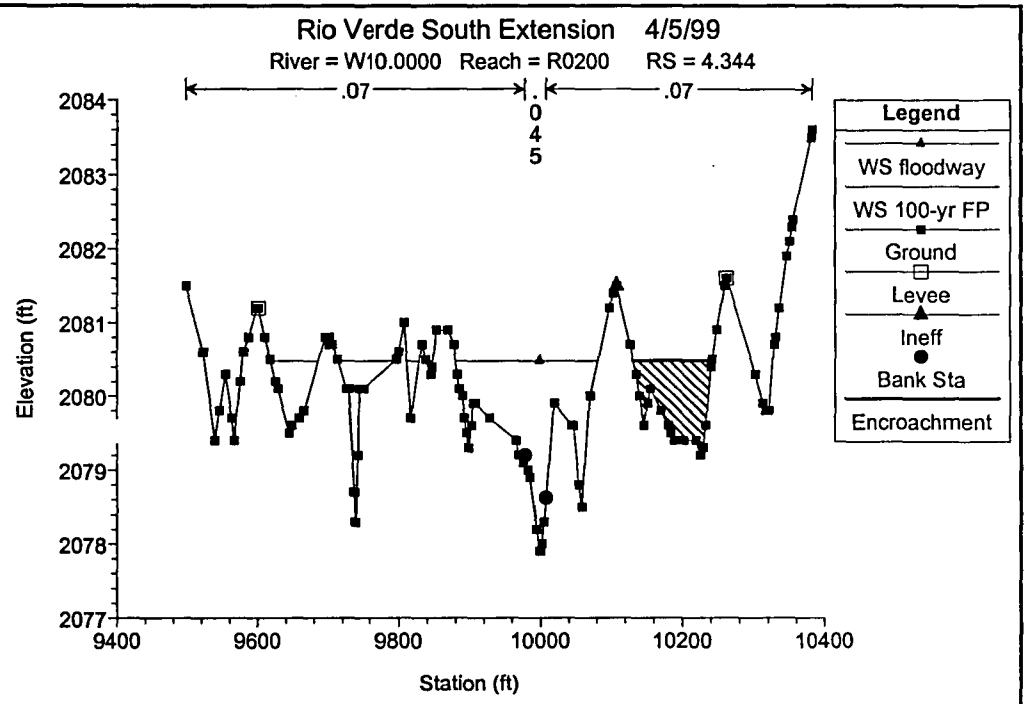
Elevation (ft)
Station (ft)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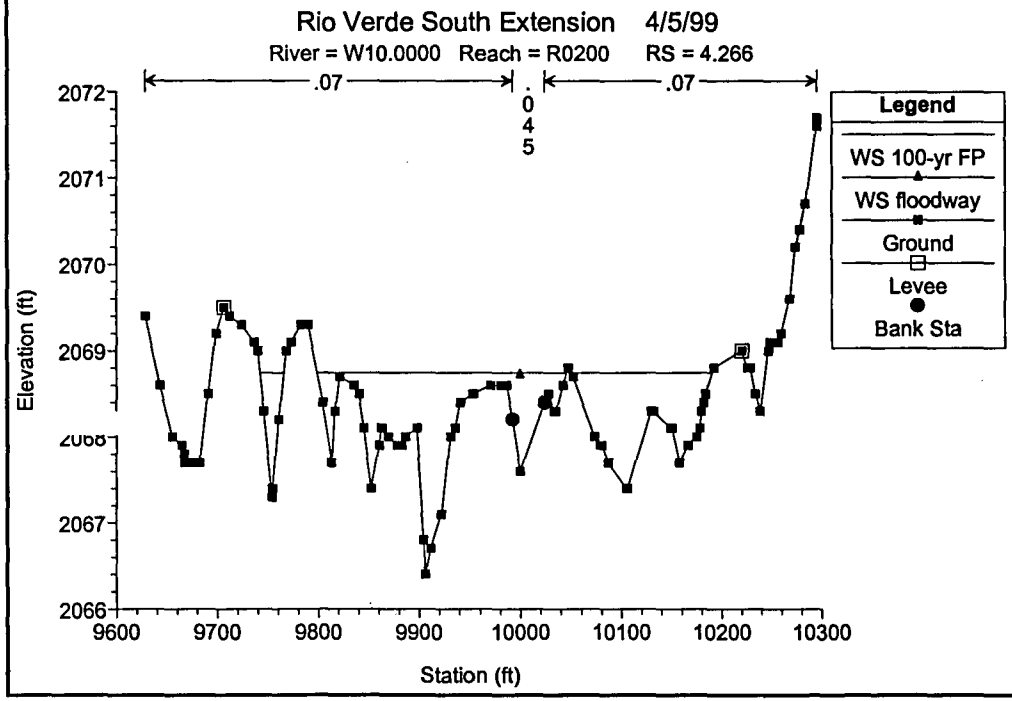
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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.045
.07
Legend
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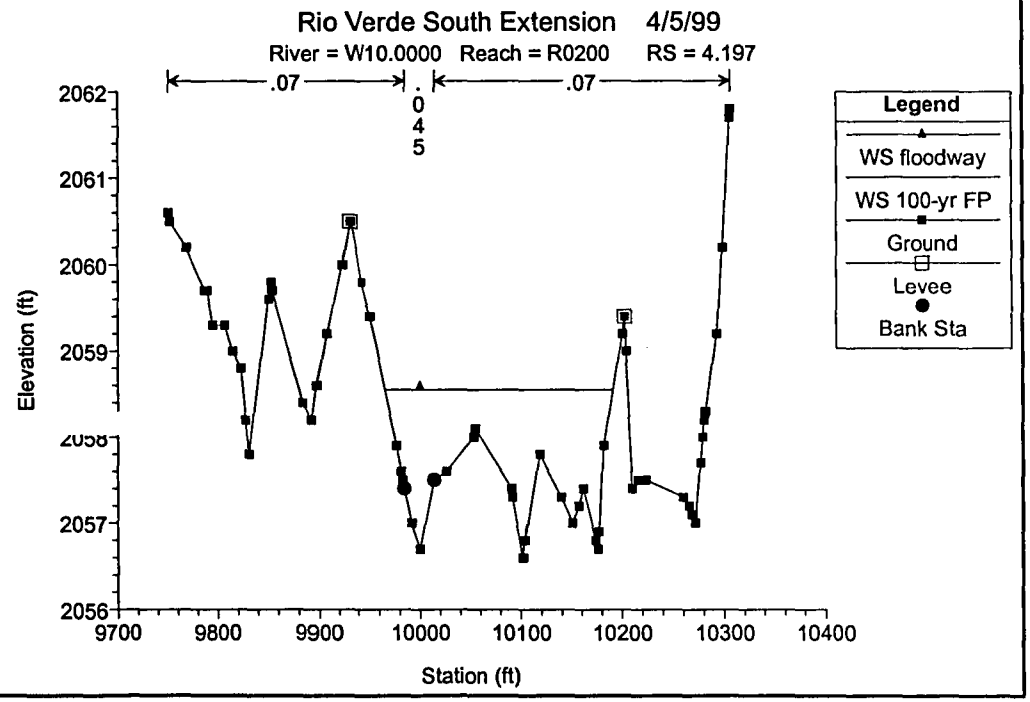
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)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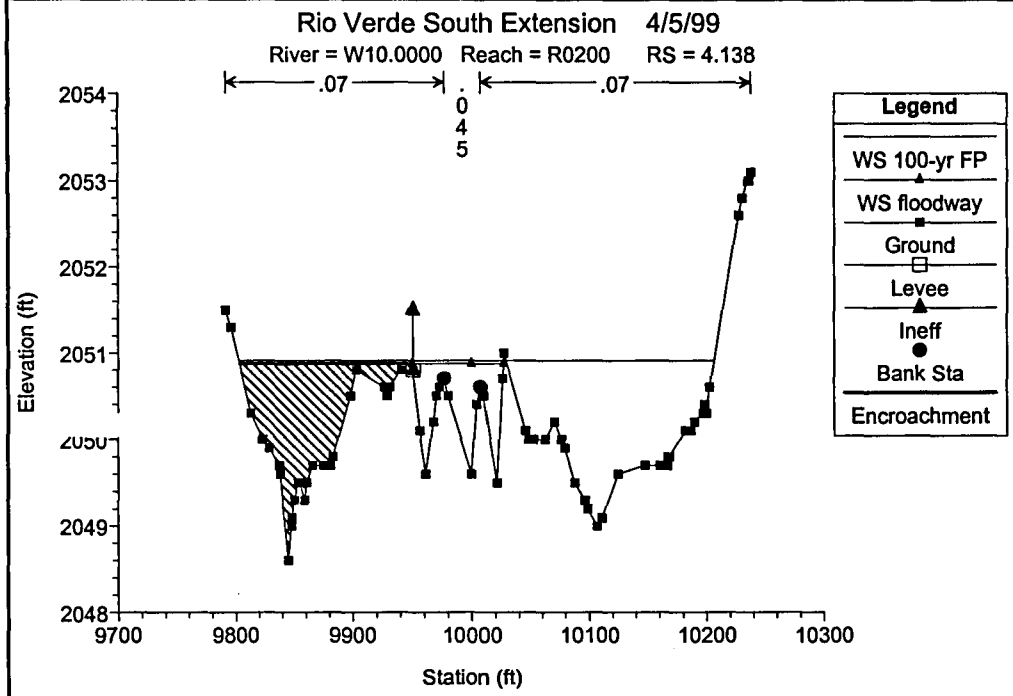
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)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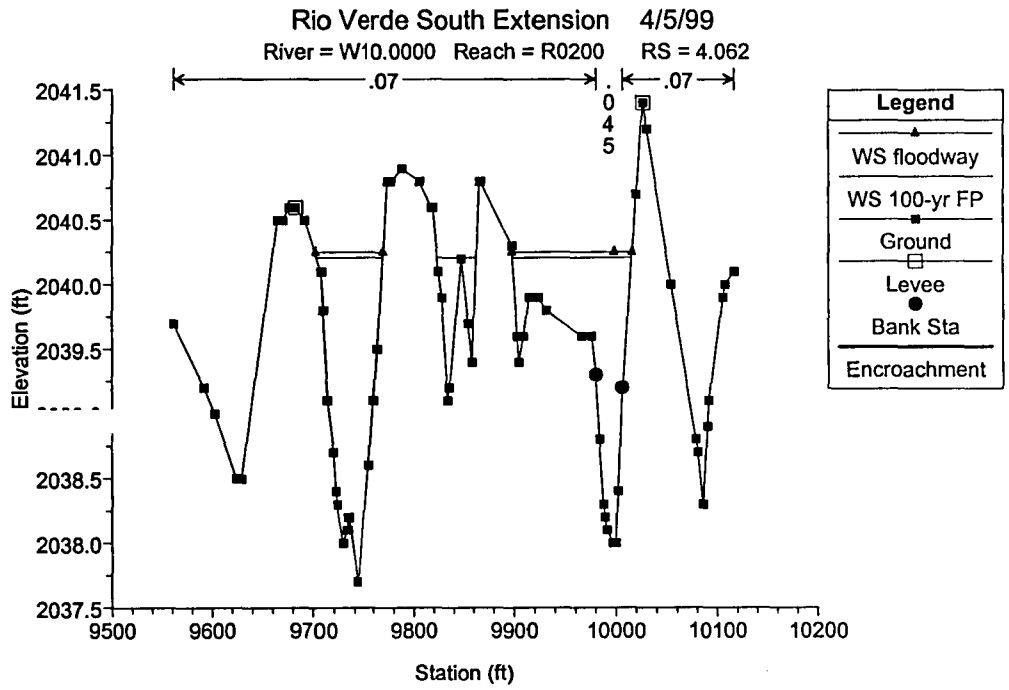
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment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.045
.07
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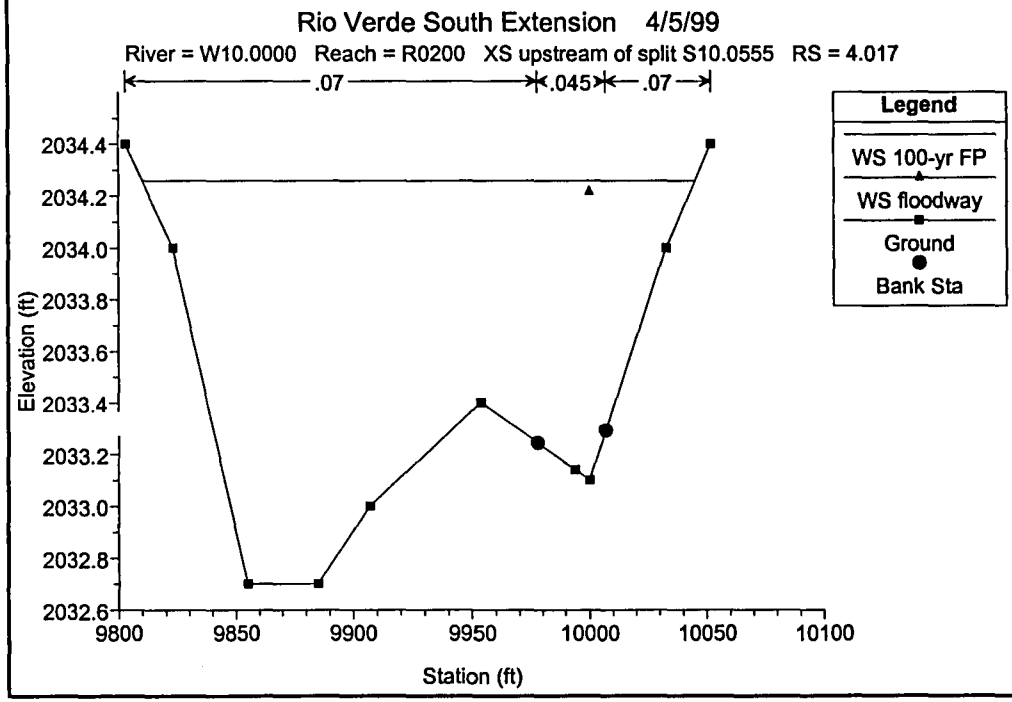
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment


Rio Verde South Extension 4/5/99
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.045
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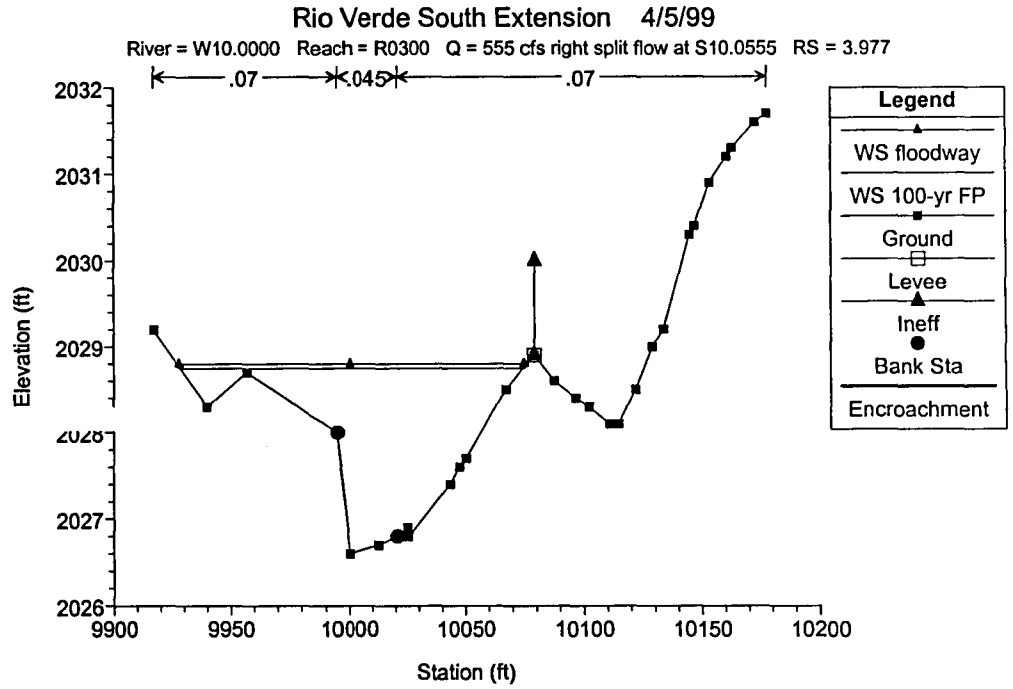
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta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Station (ft)
Legend
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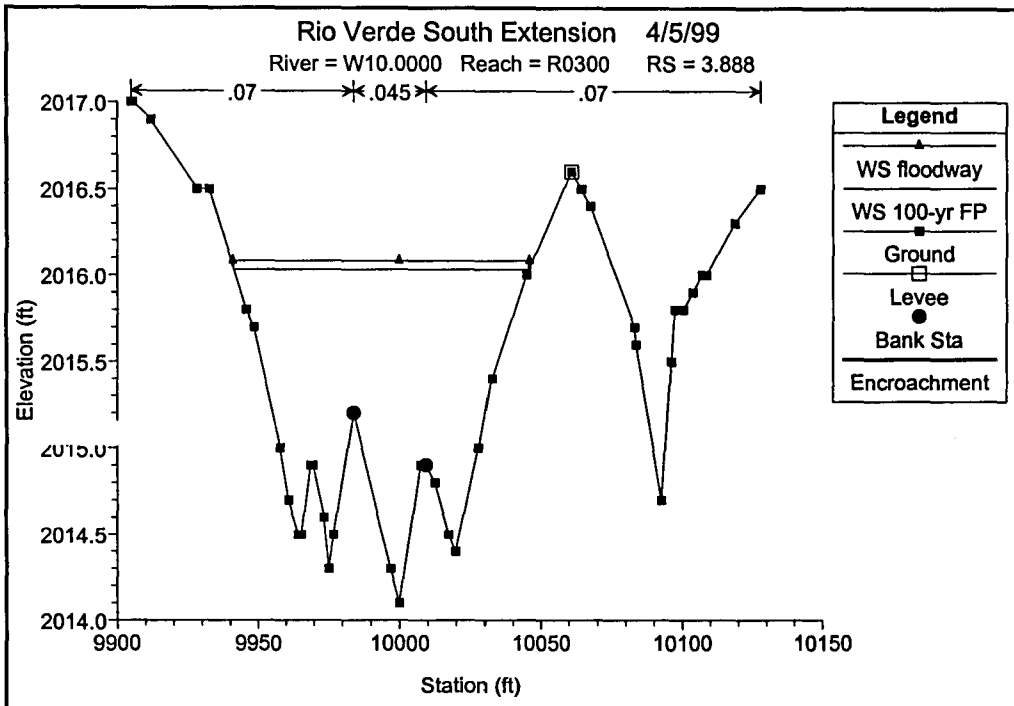
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Encroachment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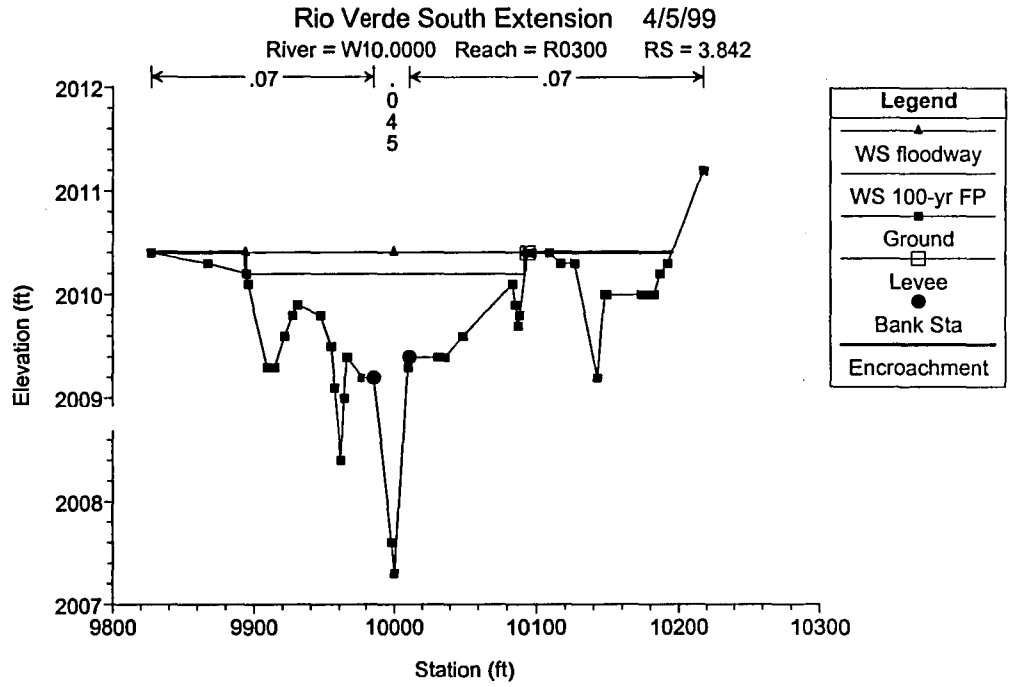
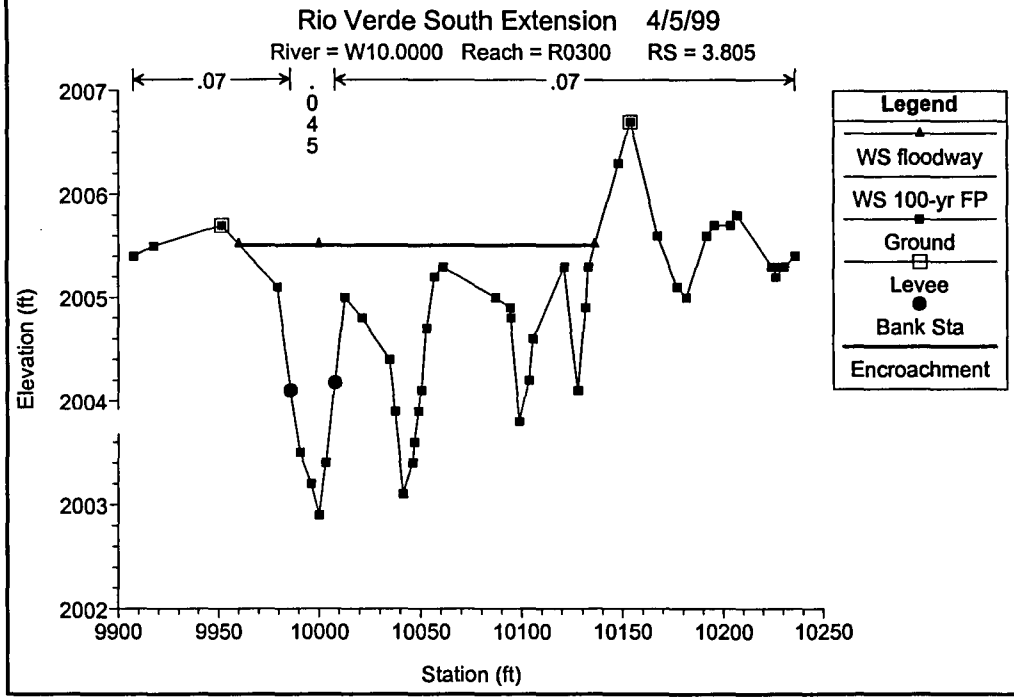
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment


Rio Verde South Extension 4/5/99
River = W10.0000 Reach = R0300 RS = 3.842
.07
.045
.07
Elevation (ft)
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment


Rio Verde South Extension 4/5/99
River = W10.0000 Reach = R0300 RS = 3.805
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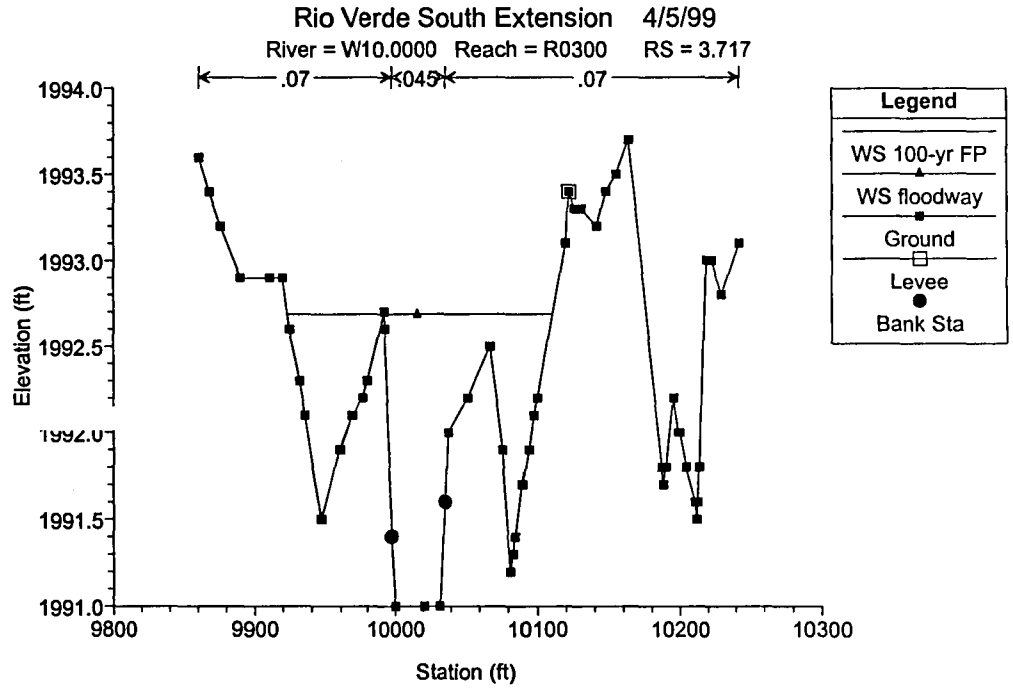
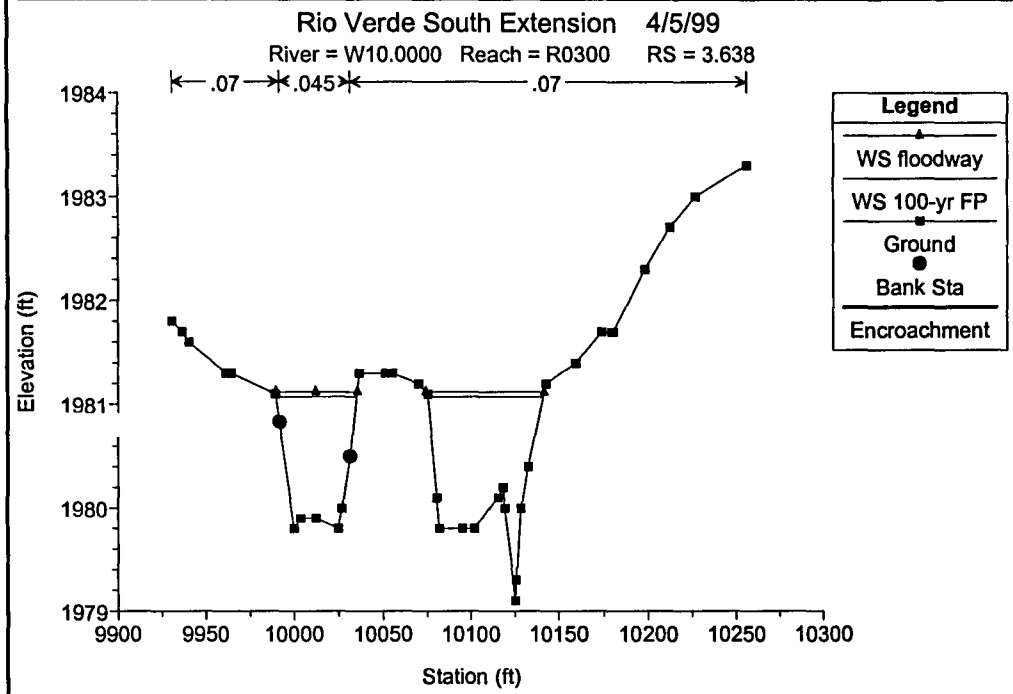
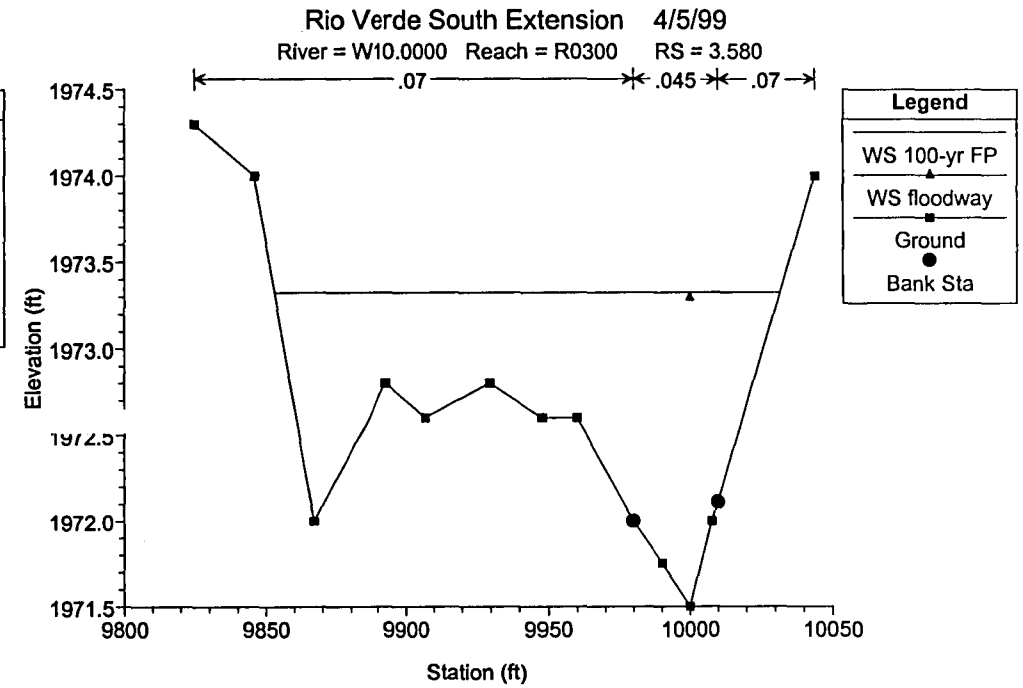
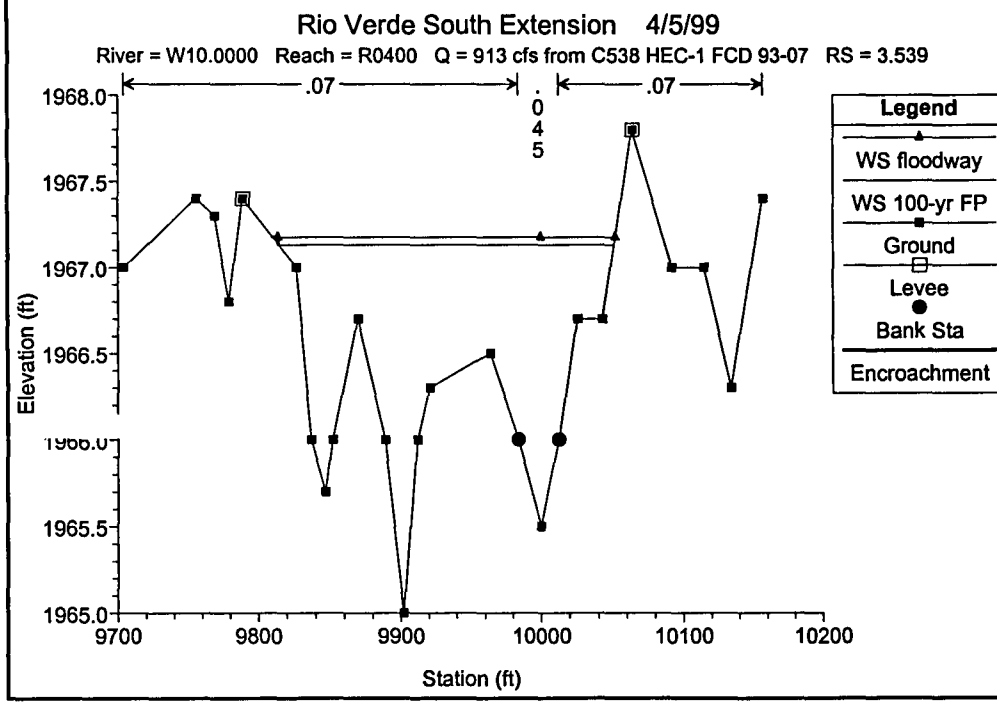
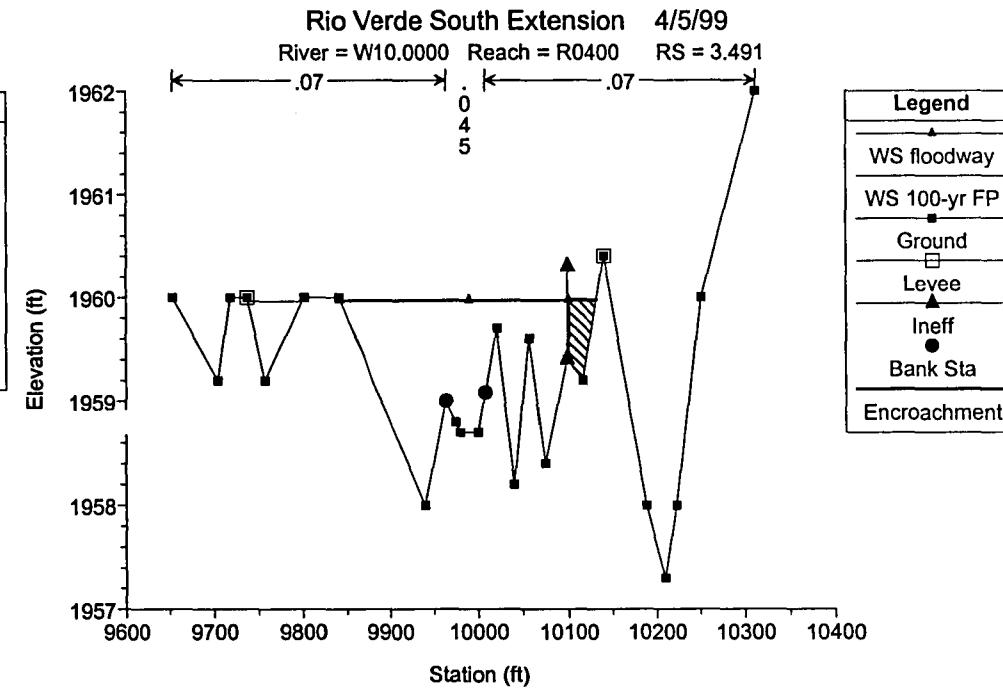
.045
.07
Elevation (ft)
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment

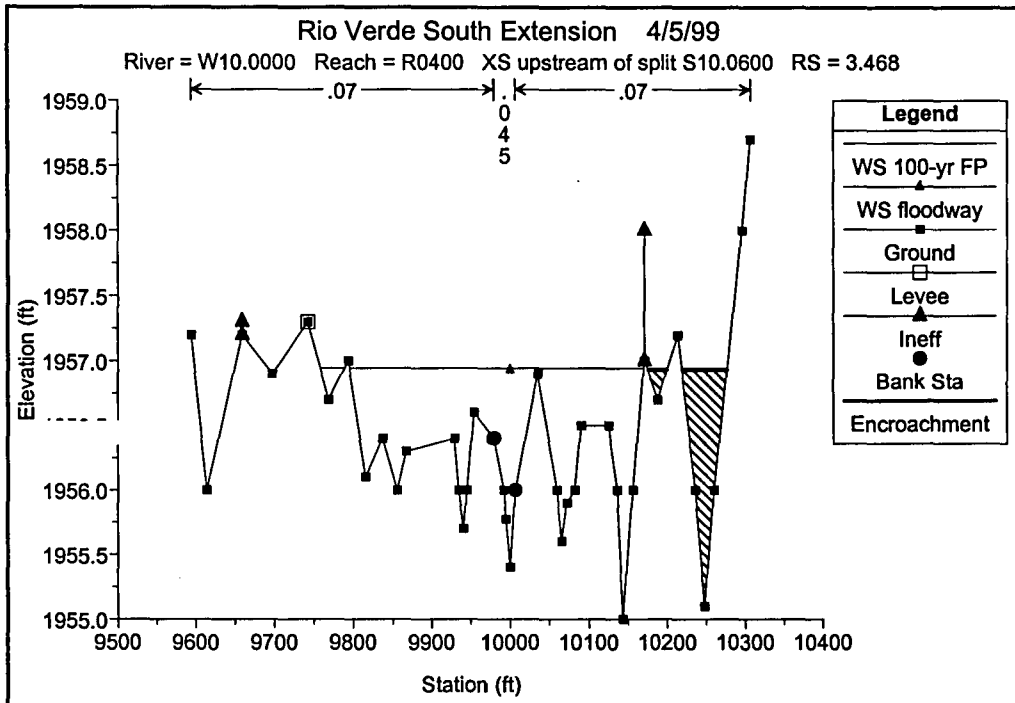

Rio Verde South Extension 4/5/99
River = W10.0000 Reach = R0300 RS = 3.717
.07
.045
.07
Elevation (ft)
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta

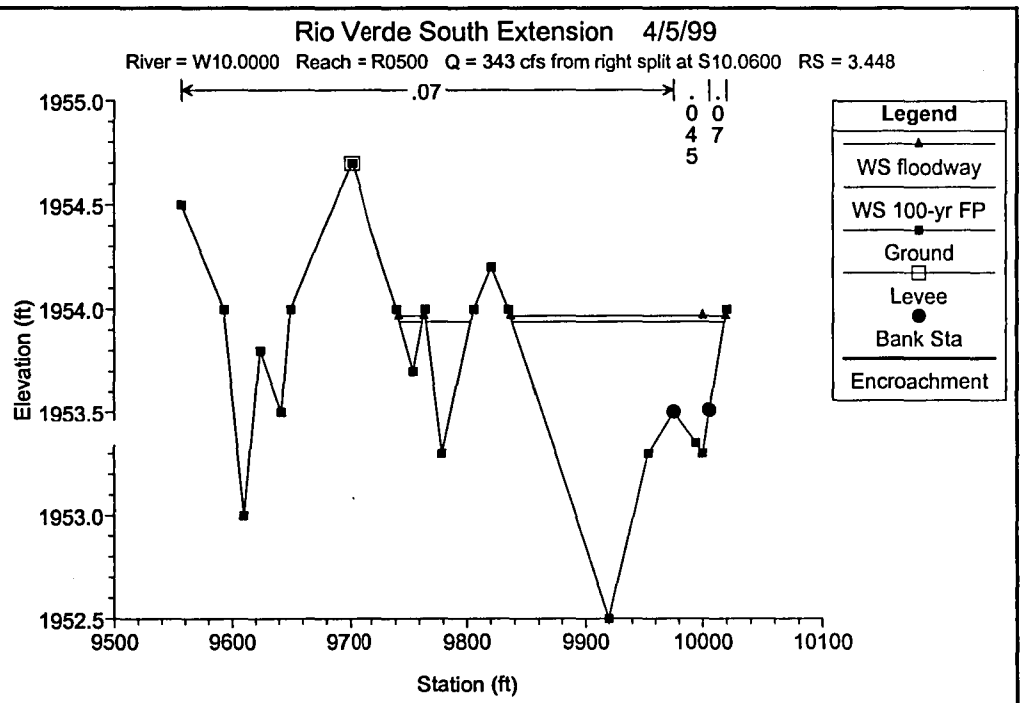

Rio Verde South Extension 4/5/99
River = W10.0000 Reach = R0300 RS = 3.638
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

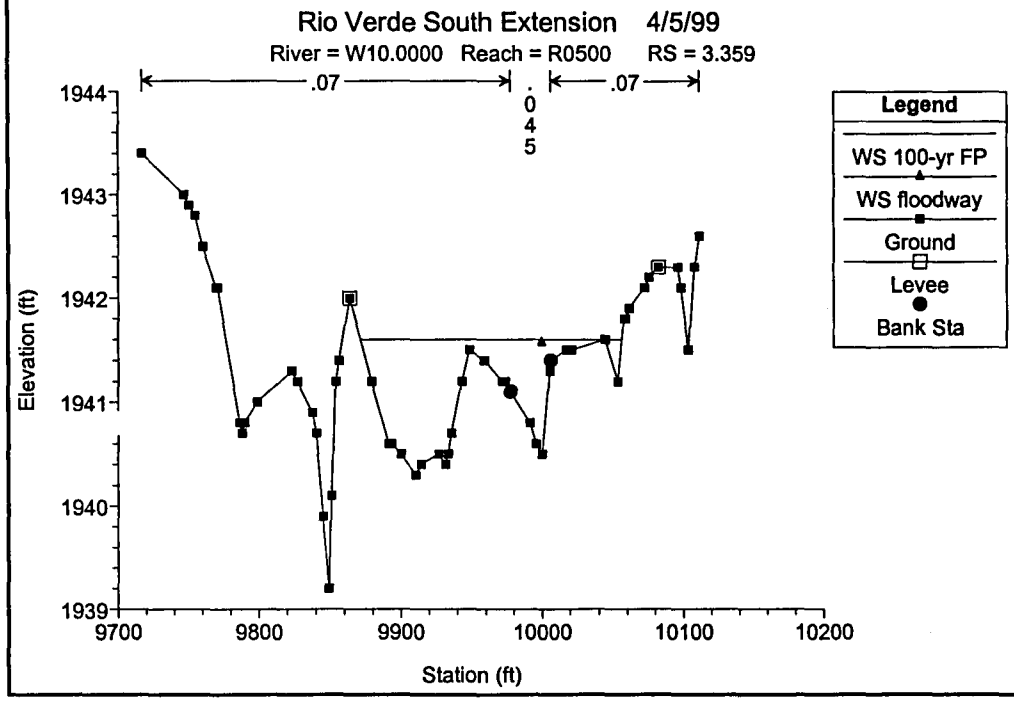

Rio Verde South Extension 4/5/99
River = W10.0000 Reach = R0300 RS = 3.580
.07
.045
.07
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Elevation (ft)
Station (ft)

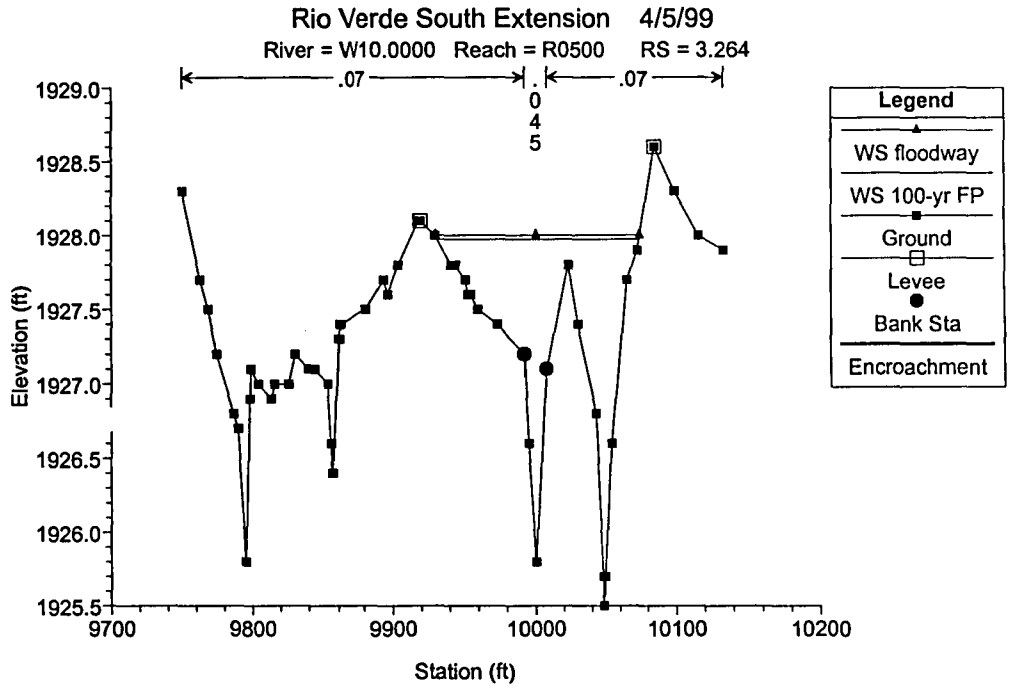

Rio Verde South Extension 4/5/99
River = W10.0000 Reach = R0400 Q = 913 cfs from C538 HEC-1 FCD 93-07 RS = 3.539
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

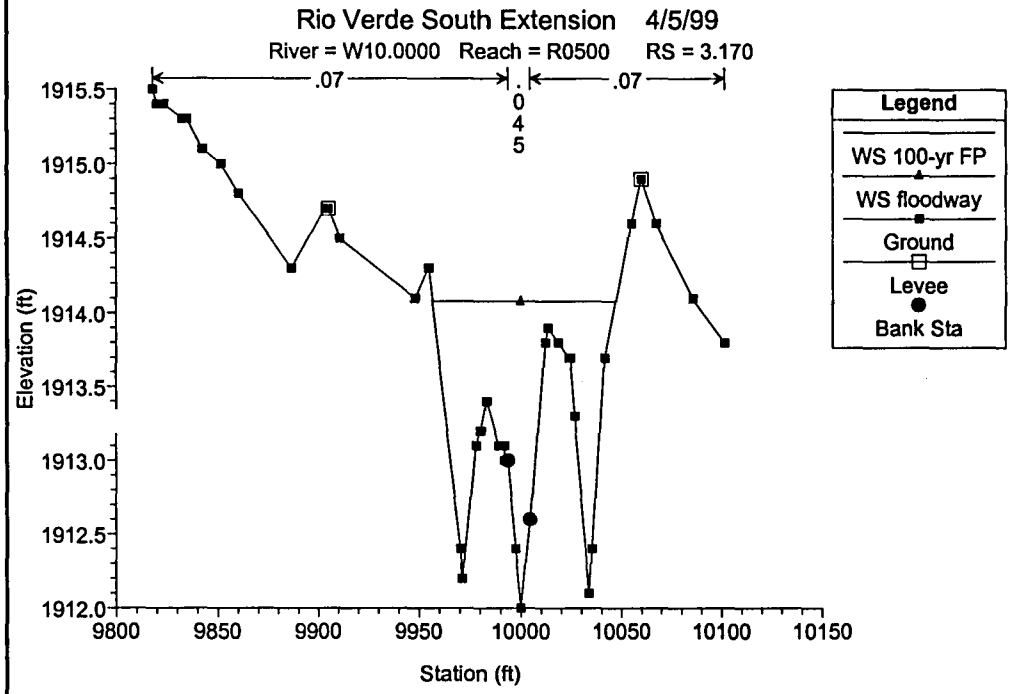

Rio Verde South Extension 4/5/99
River = W10.0000 Reach = R0400 RS = 3.491
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

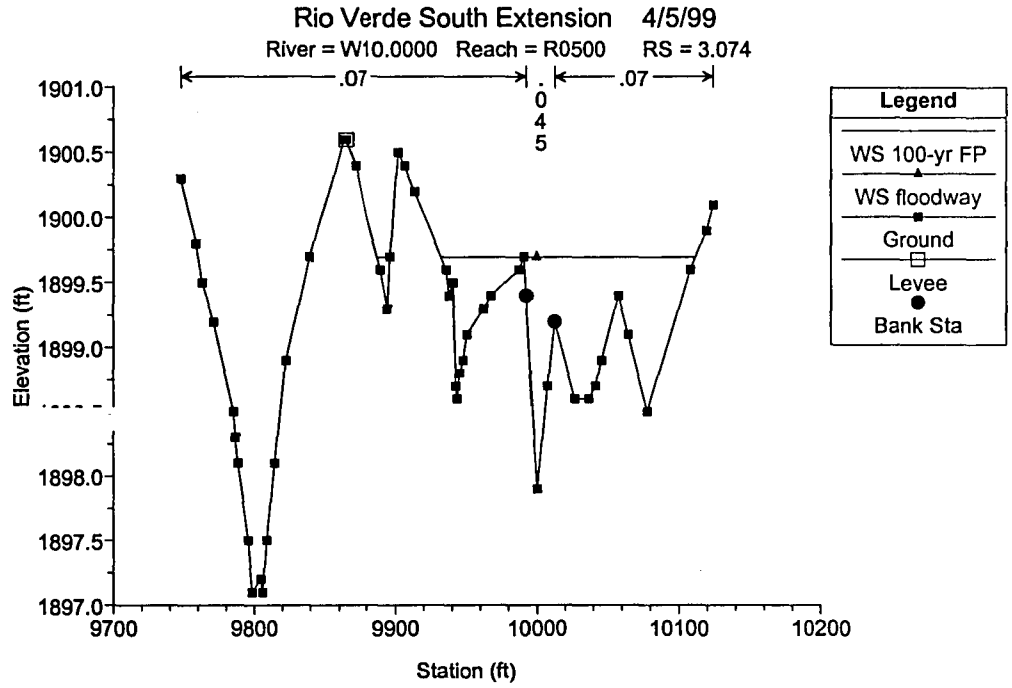

Rio Verde South Extension 4/5/99
River = W10.0000 Reach = R0400 XS upstream of split S10.0600 RS = 3.468
.07
.045
.07
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

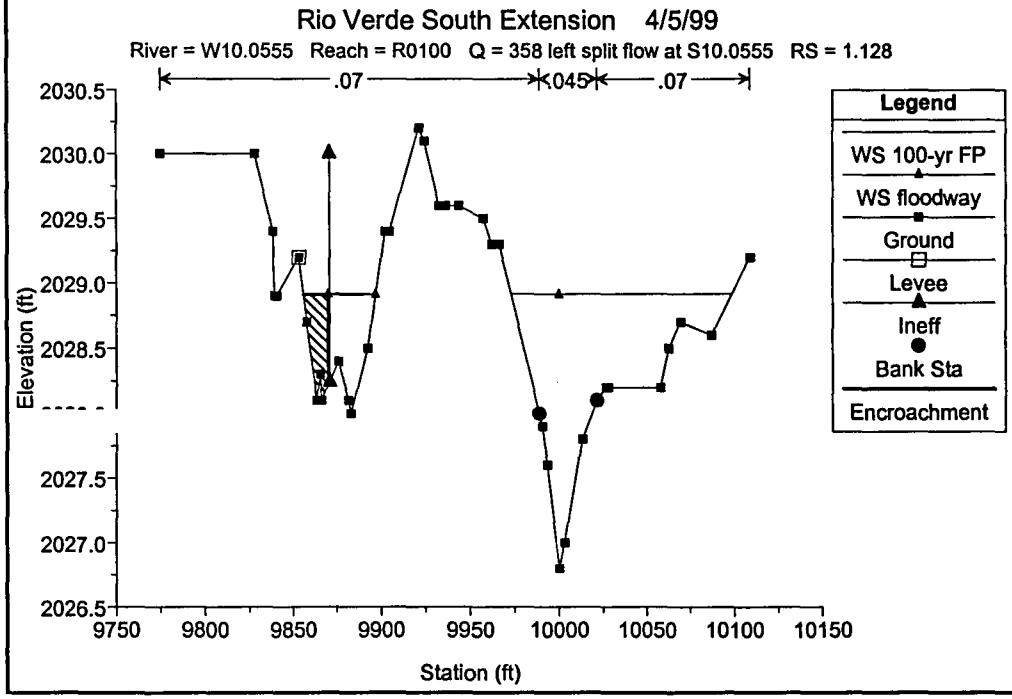

Rio Verde South Extension 4/5/99
River = W10.0000 Reach = R0500 Q = 343 cfs from right split at S10.0600 RS = 3.448
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

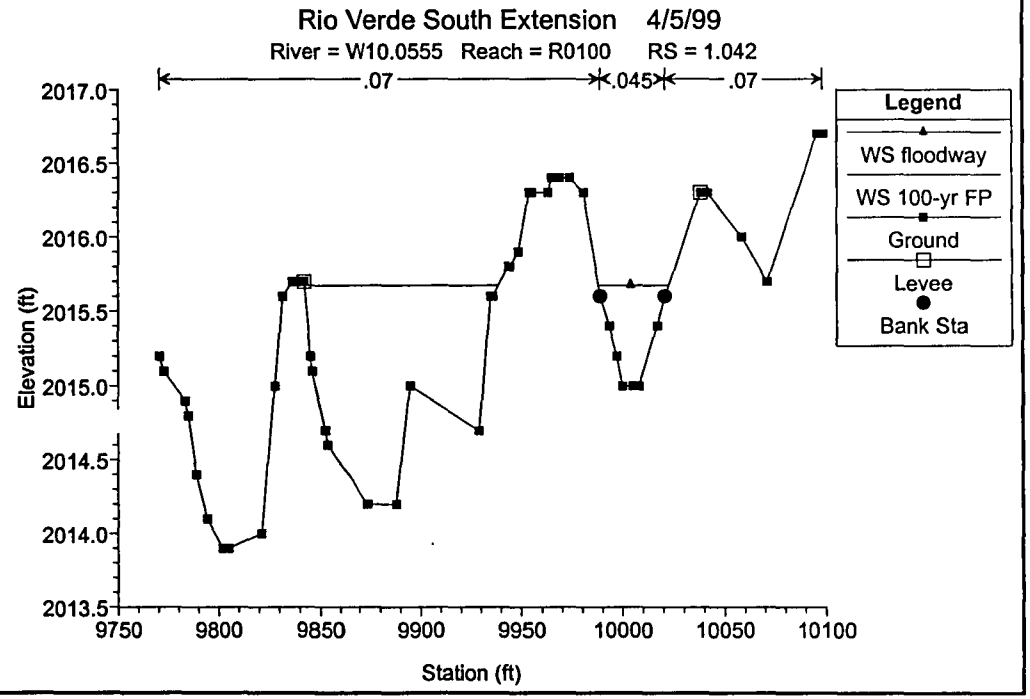

Rio Verde South Extension 4/5/99
River = W10.0000 Reach = R0500 RS = 3.359
.07
.045
.07
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

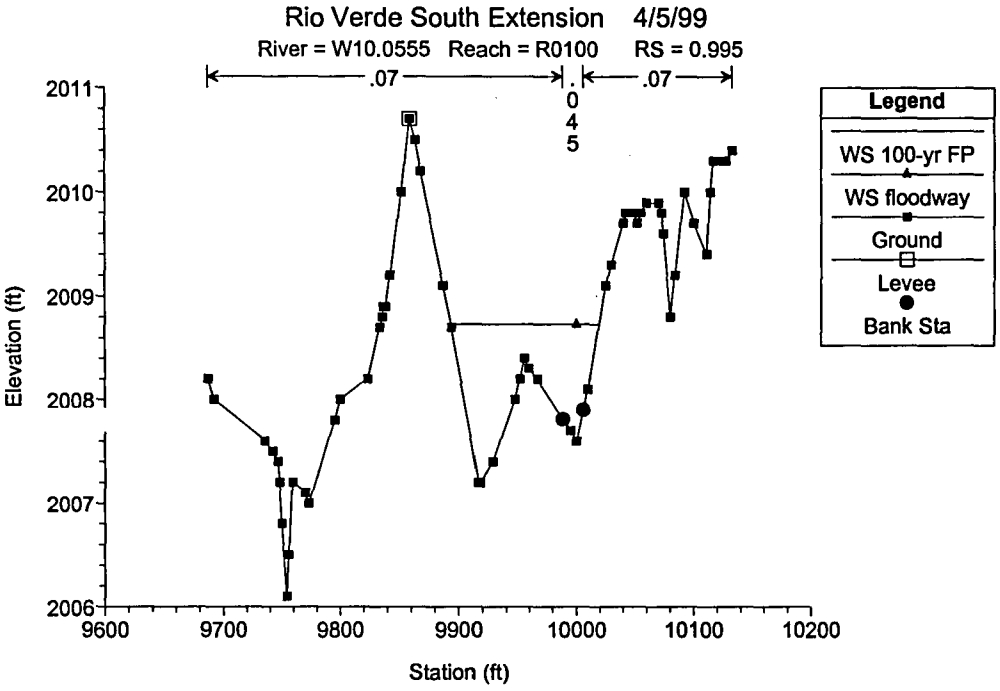

Rio Verde South Extension 4/5/99
River = W10.0000 Reach = R0500 RS = 3.264
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

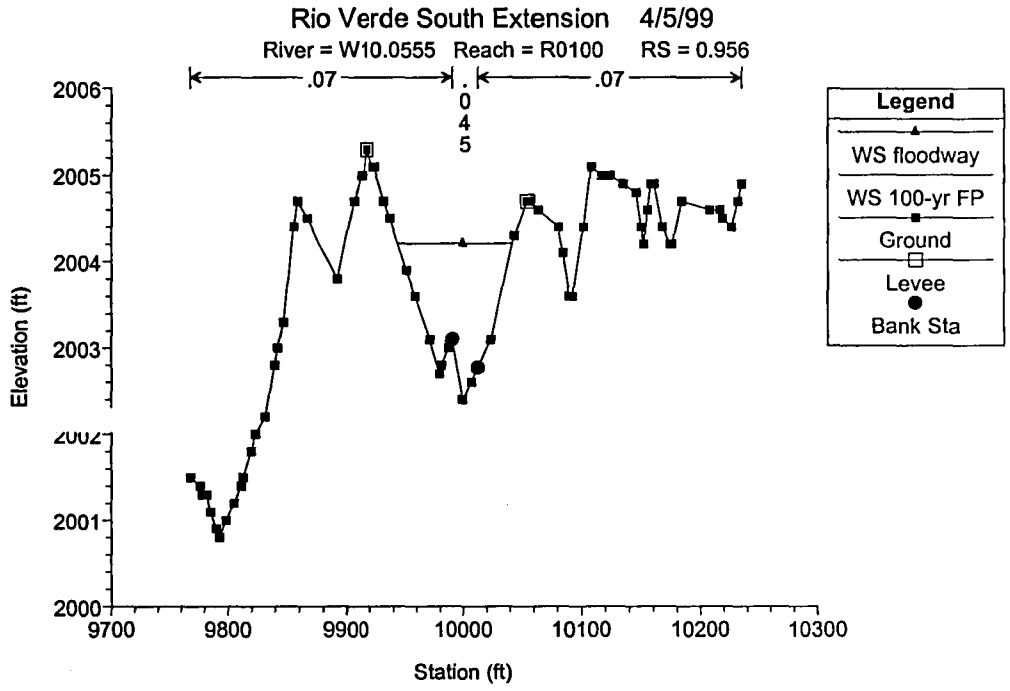

Rio Verde South Extension 4/5/99
River = W10.0000 Reach = R0500 RS = 3.170
.07
.045
.07
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

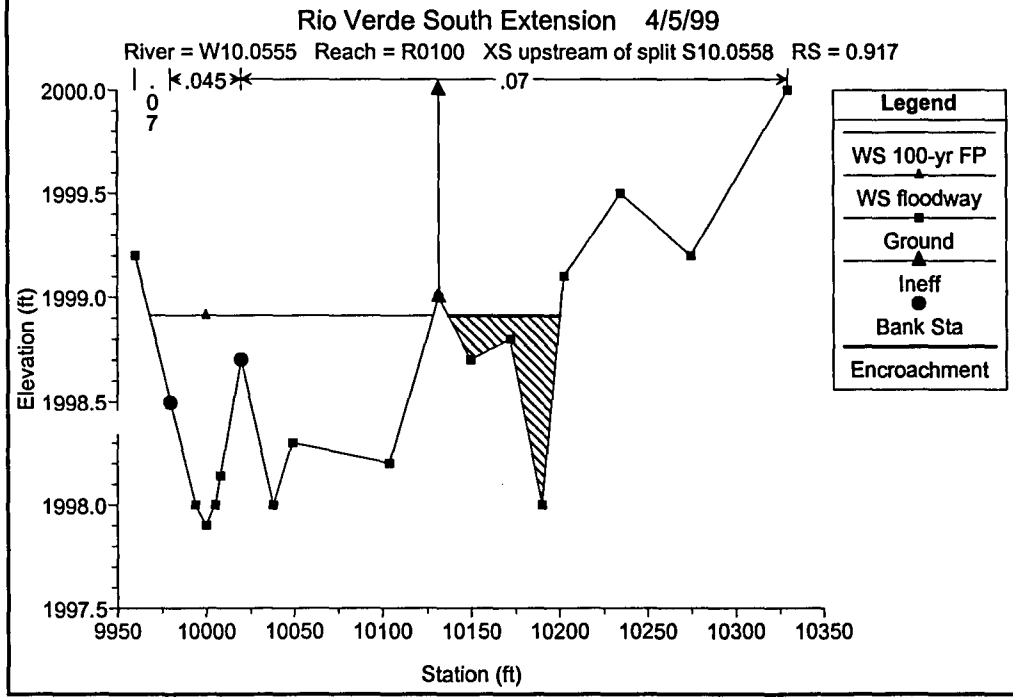

Rio Verde South Extension 4/5/99
River = W10.0000 Reach = R0500 RS = 3.074
.07
.045
.07
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

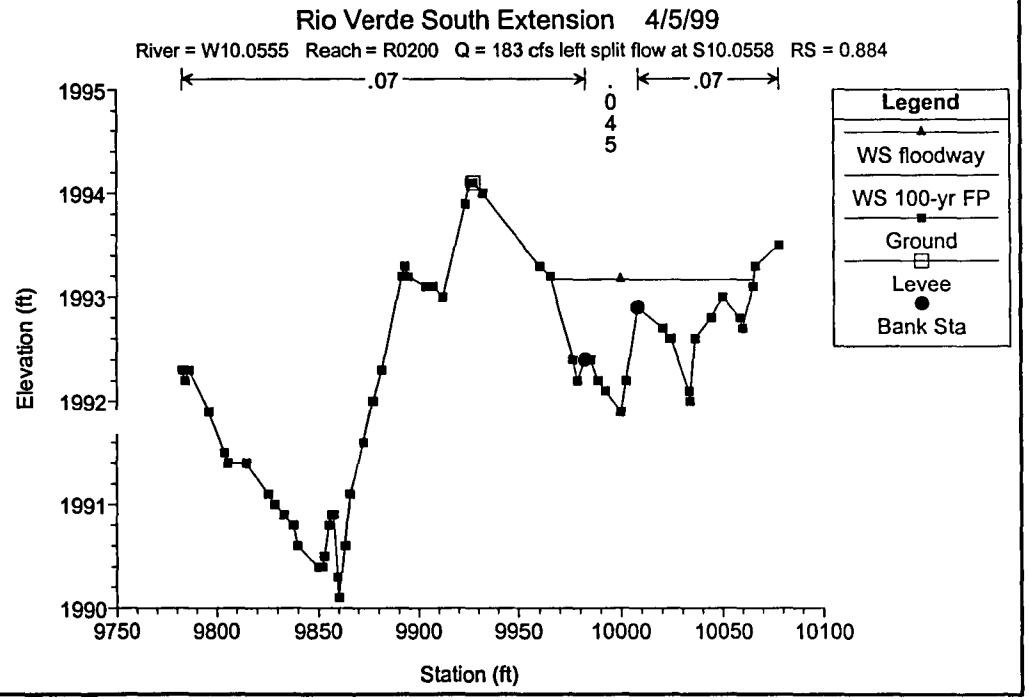

Rio Verde South Extension 4/5/99
River = W10.0555 Reach = R0100 Q = 358 left split flow at S10.0555 RS = 1.128
.07
.045
.07
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

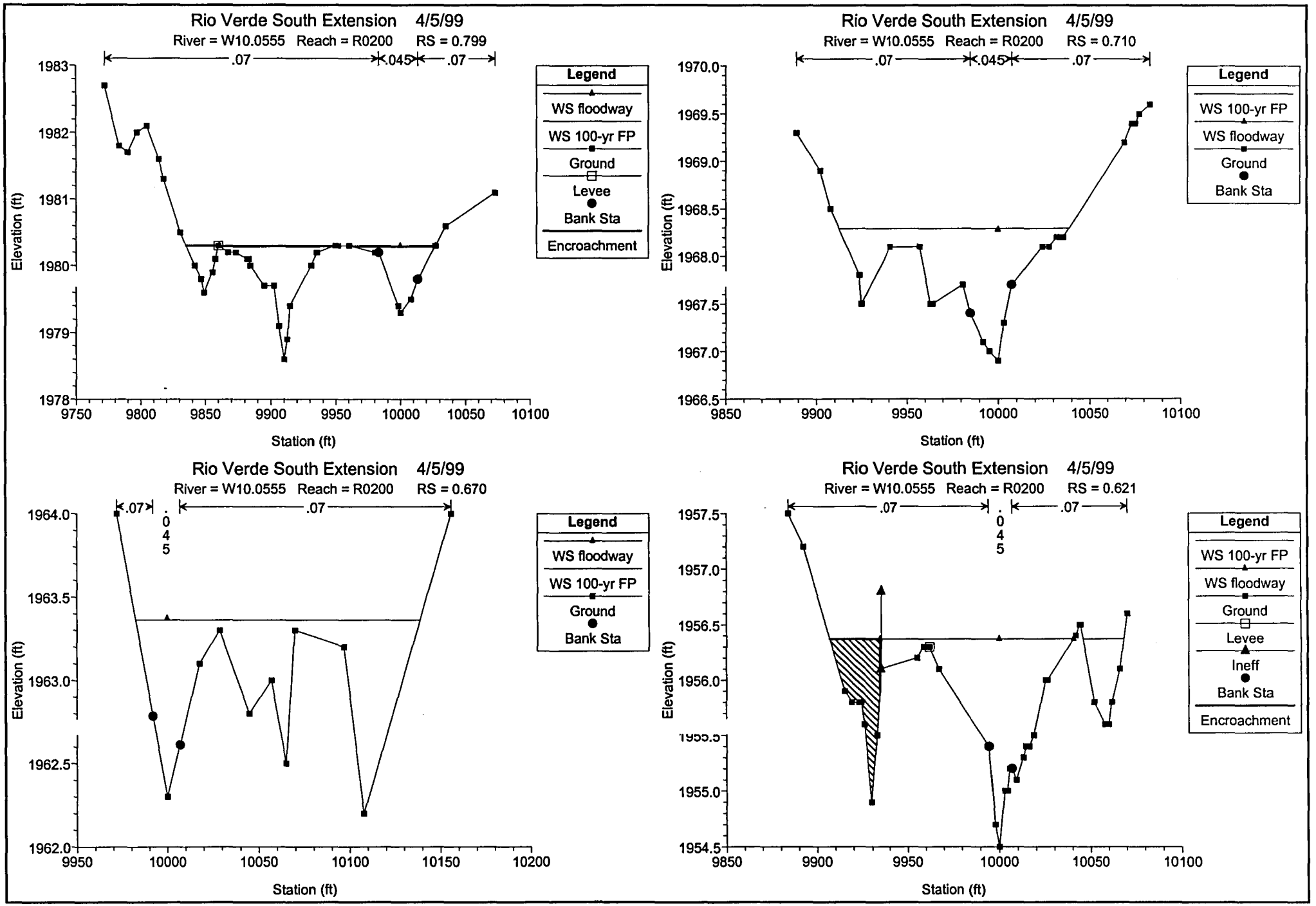

Rio Verde South Extension 4/5/99
River = W10.0555 Reach = R0100 RS = 1.042
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

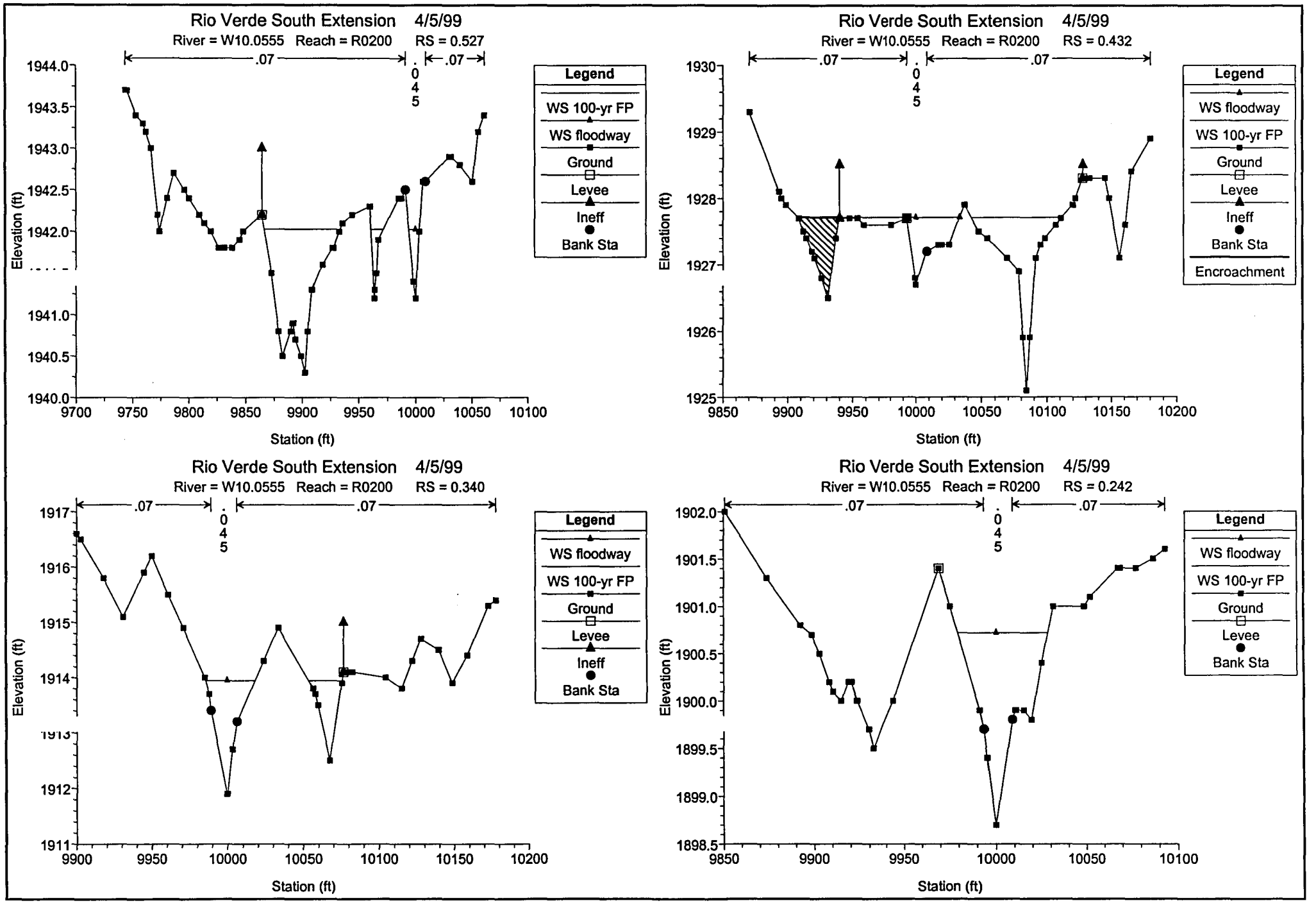

Rio Verde South Extension 4/5/99
River = W10.0555 Reach = R0100 RS = 0.995
.07
.045
.07
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

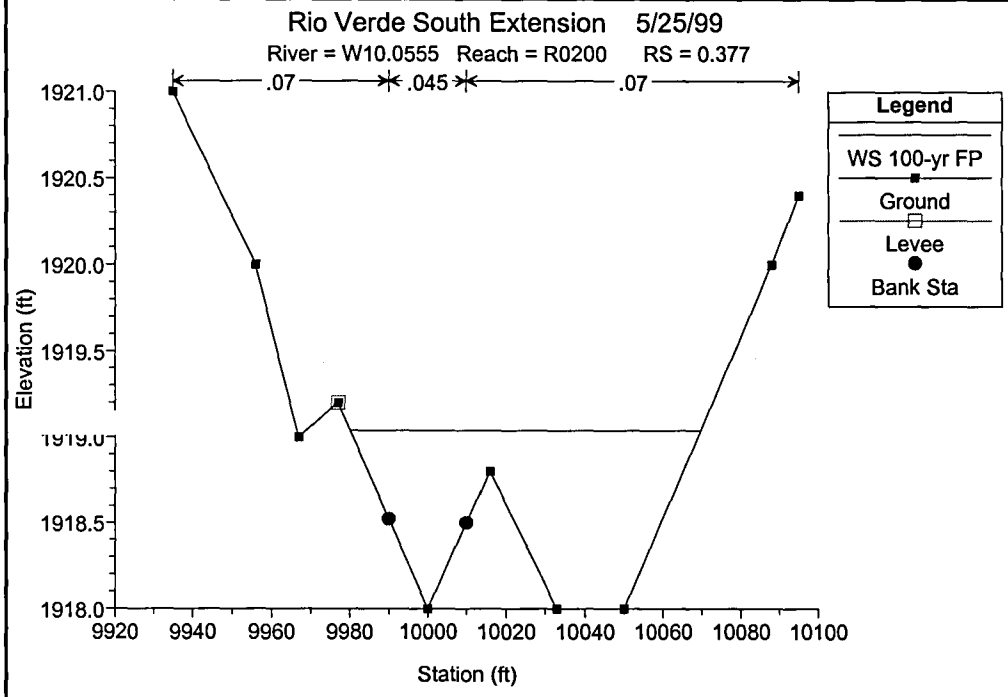

Rio Verde South Extension 4/5/99
River = W10.0555 Reach = R0100 RS = 0.956
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

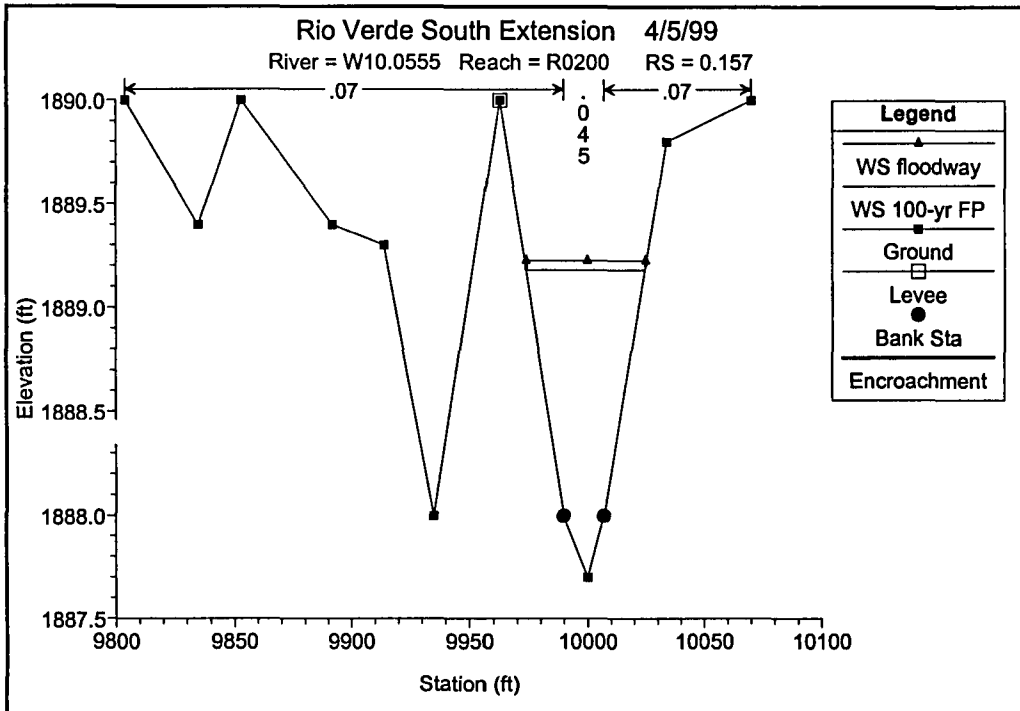

Rio Verde South Extension 4/5/99
River = W10.0555 Reach = R0100 XS upstream of split S10.0558 RS = 0.917
.07
.045
.07
Legend
WS 100-yr FP
WS floodway
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

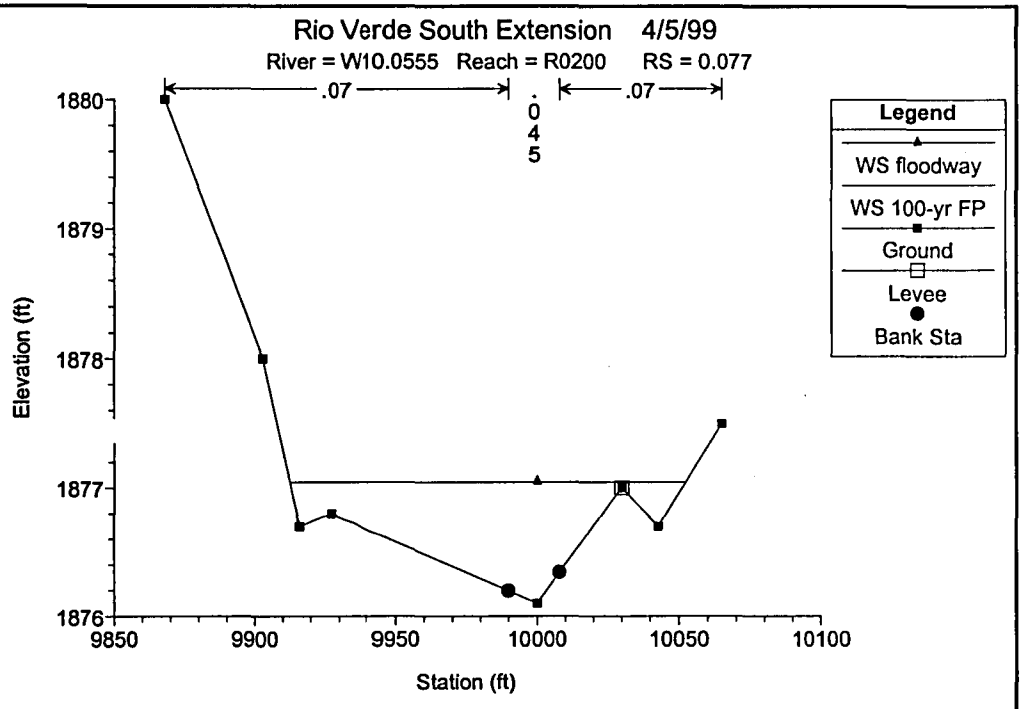

Rio Verde South Extension 4/5/99
River = W10.0555 Reach = R0200 Q = 183 cfs left split flow at S10.0558 RS = 0.884
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

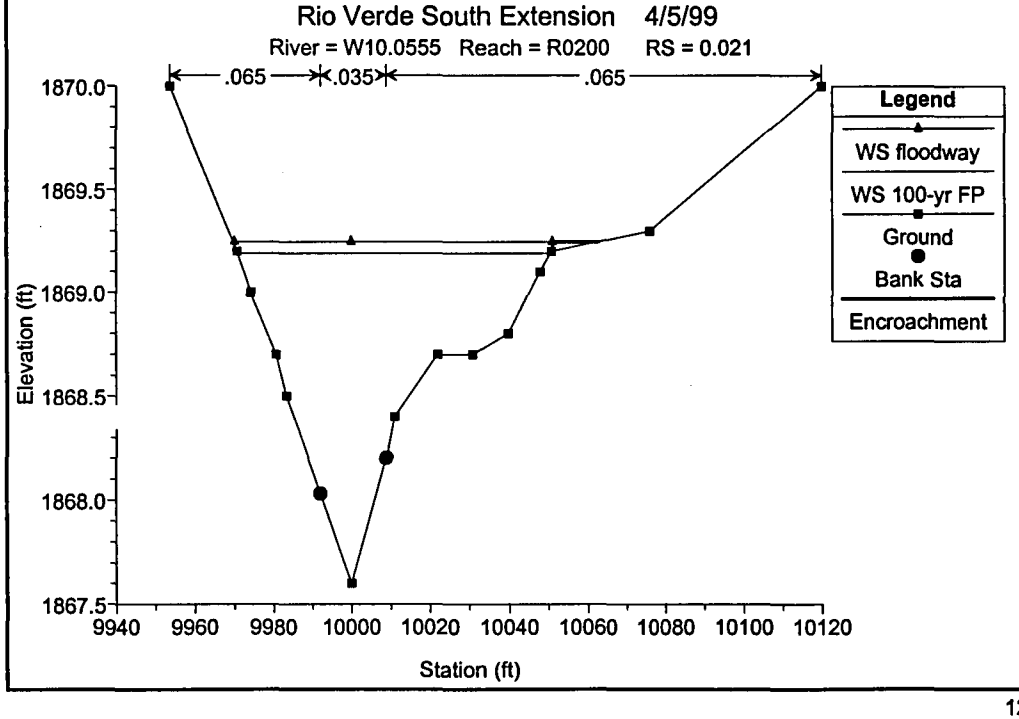

Rio Verde South Extension 4/5/99
River = W10.0555 Reach = R0200 RS = 0.799
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
Rio Verde South Extension 4/5/99
River = W10.0555 Reach = R0200 RS = 0.710
.07
.045
.07
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Elevation (ft)
Station (ft)
Rio Verde South Extension 4/5/99
River = W10.0555 Reach = R0200 RS = 0.670
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)
Rio Verde South Extension 4/5/99
River = W10.0555 Reach = R0200 RS = 0.621
.07
.045
.07
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

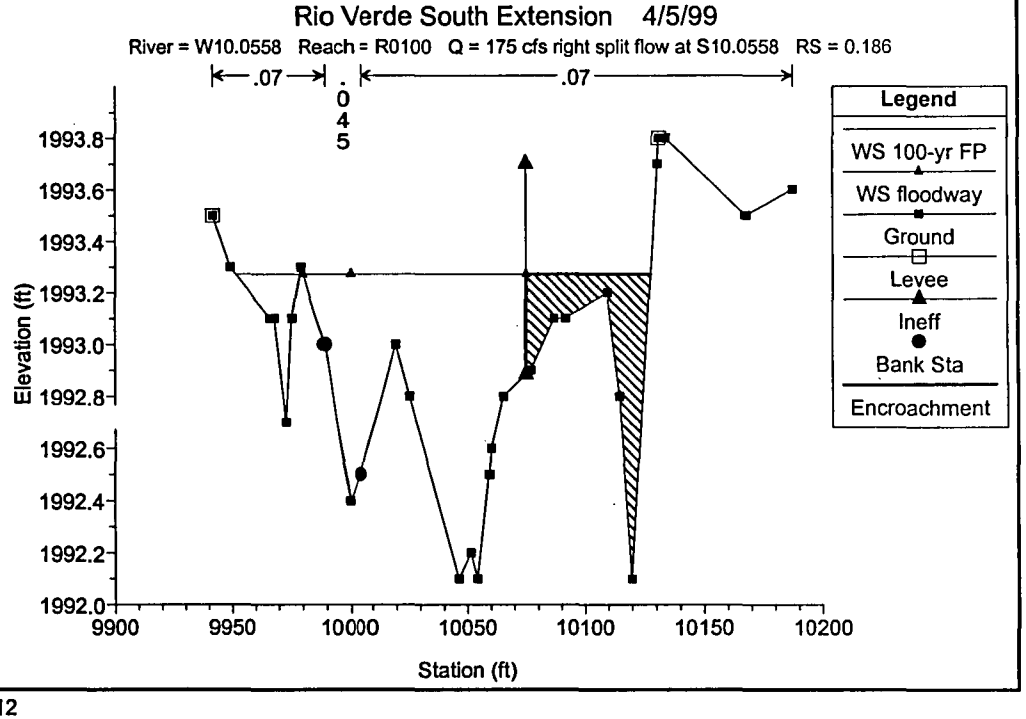

Rio Verde South Extension 4/5/99
River = W10.0555 Reach = R0200 RS = 0.527
.07
.045
.07
Elevation (ft)
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Rio Verde South Extension 4/5/99
River = W10.0555 Reach = R0200 RS = 0.432
.07
.045
.07
Elevation (ft)
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Encroachment
Rio Verde South Extension 4/5/99
River = W10.0555 Reach = R0200 RS = 0.340
.07
.045
.07
Elevation (ft)
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Rio Verde South Extension 4/5/99
River = W10.0555 Reach = R0200 RS = 0.242
.07
.045
.07
Elevation (ft)
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta

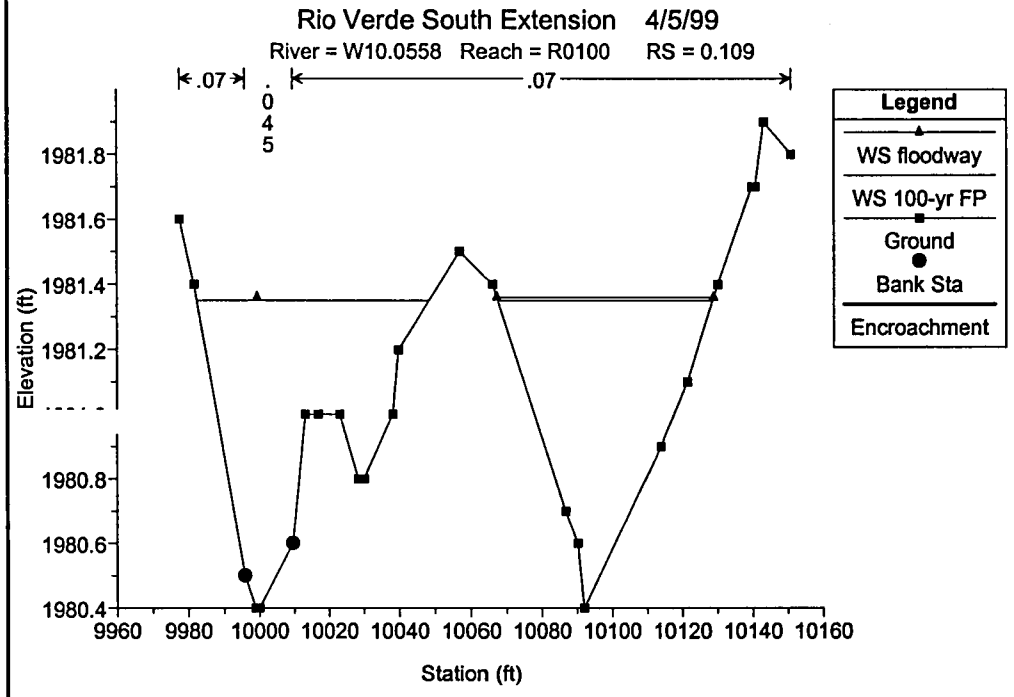

Rio Verde South Extension 5/25/99
River = W10.0555 Reach = R0200 RS = 0.377
.07
.045
.07
Legend
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
1921.0
1920.5
1920.0
1919.5
1919.0
1918.5
1918.0
9920
9940
9960
9980
10000
10020
10040
10060
10080
10100
Station (ft)

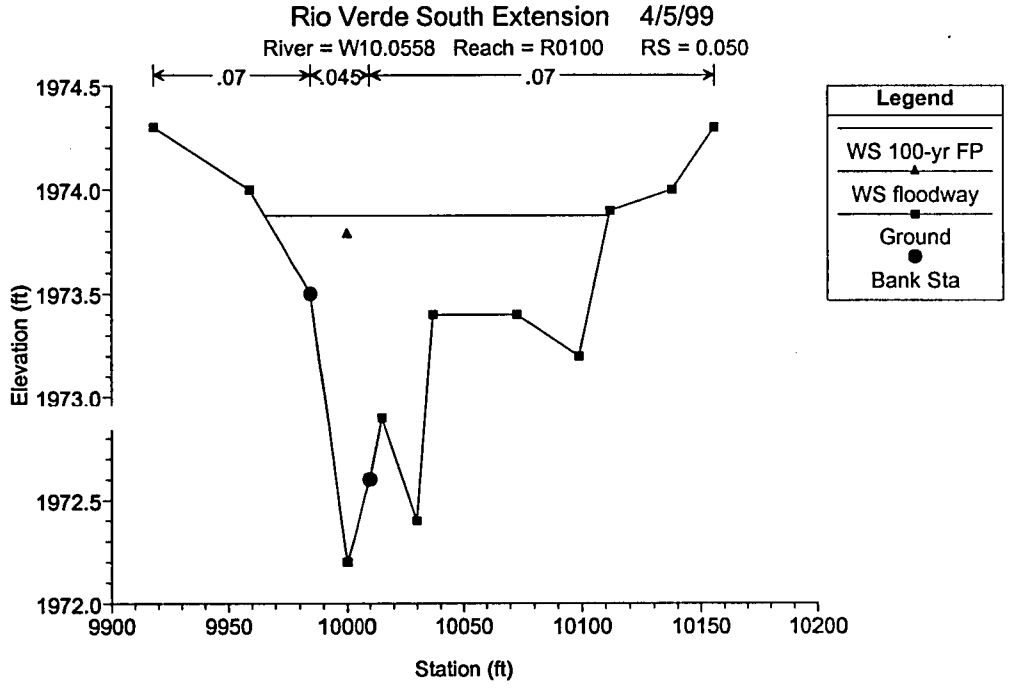

Rio Verde South Extension 4/5/99
River = W10.0555 Reach = R0200 RS = 0.157
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

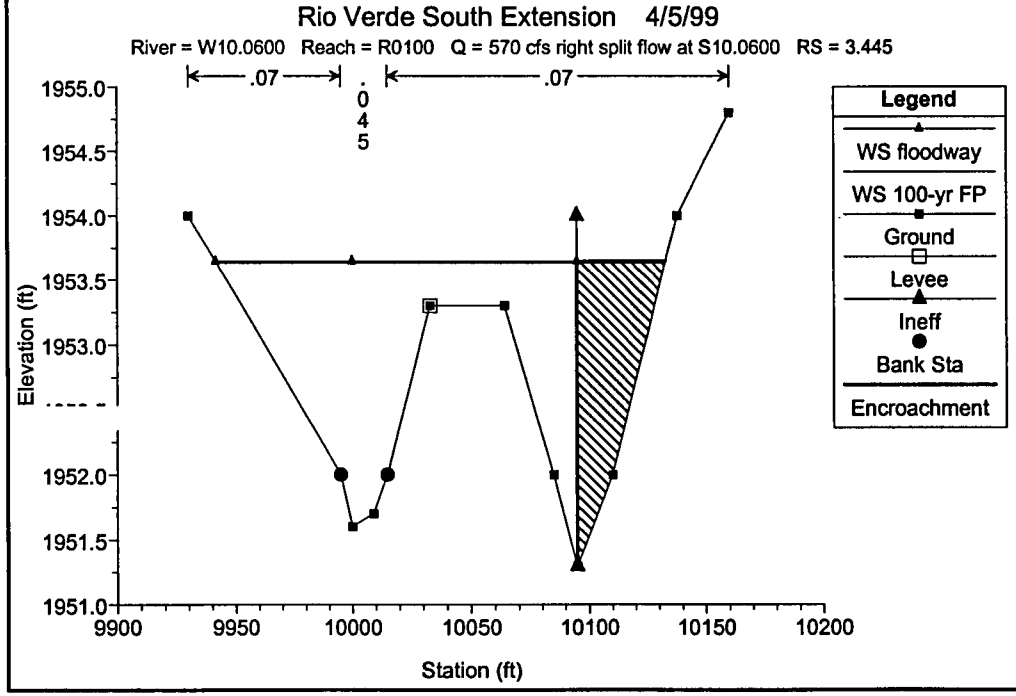

Rio Verde South Extension 4/5/99
River = W10.0555 Reach = R0200 RS = 0.077
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

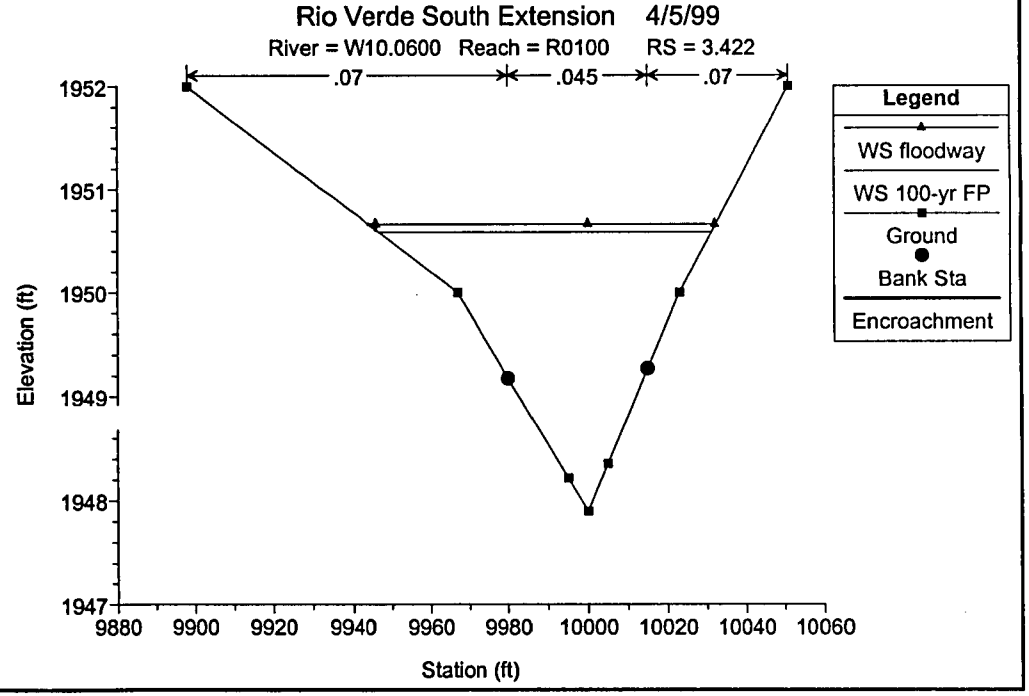

Rio Verde South Extension 4/5/99
River = W10.0555 Reach = R0200 RS = 0.021
.065
.035
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

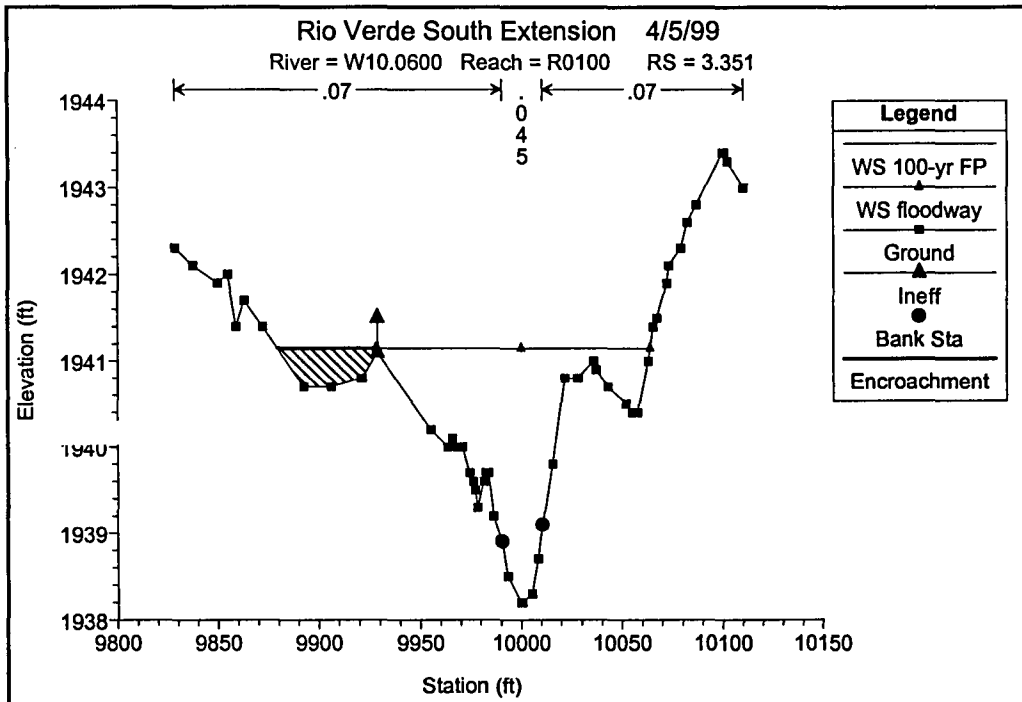

Rio Verde South Extension 4/5/99
River = W10.0558 Reach = R0100 Q = 175 cfs right split flow at S10.0558 RS = 0.186
.07
.045
.07
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

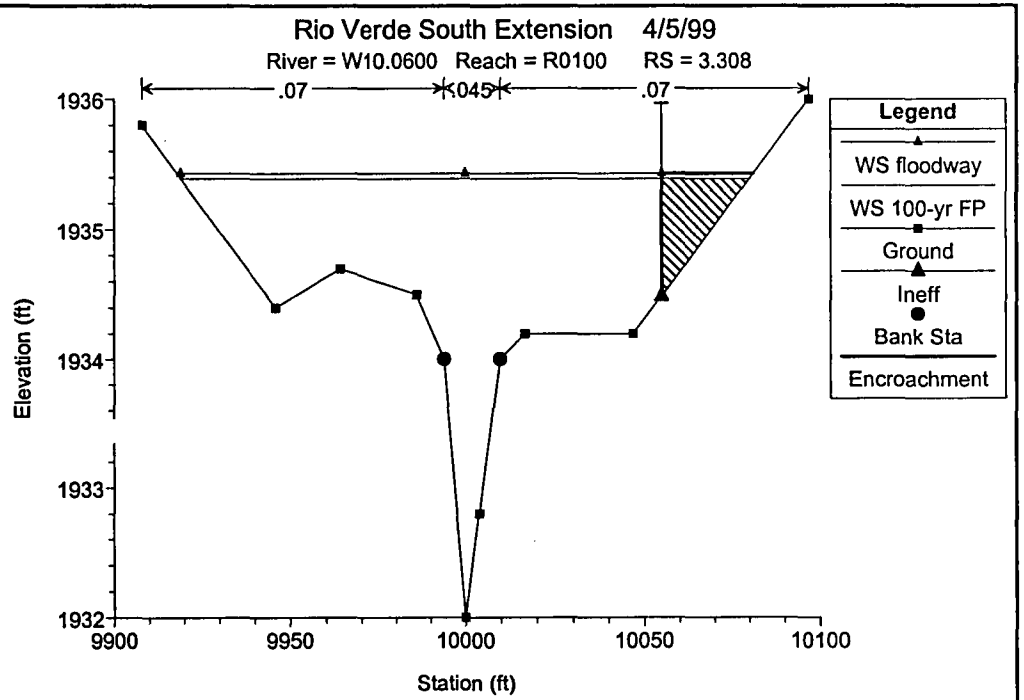

Rio Verde South Extension 4/5/99
River = W10.0558 Reach = R0100 RS = 0.109
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

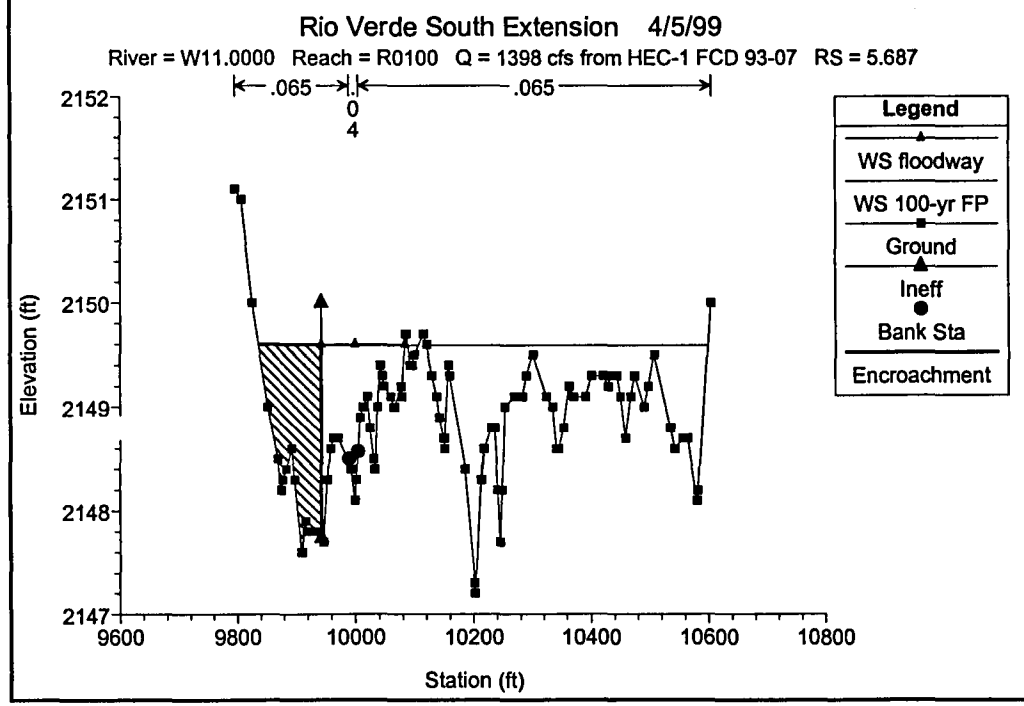

Rio Verde South Extension 4/5/99
River = W10.0558 Reach = R0100 RS = 0.050
.07
.045
.07
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Elevation (ft)
Station (ft)

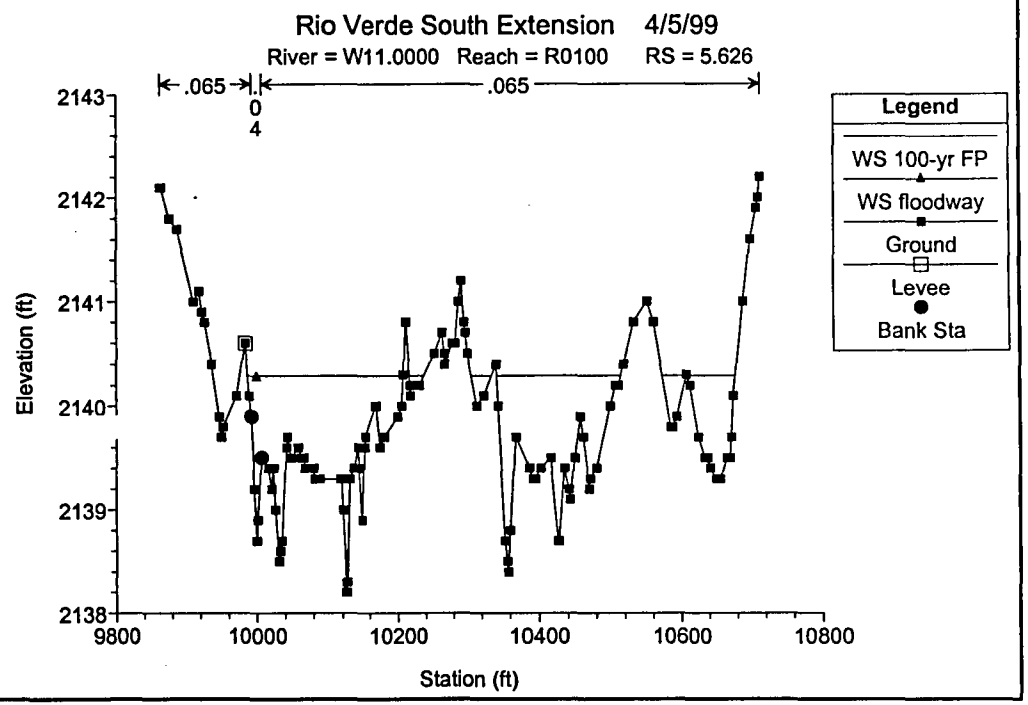

Rio Verde South Extension 4/5/99
River = W10.0600 Reach = R0100 Q = 570 cfs right split flow at S10.0600 RS = 3.445
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

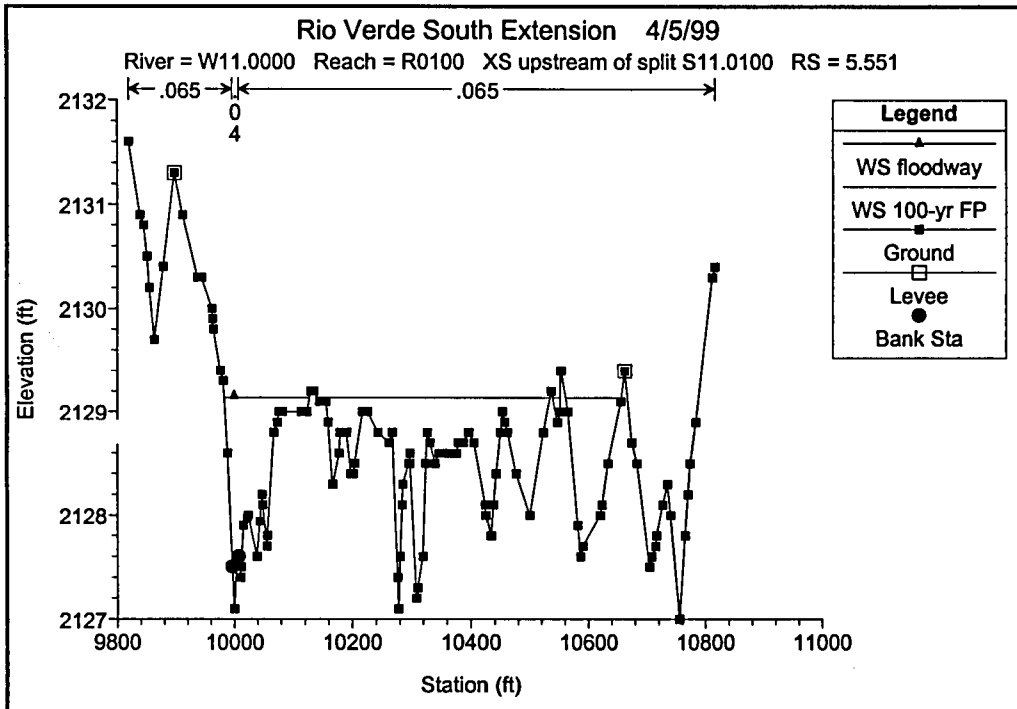

Rio Verde South Extension 4/5/99
River = W10.0600 Reach = R0100 RS = 3.422
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

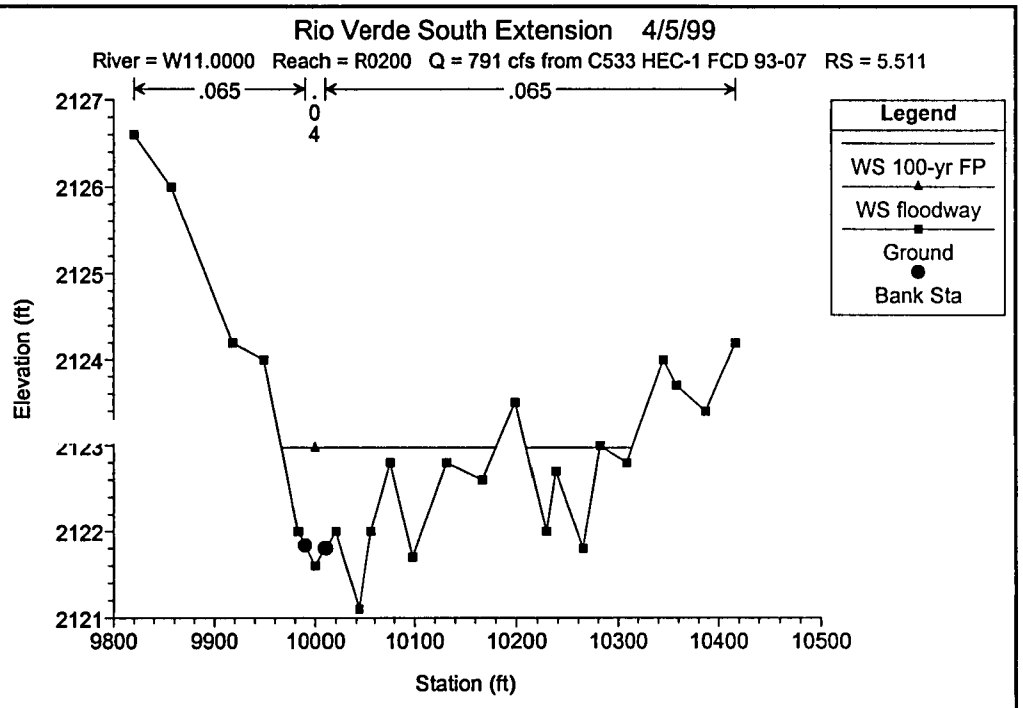

Rio Verde South Extension 4/5/99
River = W10.0600 Reach = R0100 RS = 3.351
.07
.045
.07
Legend
WS 100-yr FP
WS floodway
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

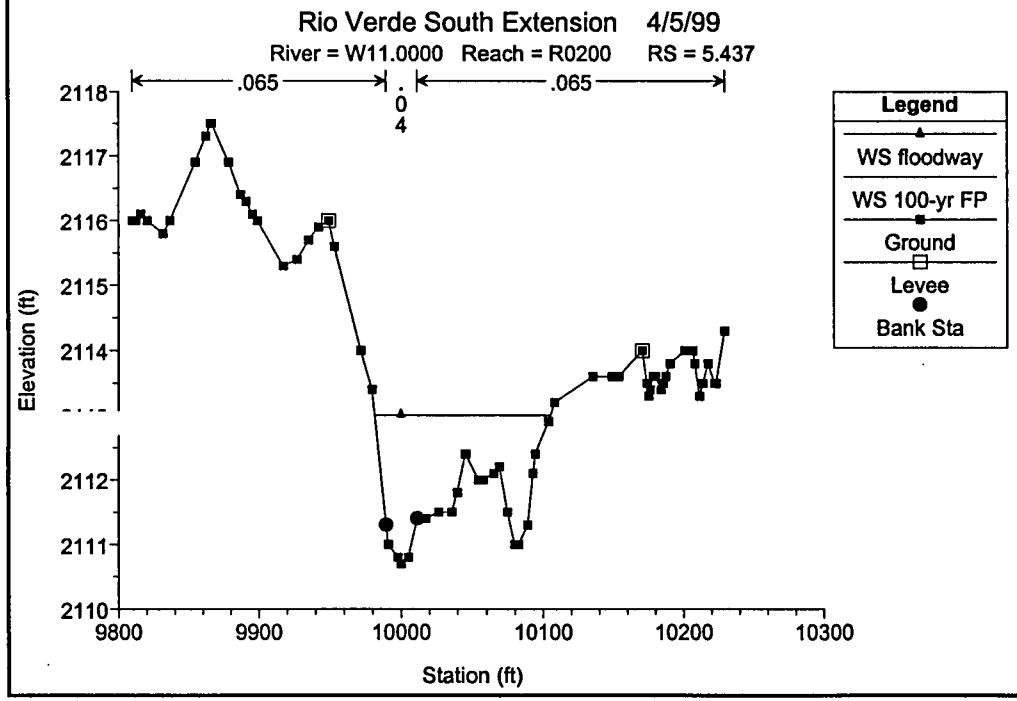

Rio Verde South Extension 4/5/99
River = W10.0600 Reach = R0100 RS = 3.308
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

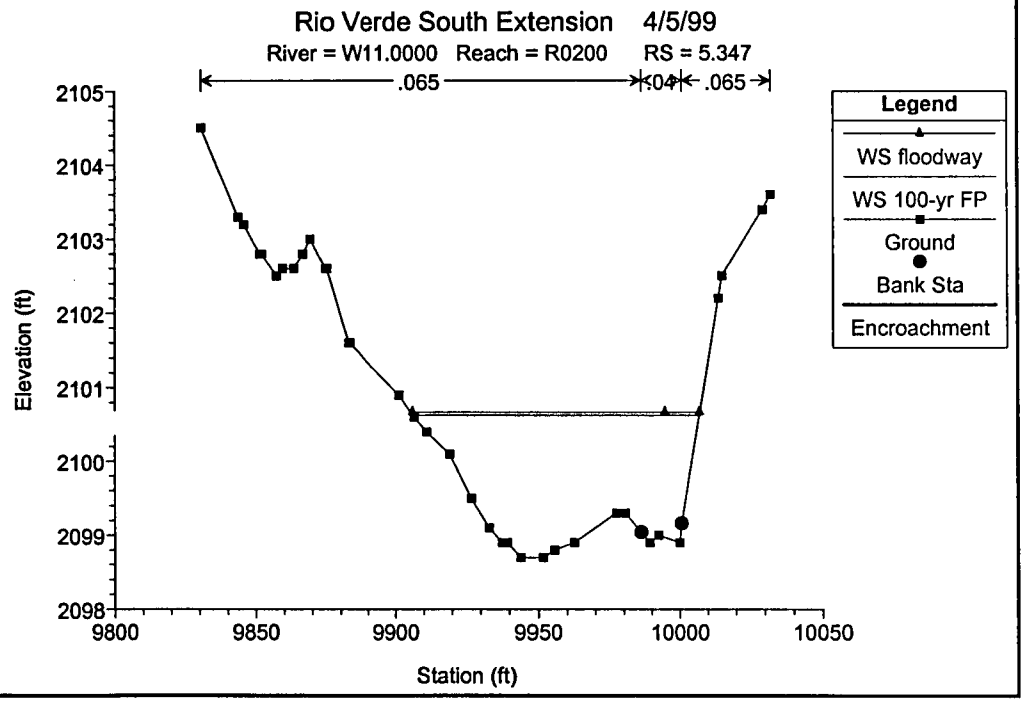

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0100 Q = 1398 cfs from HEC-1 FCD 93-07 RS = 5.687
.065
.065
Legend
WS floodway
WS 100-yr FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

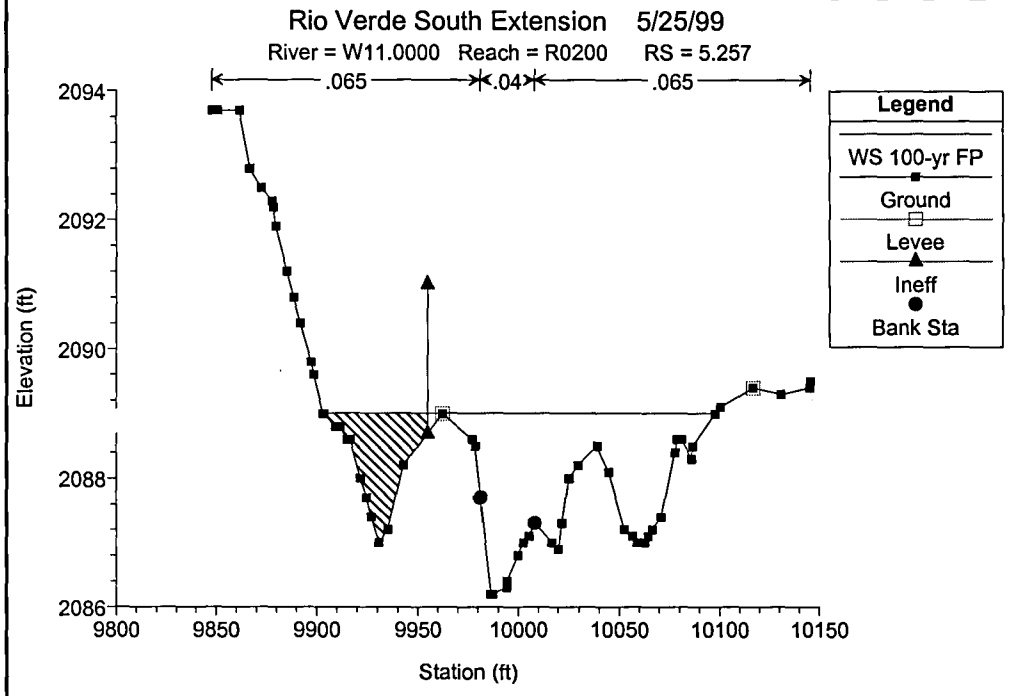

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0100 RS = 5.626
.065
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

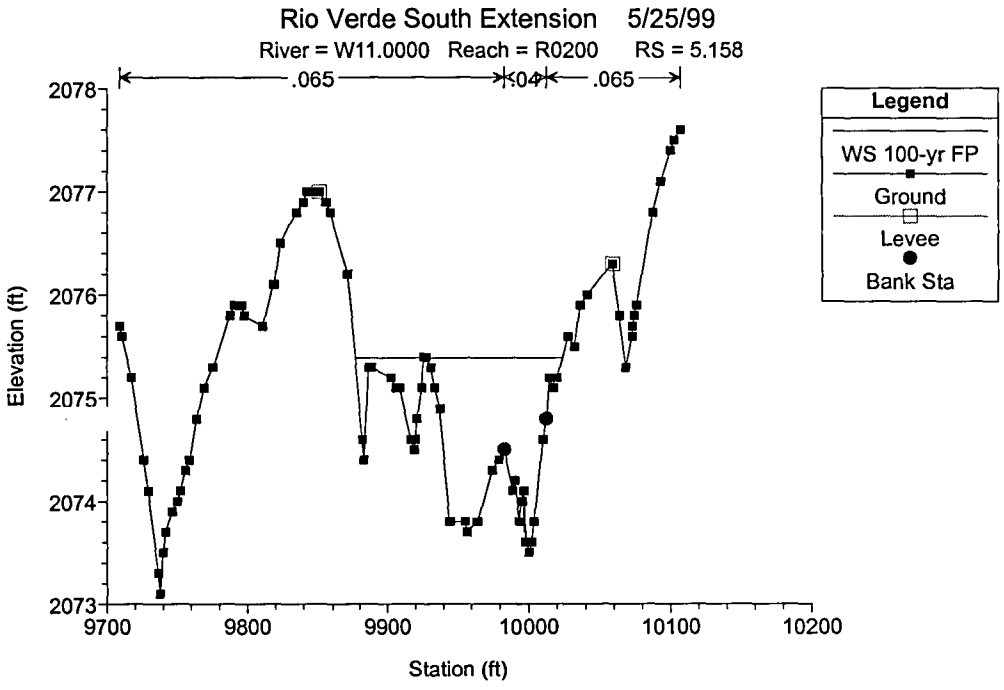

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0100 XS upstream of split S11.0100 RS = 5.551
.065
.065
0
4
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

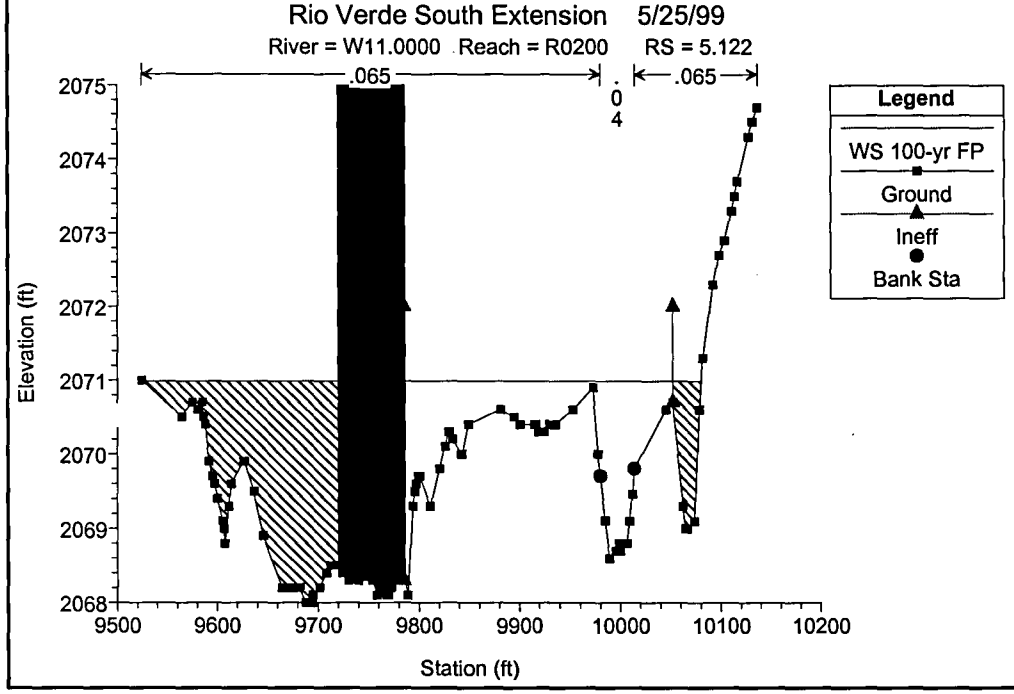

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0200 Q = 791 cfs from C533 HEC-1 FCD 93-07 RS = 5.511
.065
.065
0
4
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Elevation (ft)
Station (ft)

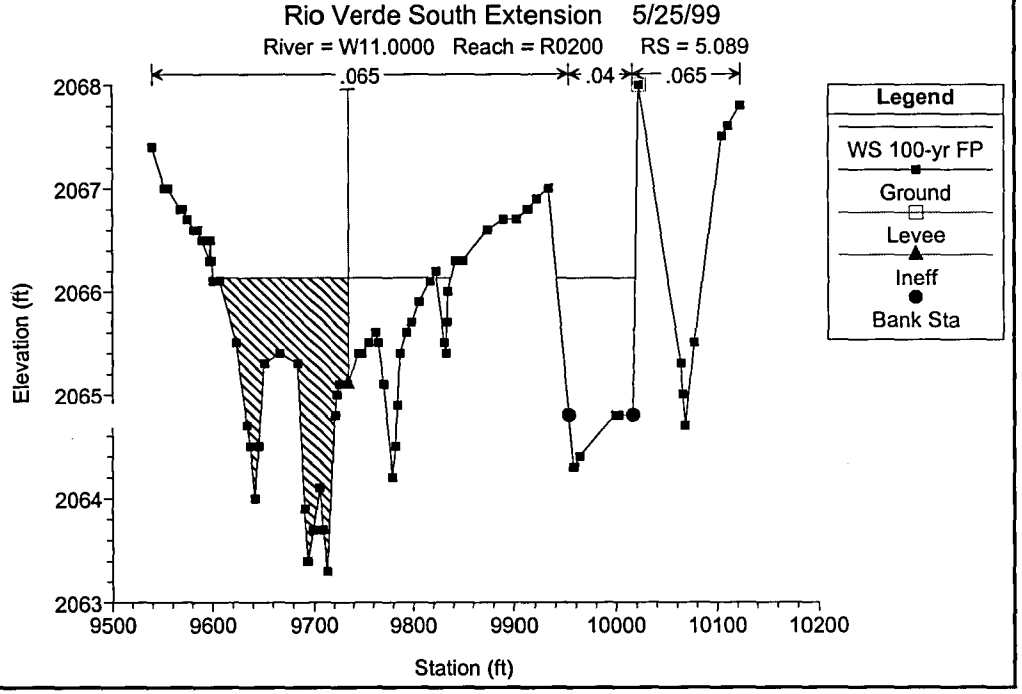

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0200 RS = 5.437
.065
.065
0
4
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

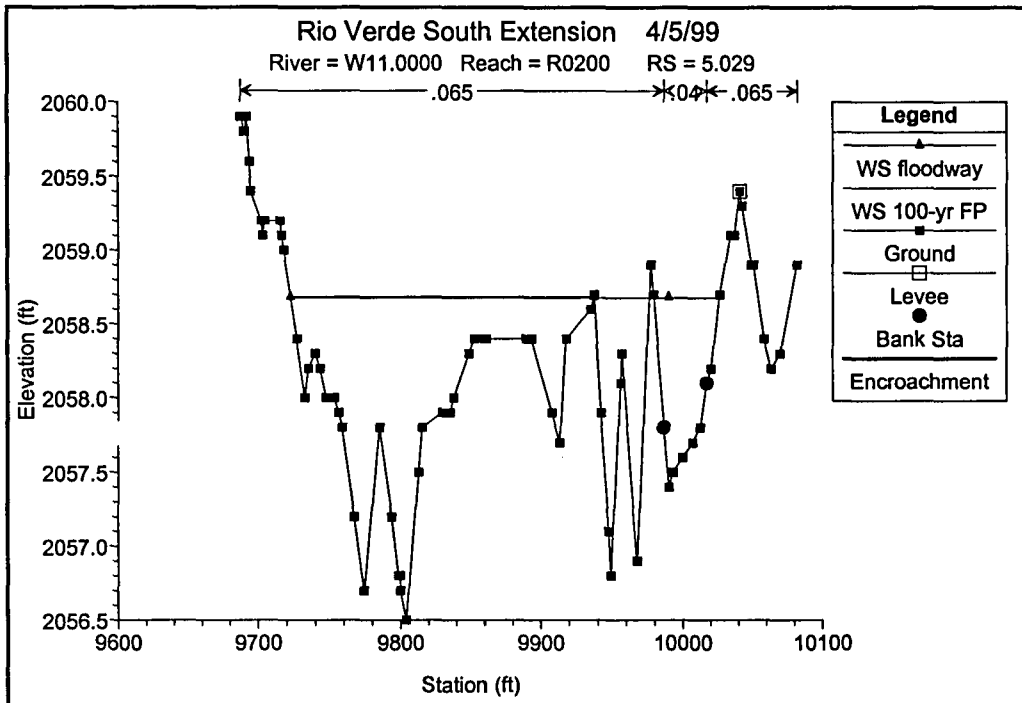

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0200 RS = 5.347
.065
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

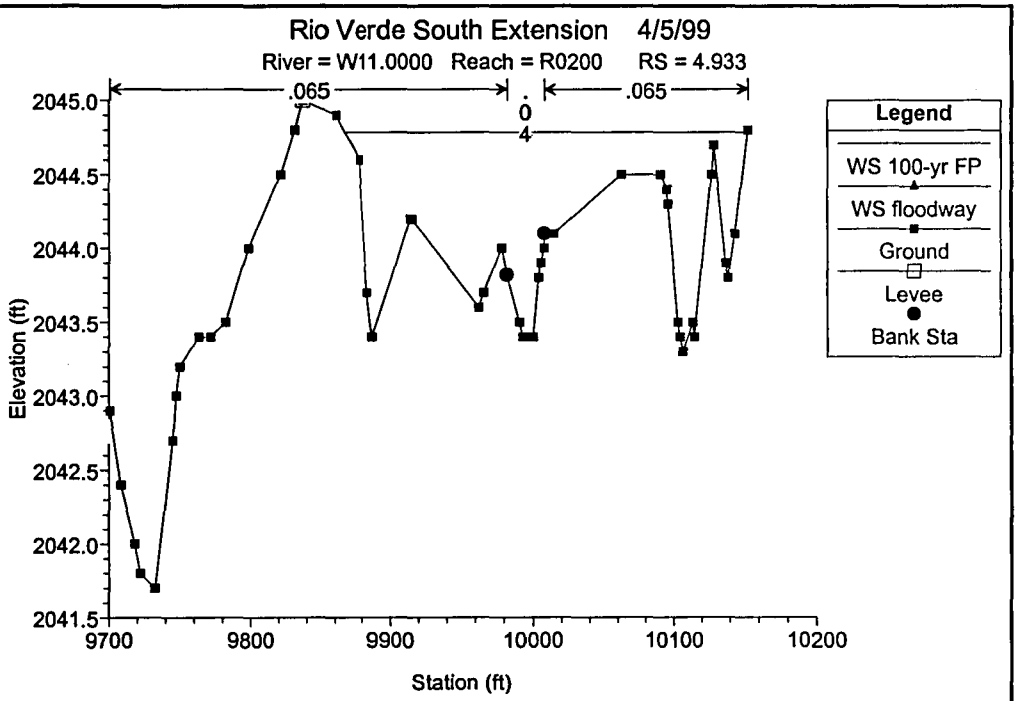

Rio Verde South Extension 5/25/99
River = W11.0000 Reach = R0200 RS = 5.257
.065
.04
.065
Legend
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

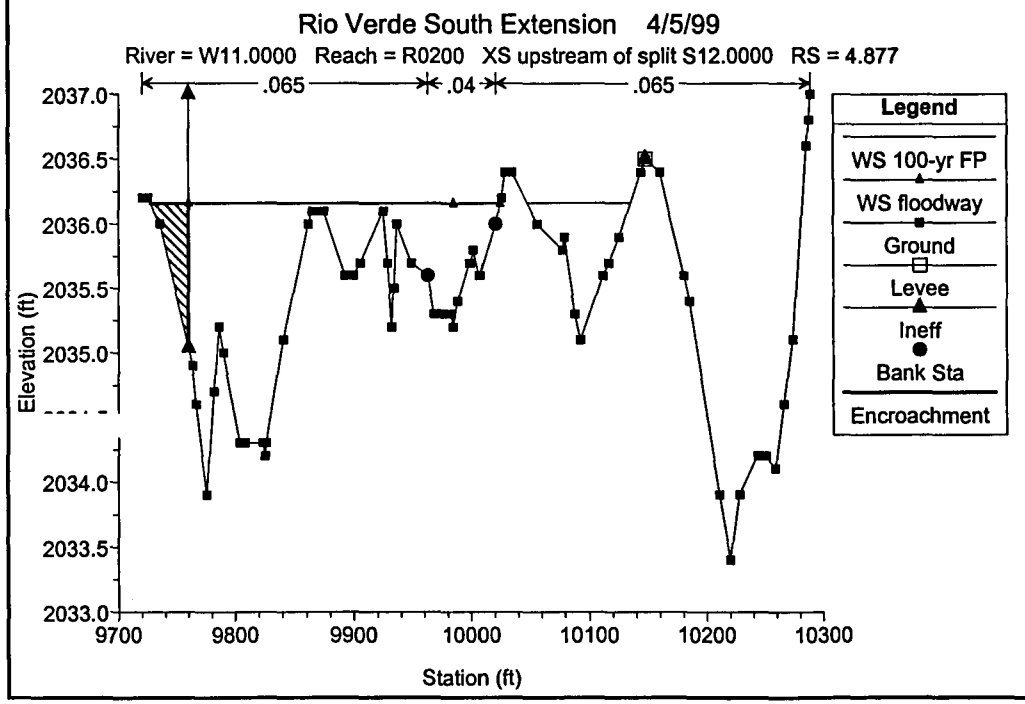

Rio Verde South Extension 5/25/99
River = W11.0000 Reach = R0200 RS = 5.158
.065
.04
.065
Legend
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

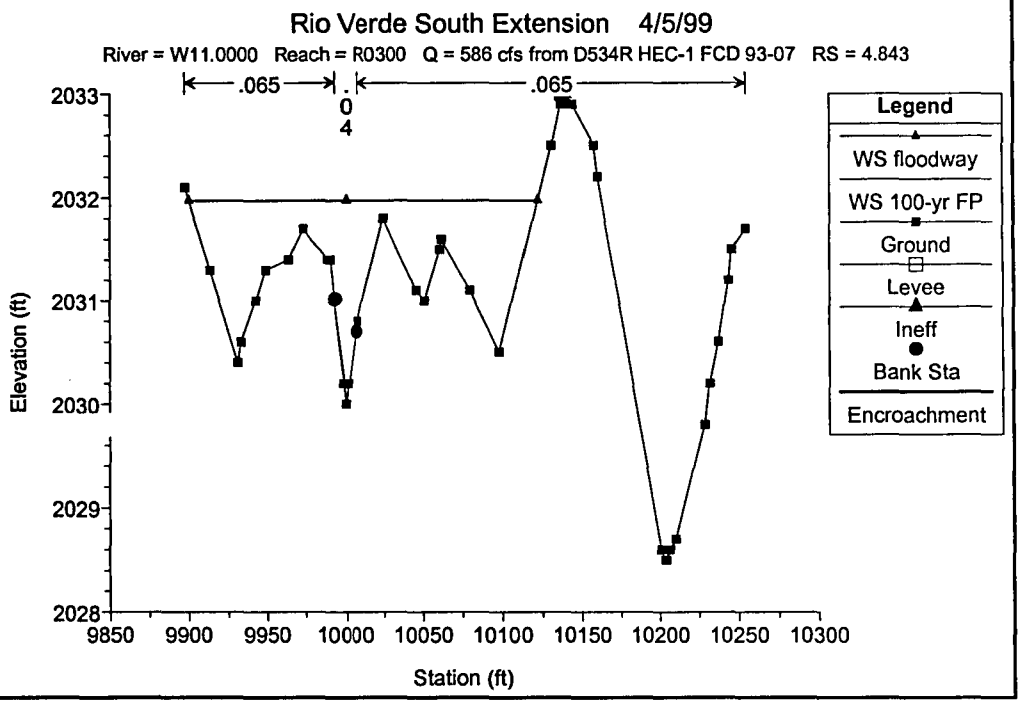

Rio Verde South Extension 5/25/99
River = W11.0000 Reach = R0200 RS = 5.122
.065
.04
.065
Legend
WS 100-yr FP
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

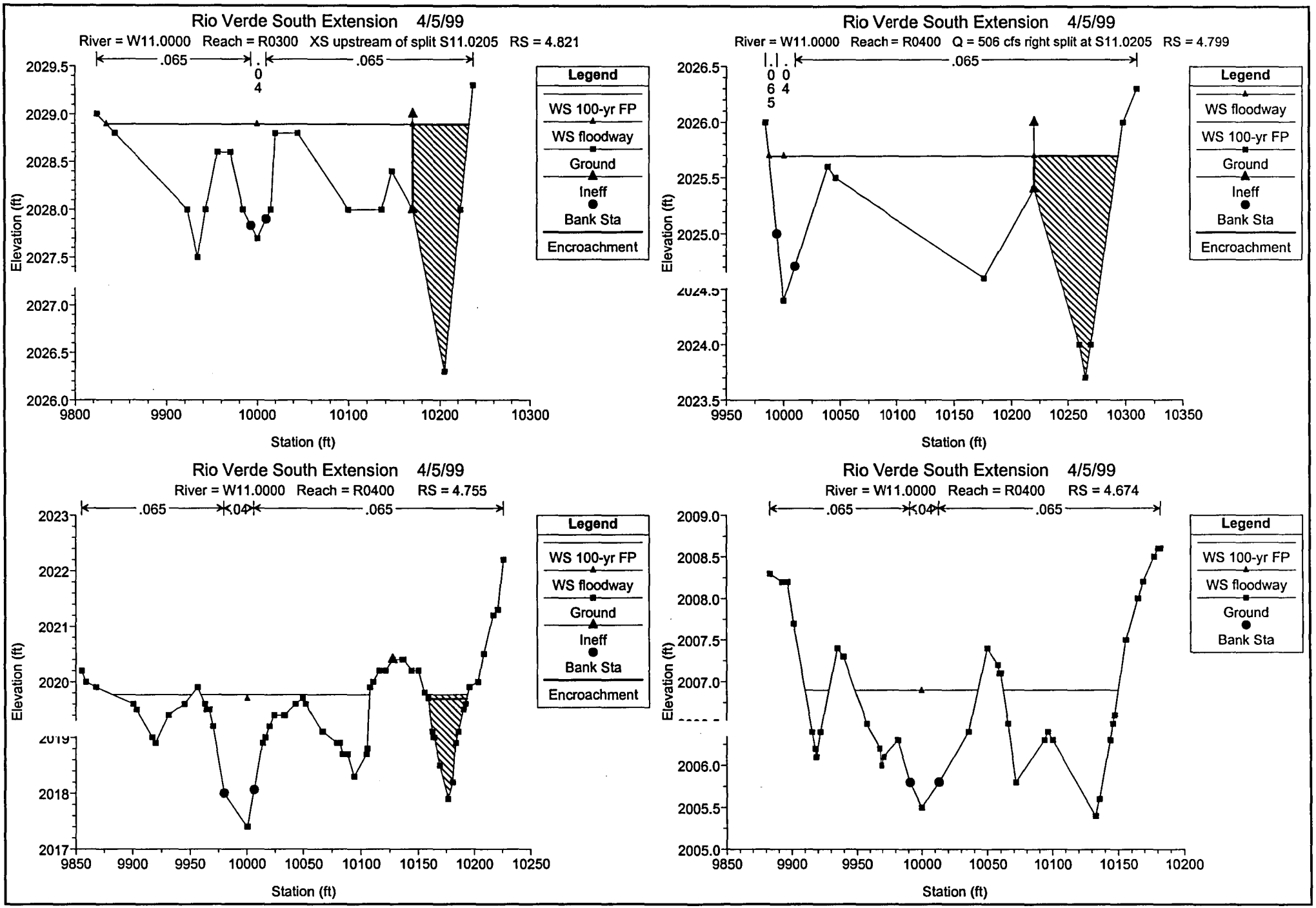

Rio Verde South Extension 5/25/99
River = W11.0000 Reach = R0200 RS = 5.089
.065
.04
.065
Legend
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

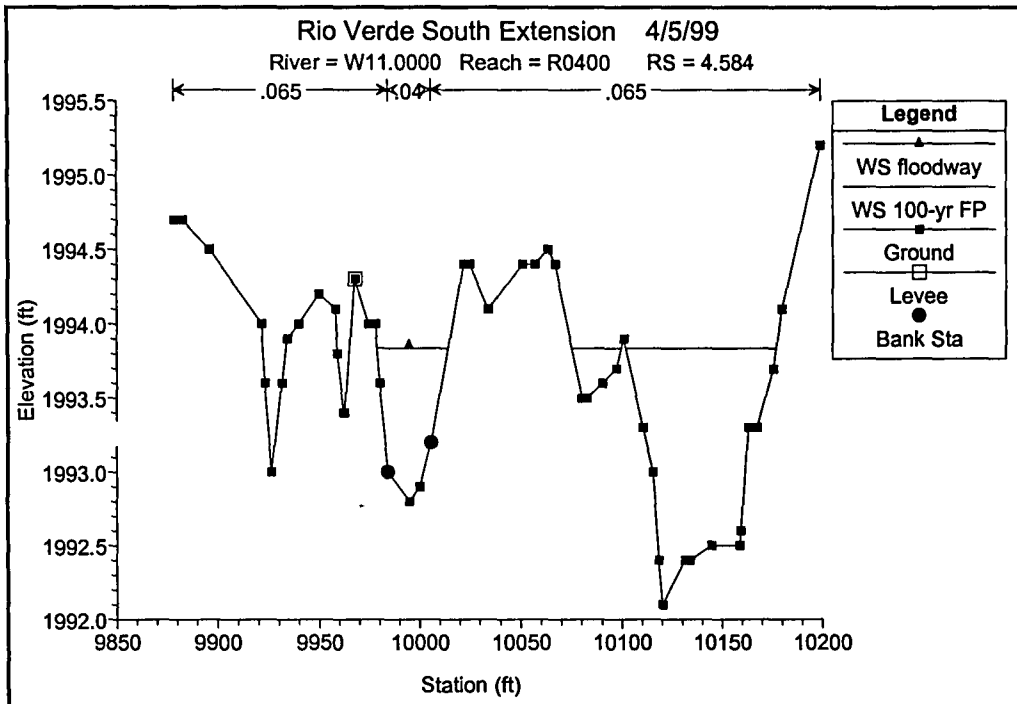

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0200 RS = 5.029
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

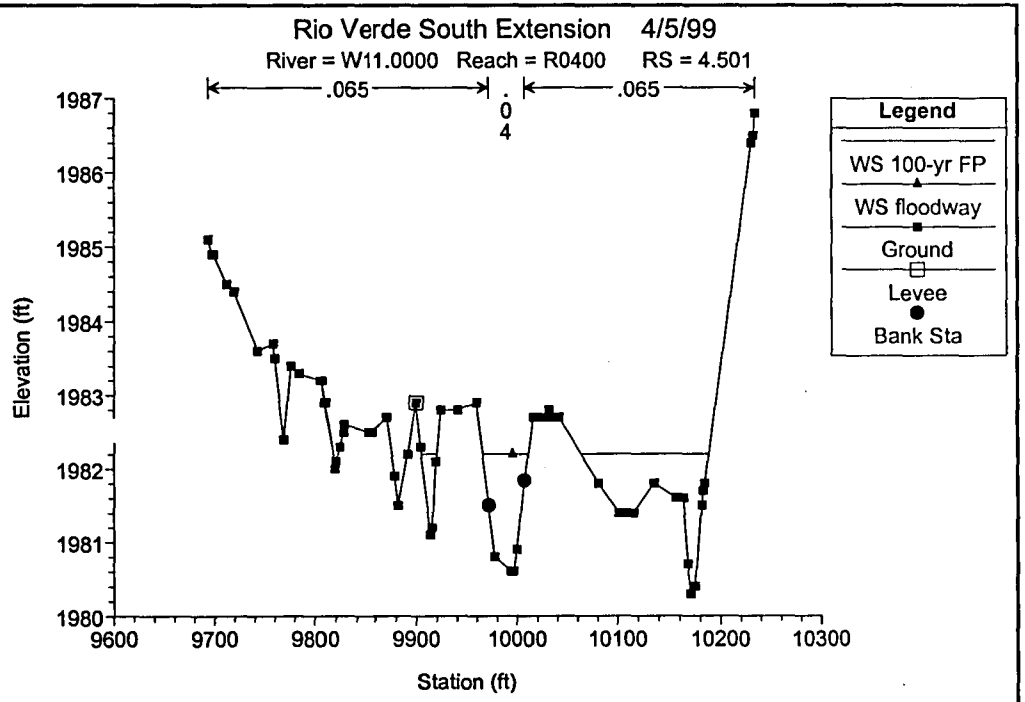

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0200 RS = 4.933
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

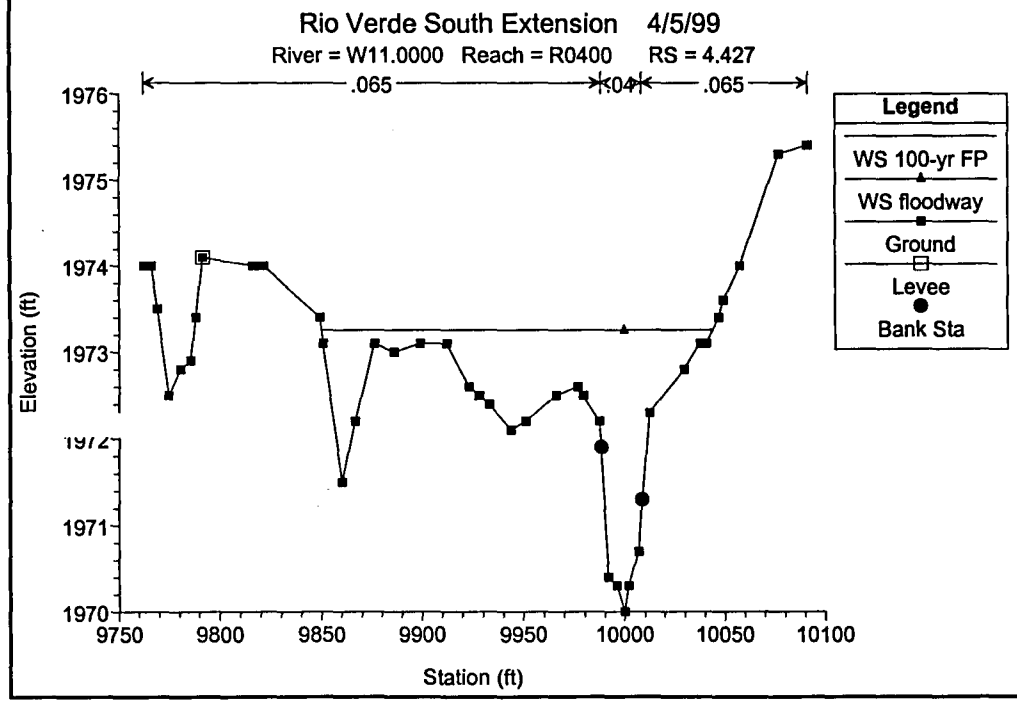

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0200 XS upstream of split S12.0000 RS = 4.877
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

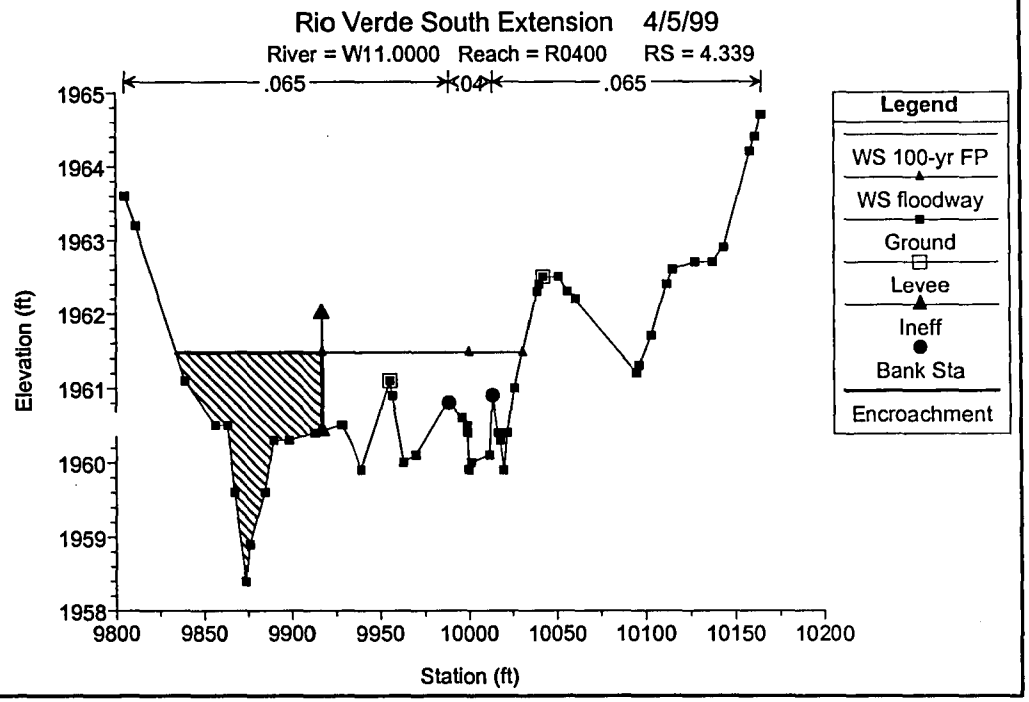

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0300 Q = 586 cfs from D534R HEC-1 FCD 93-07 RS = 4.843
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

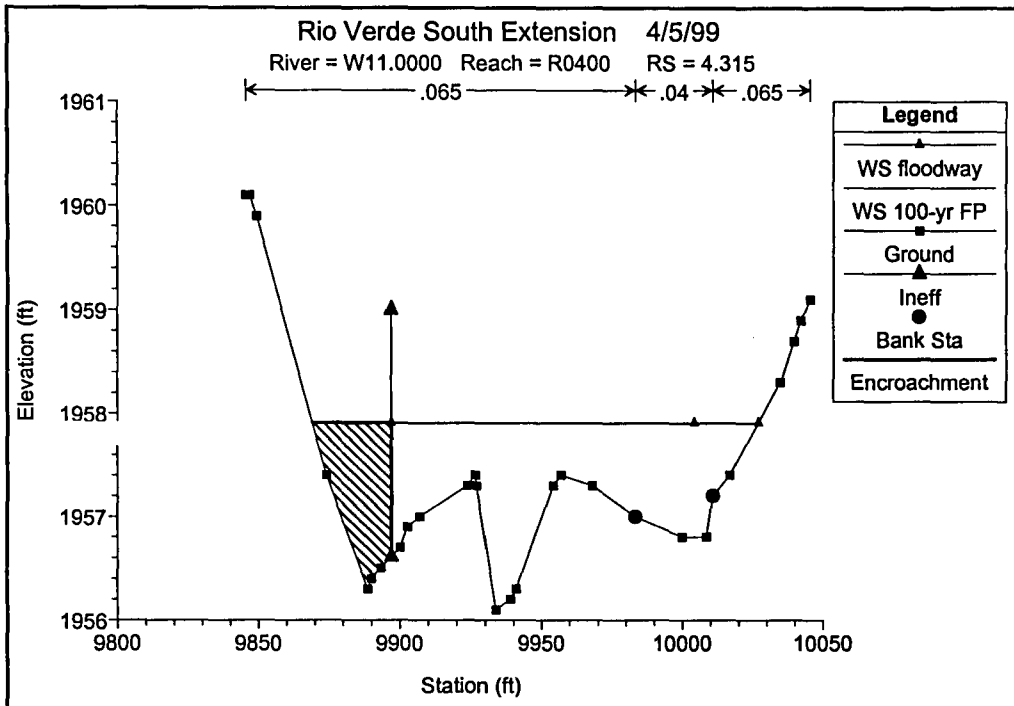

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0300 XS upstream of split S11.0205 RS = 4.821
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0400 Q = 506 cfs right split at S11.0205 RS = 4.799
.065
.065
.04
Legend
WS floodway
WS 100-yr FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0400 RS = 4.755
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0400 RS = 4.674
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Elevation (ft)
Station (ft)

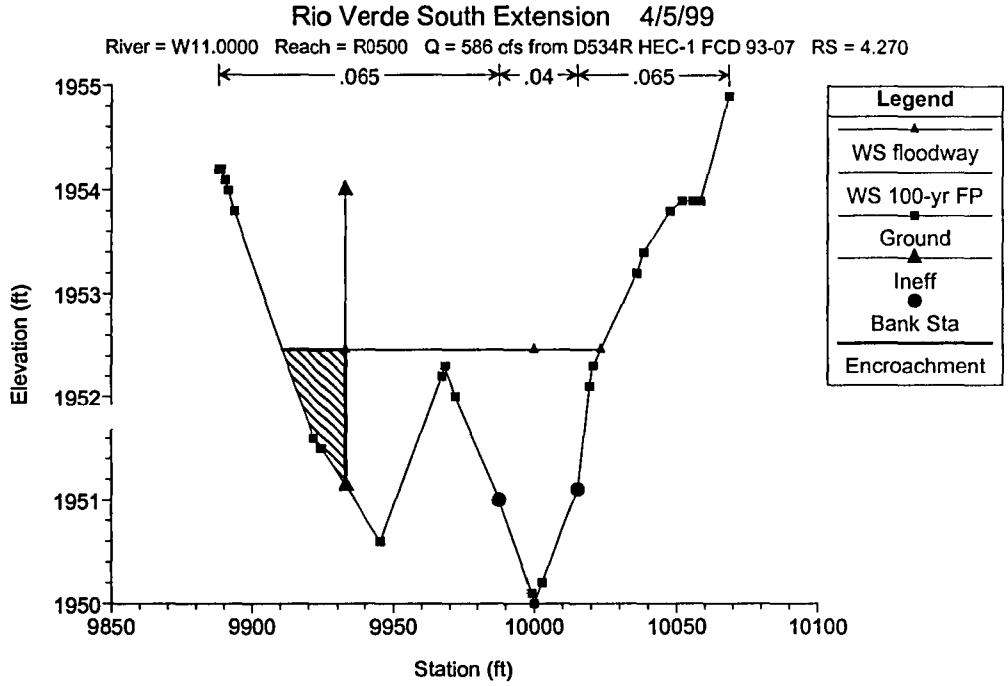

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0400 RS = 4.584
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

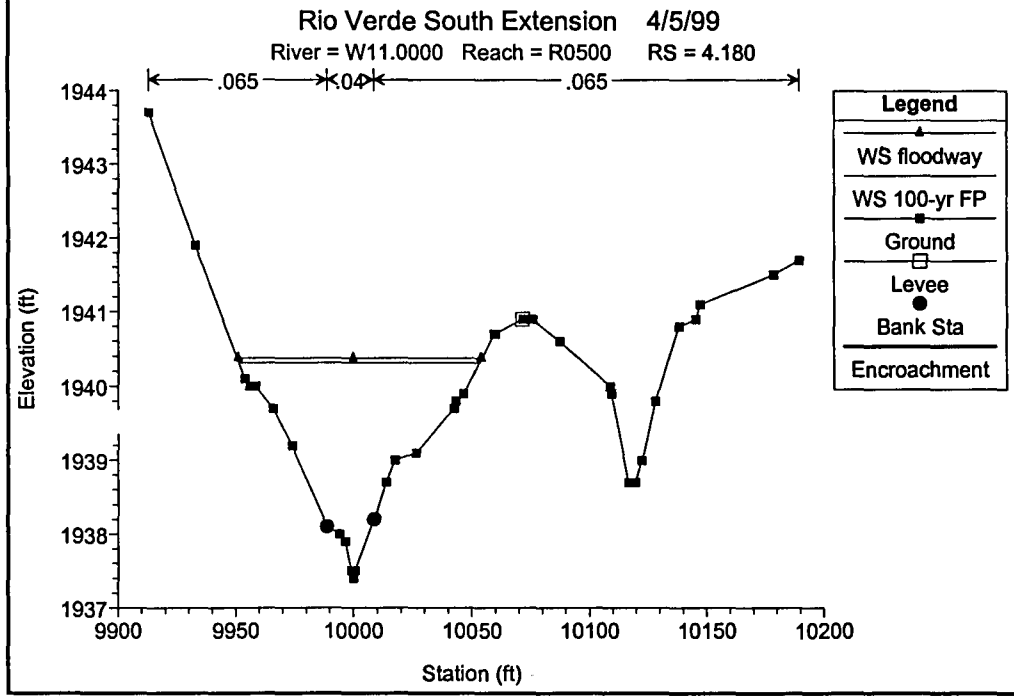

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0400 RS = 4.501
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

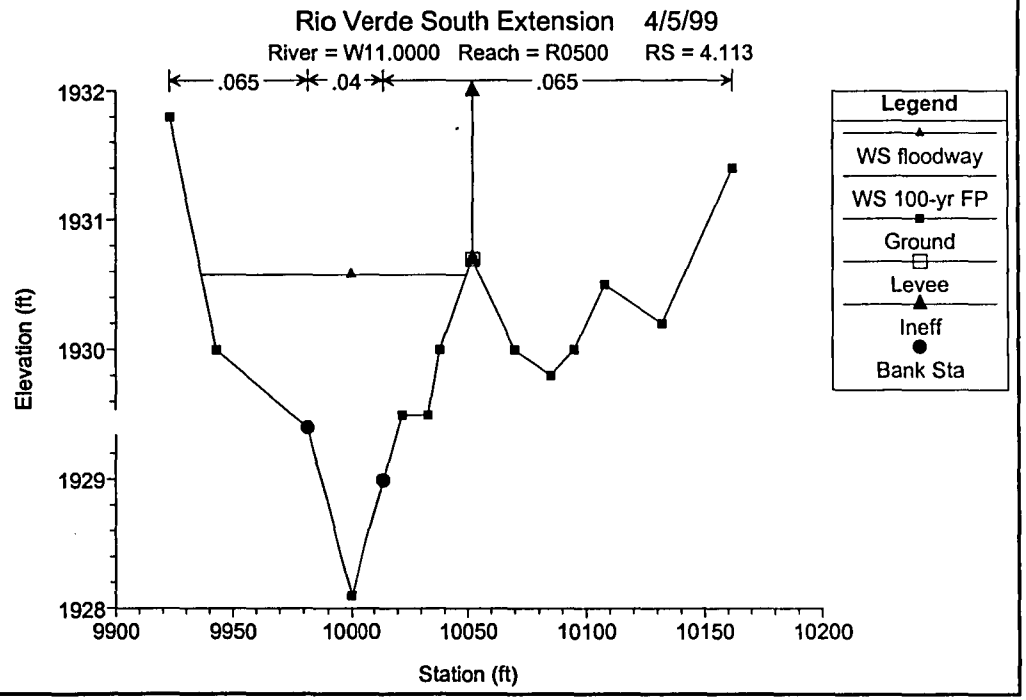

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0400 RS = 4.427
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

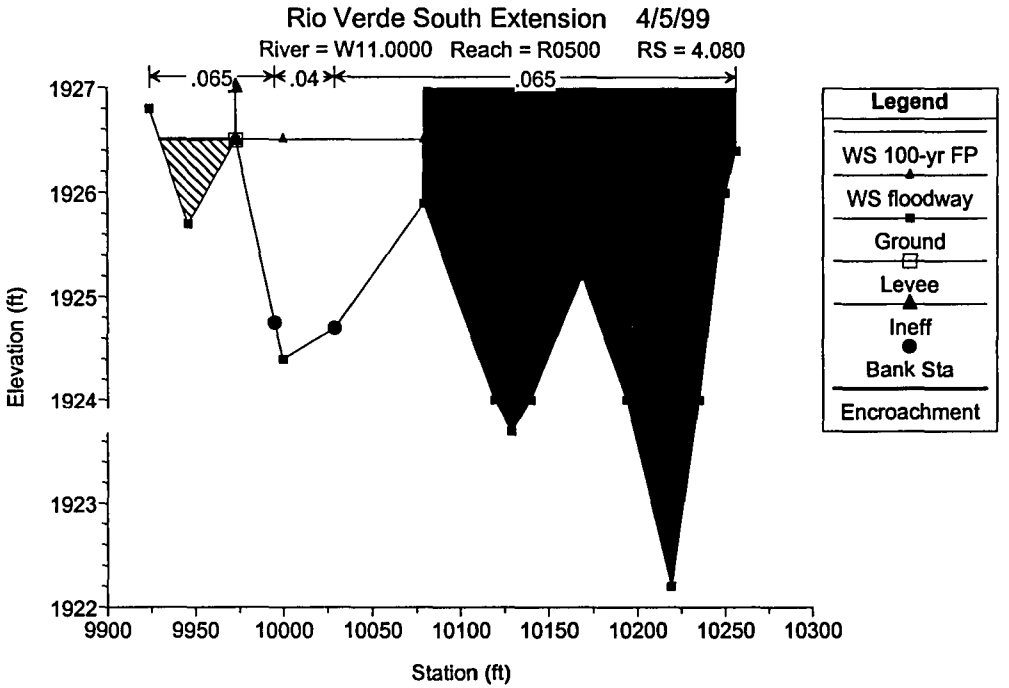

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0400 RS = 4.339
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

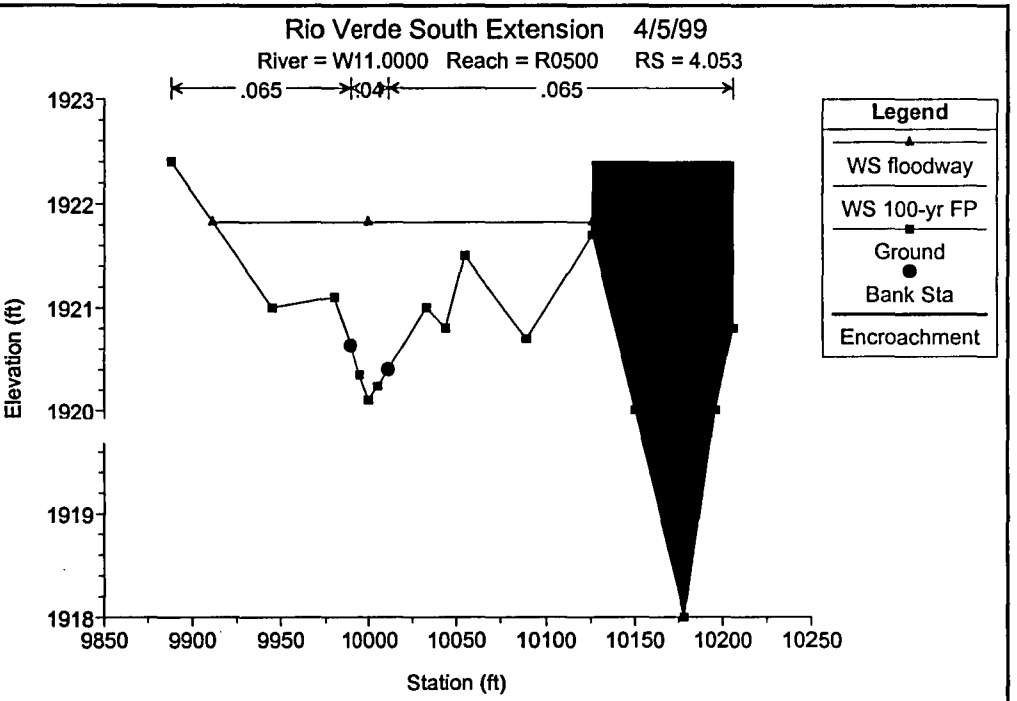

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0400 RS = 4.315
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

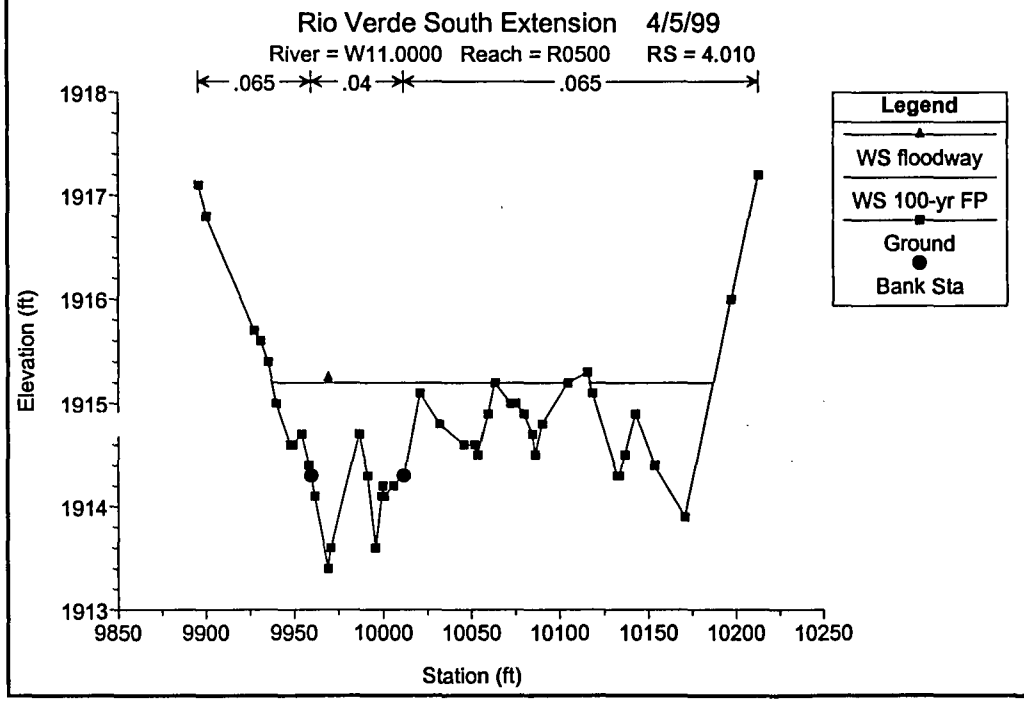

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0500 Q = 586 cfs from D534R HEC-1 FCD 93-07 RS = 4.270
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

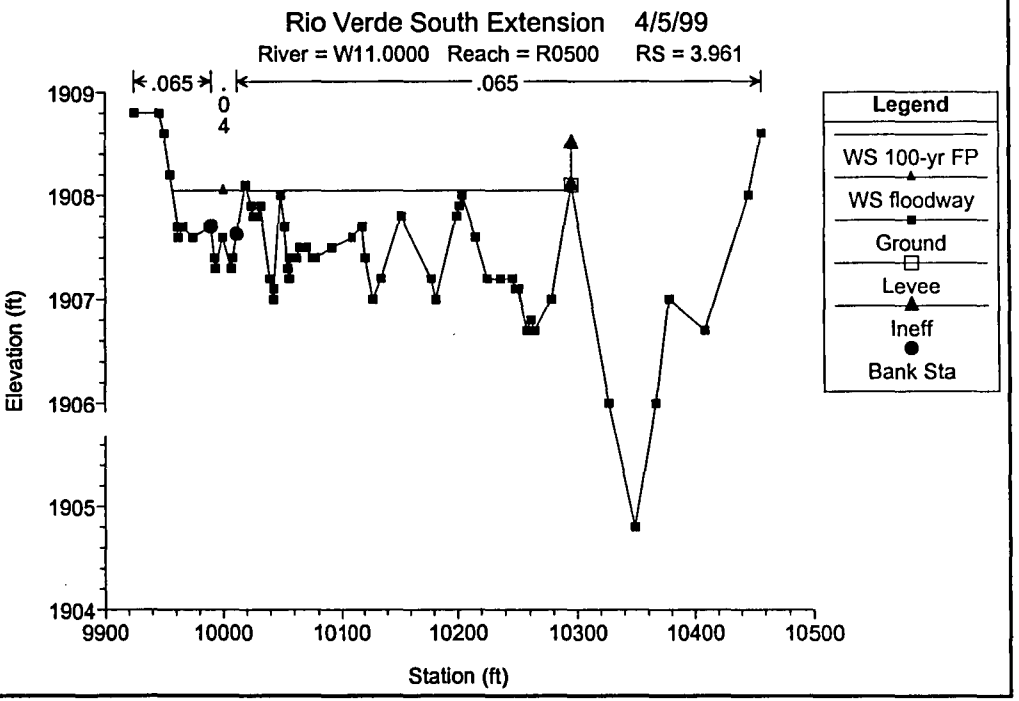

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0500 RS = 4.180
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

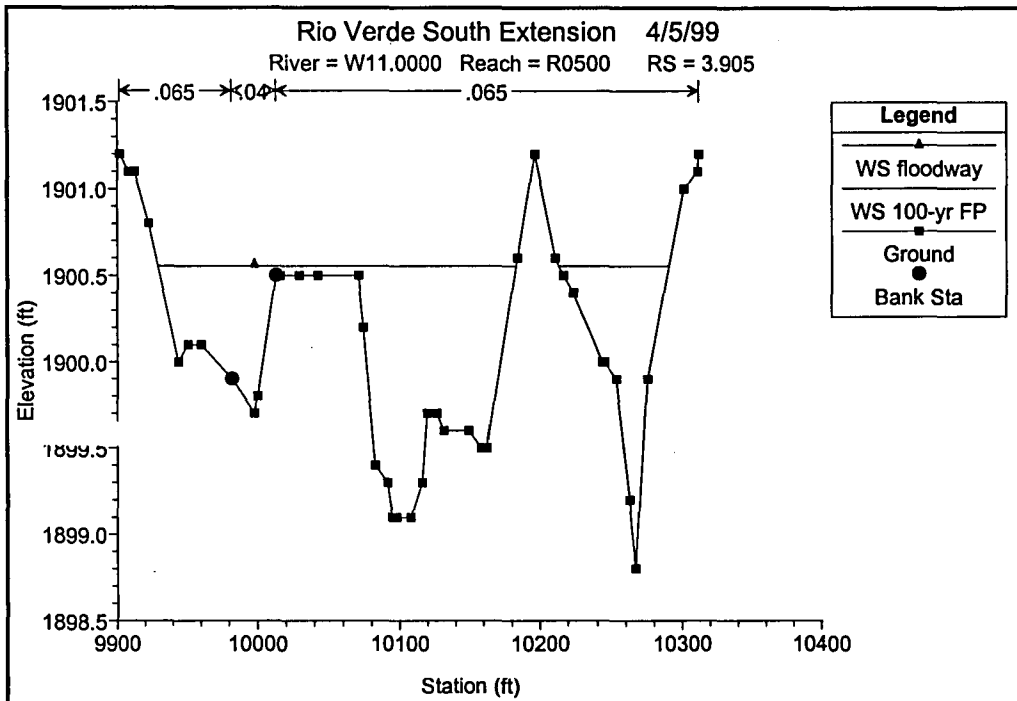

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0500 RS = 4.113
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

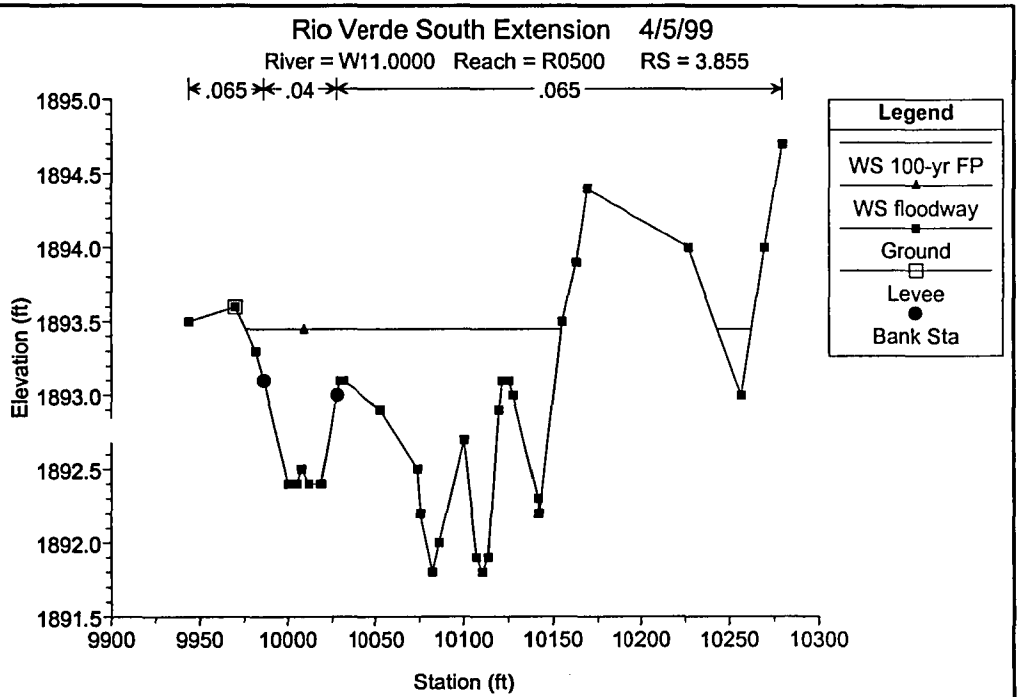

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0500 RS = 4.080
.065
.04
.065
Elevation (ft)
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment

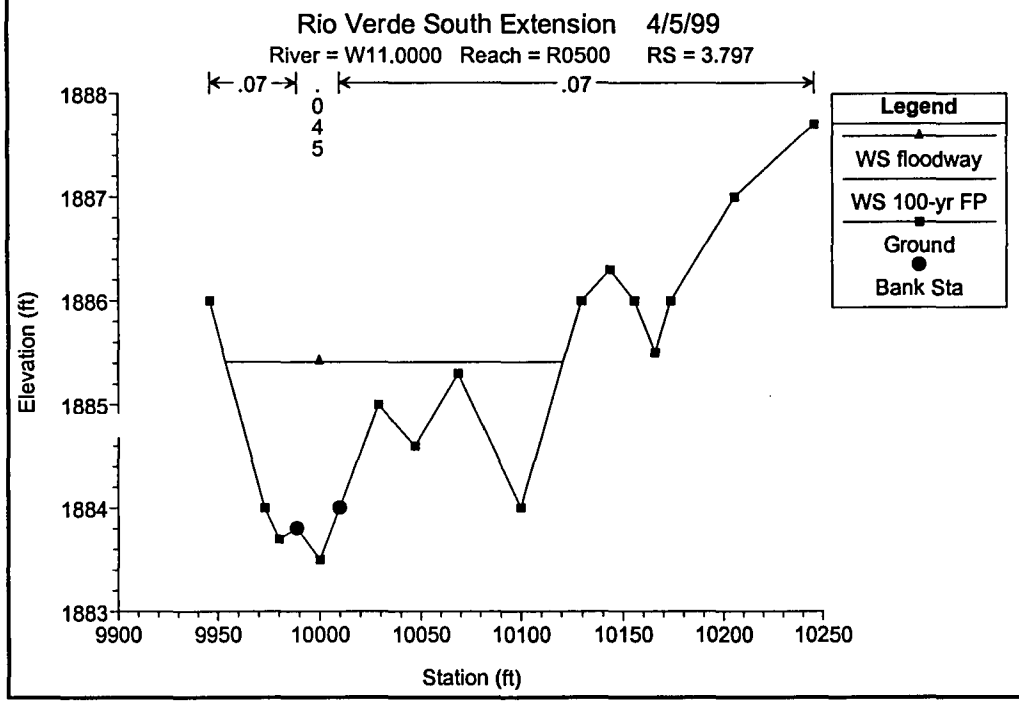

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0500 RS = 4.053
.065
.04
.065
Elevation (ft)
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment

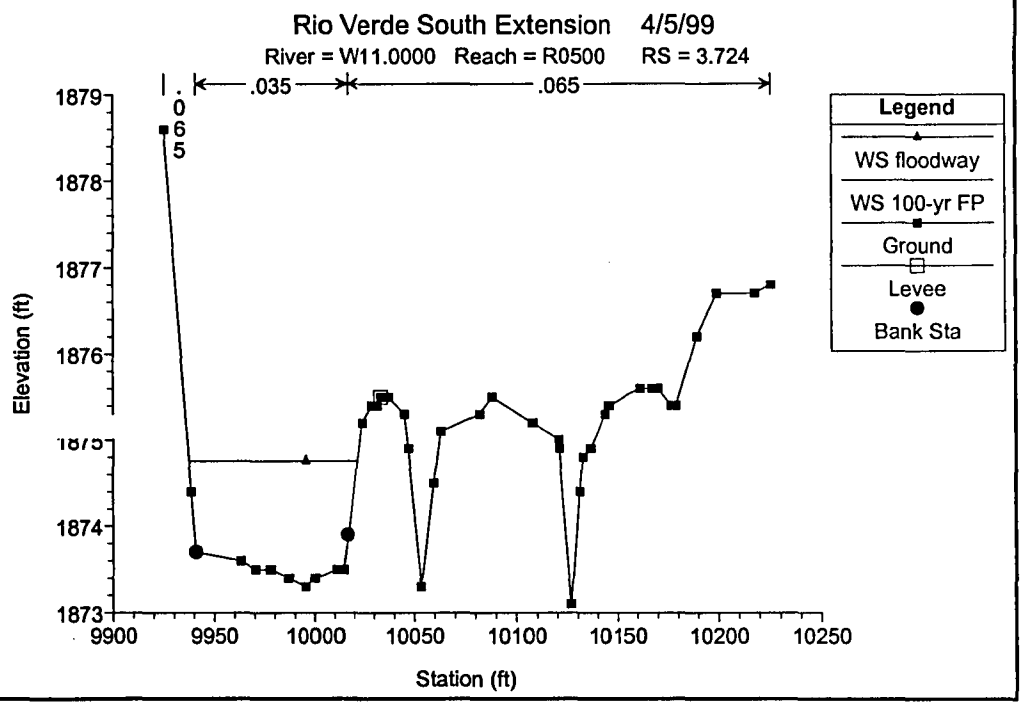

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0500 RS = 4.010
.065
.04
.065
Elevation (ft)
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta

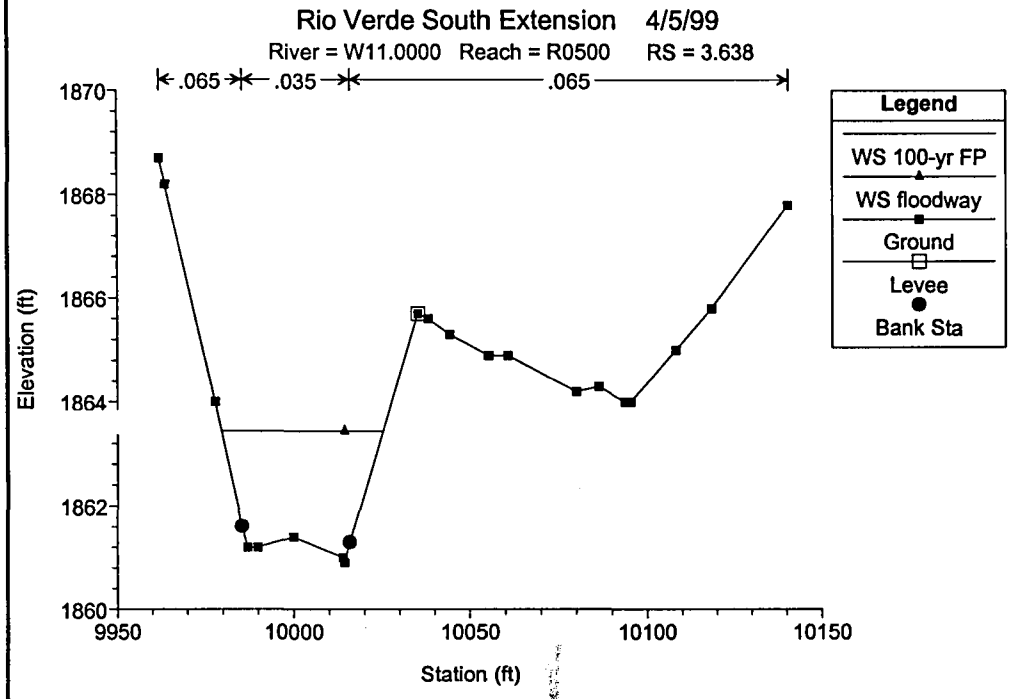

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0500 RS = 3.961
.065
.065
Elevation (ft)
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta

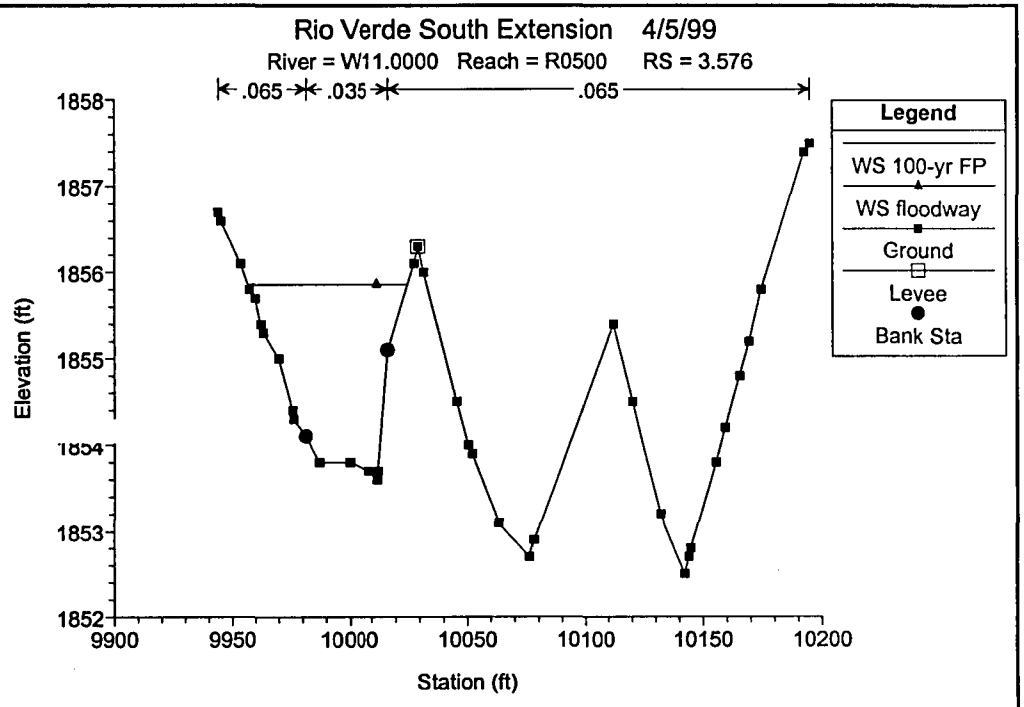

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0500 RS = 3.905
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

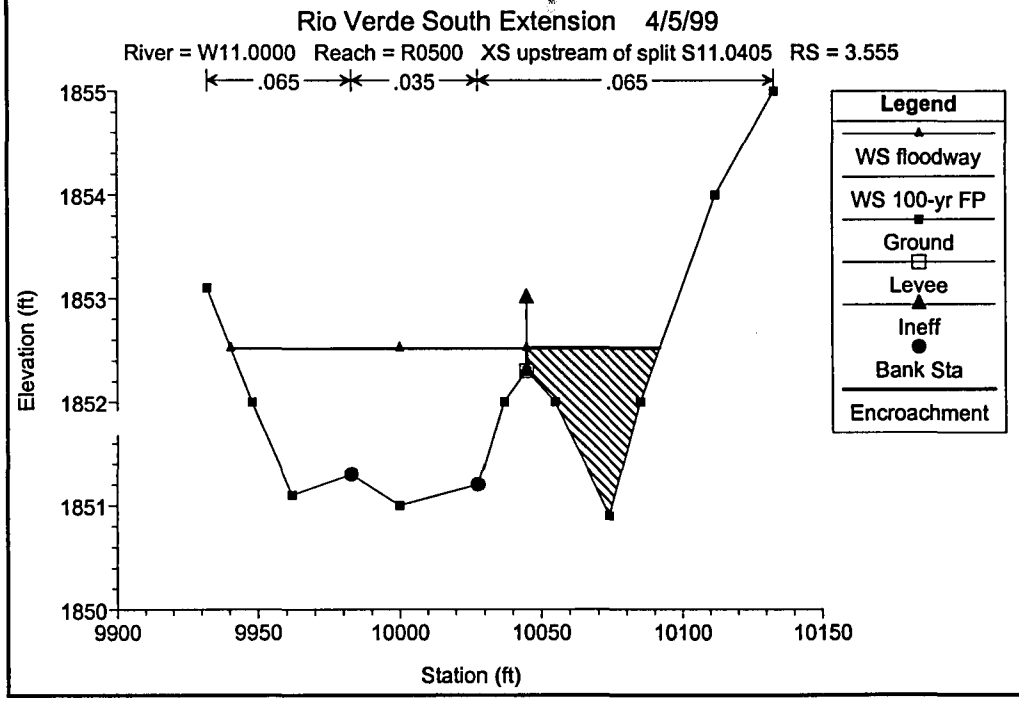

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0500 RS = 3.855
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

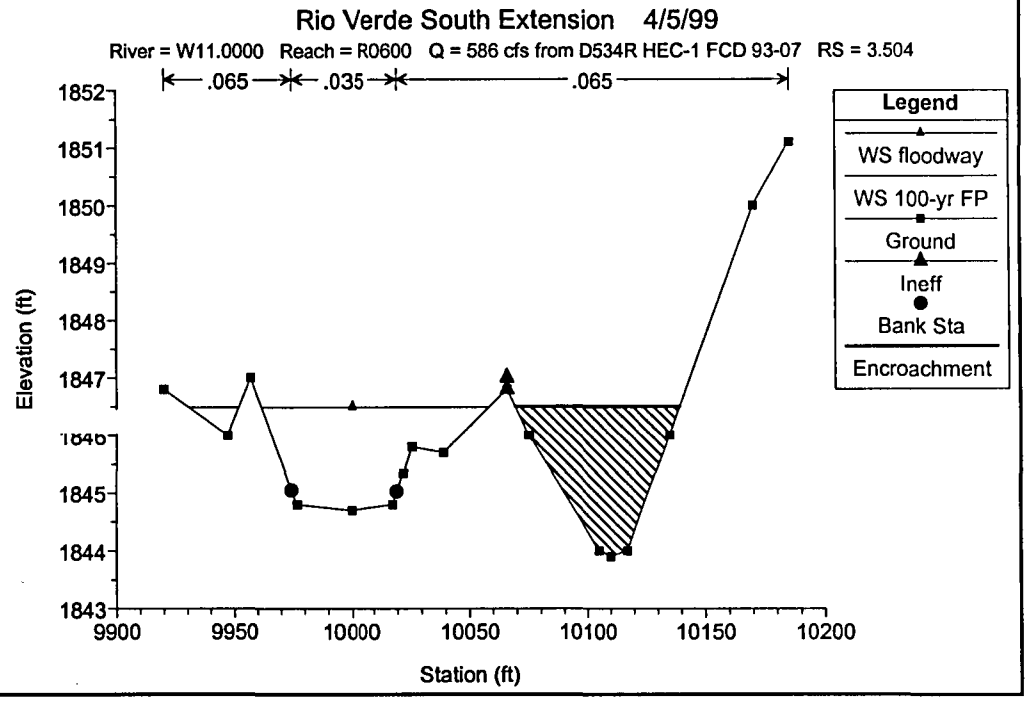

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0500 RS = 3.797
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

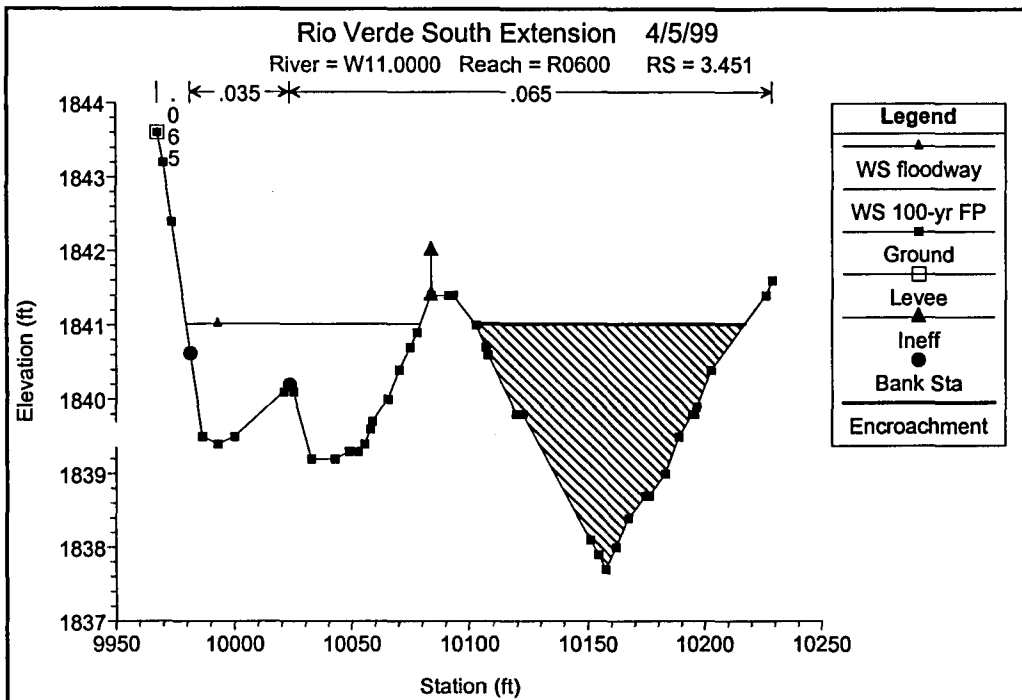

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0500 RS = 3.724
.065
.035
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

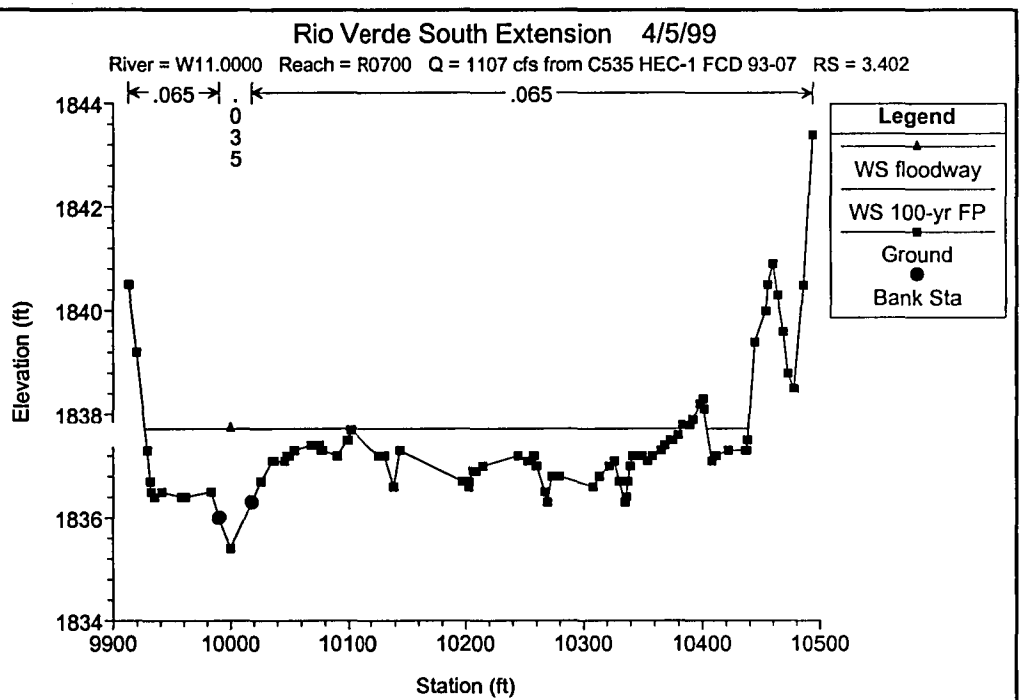

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0500 RS = 3.638
.065
.035
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

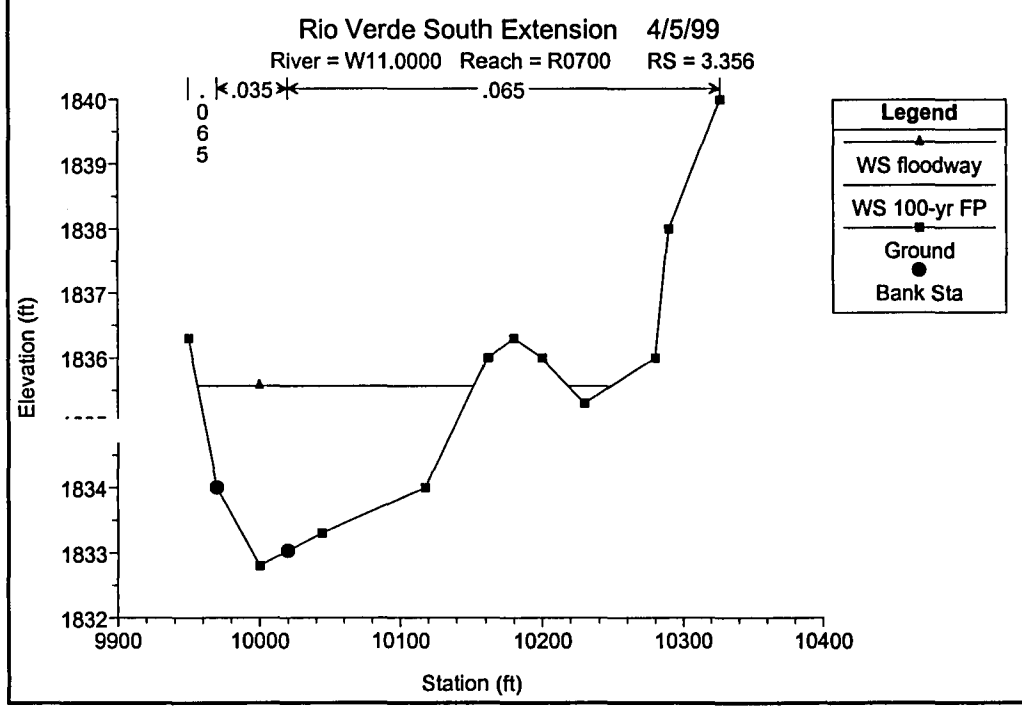

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0500 RS = 3.576
.065
.035
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

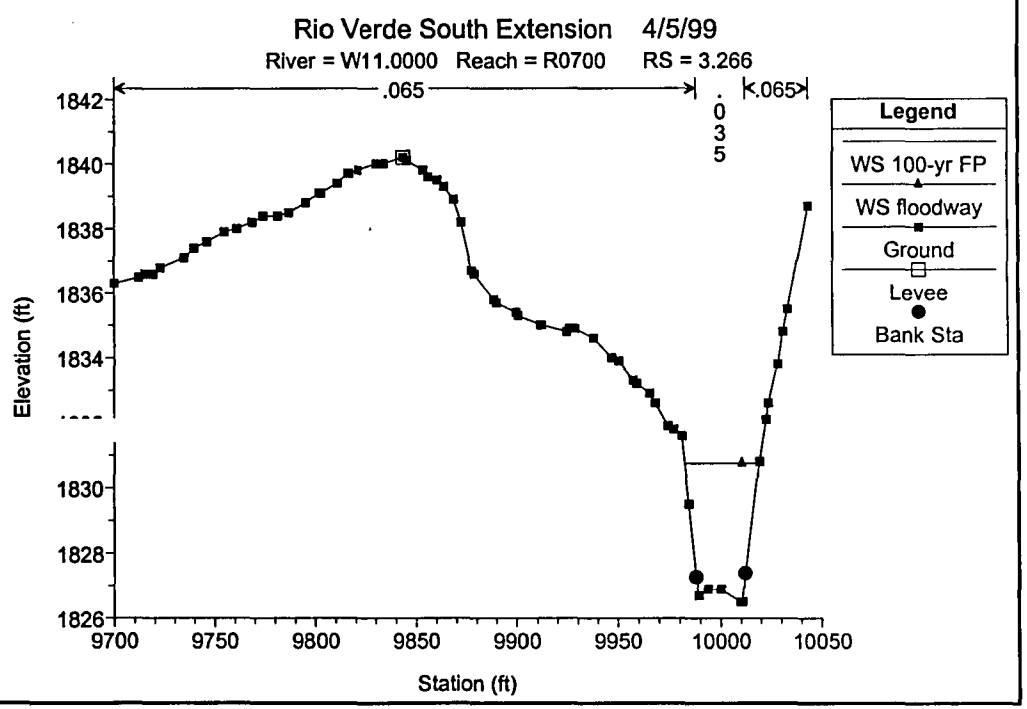

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0500 XS upstream of split S11.0405 RS = 3.555
.065
.035
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

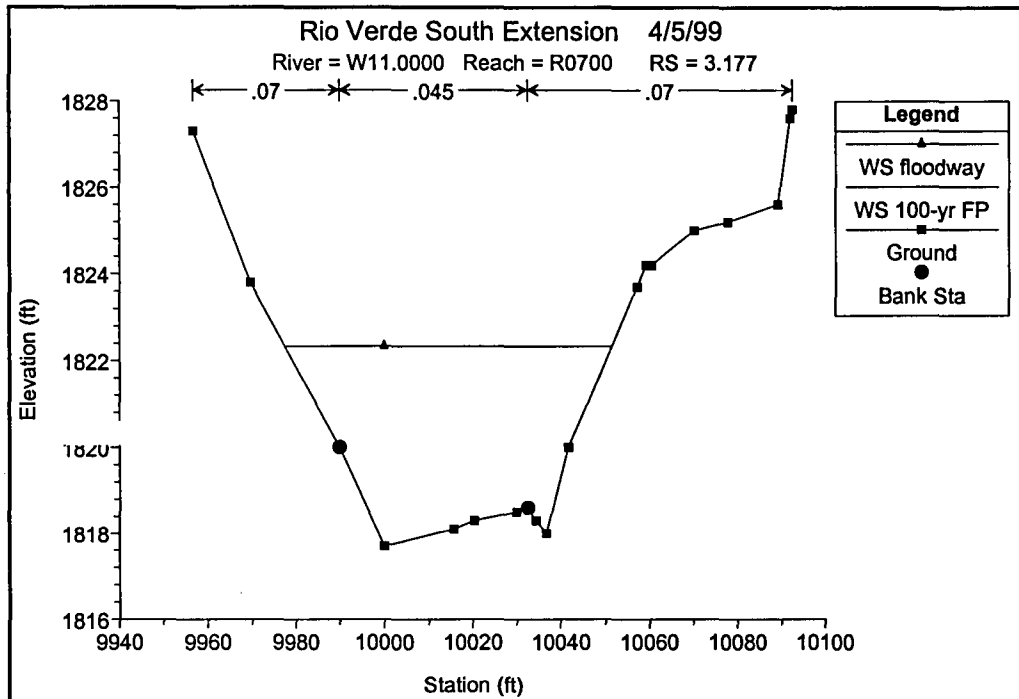

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0600 Q = 586 cfs from D534R HEC-1 FCD 93-07 RS = 3.504
.065
.035
.065
Legend
WS floodway
WS 100-yr FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

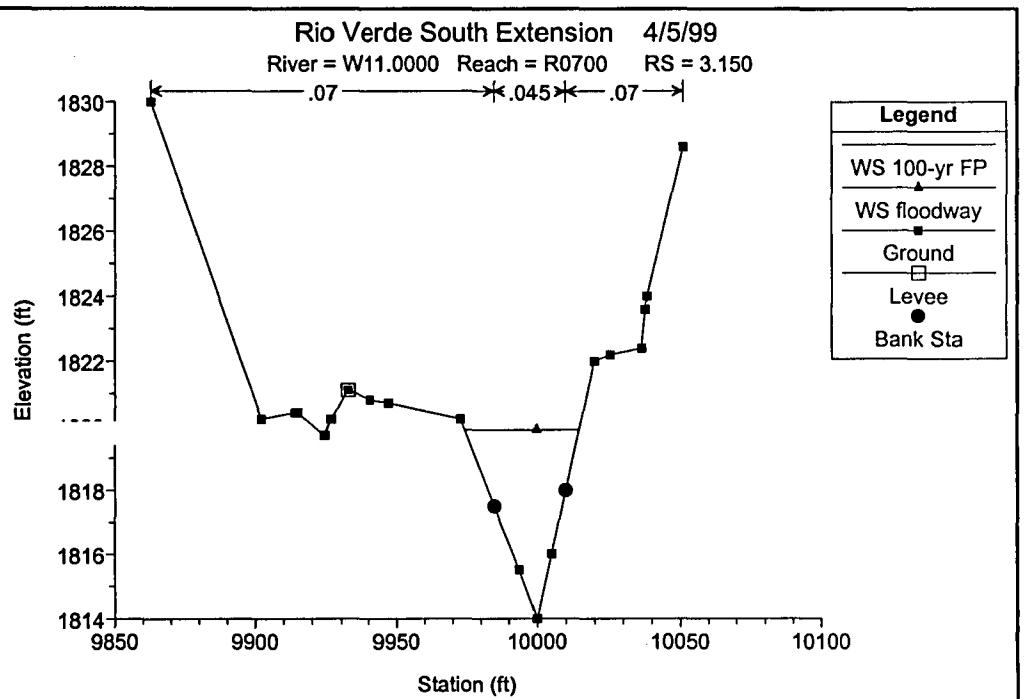

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0600 RS = 3.451
.035
.065
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

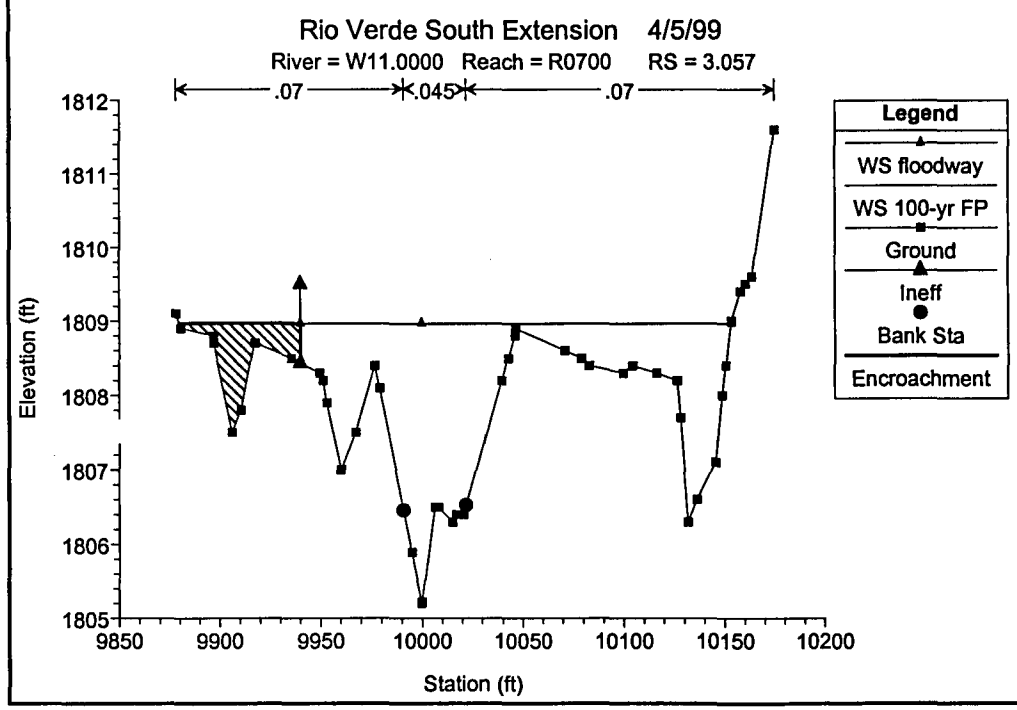

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0700 Q = 1107 cfs from C535 HEC-1 FCD 93-07 RS = 3.402
.065
.035
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

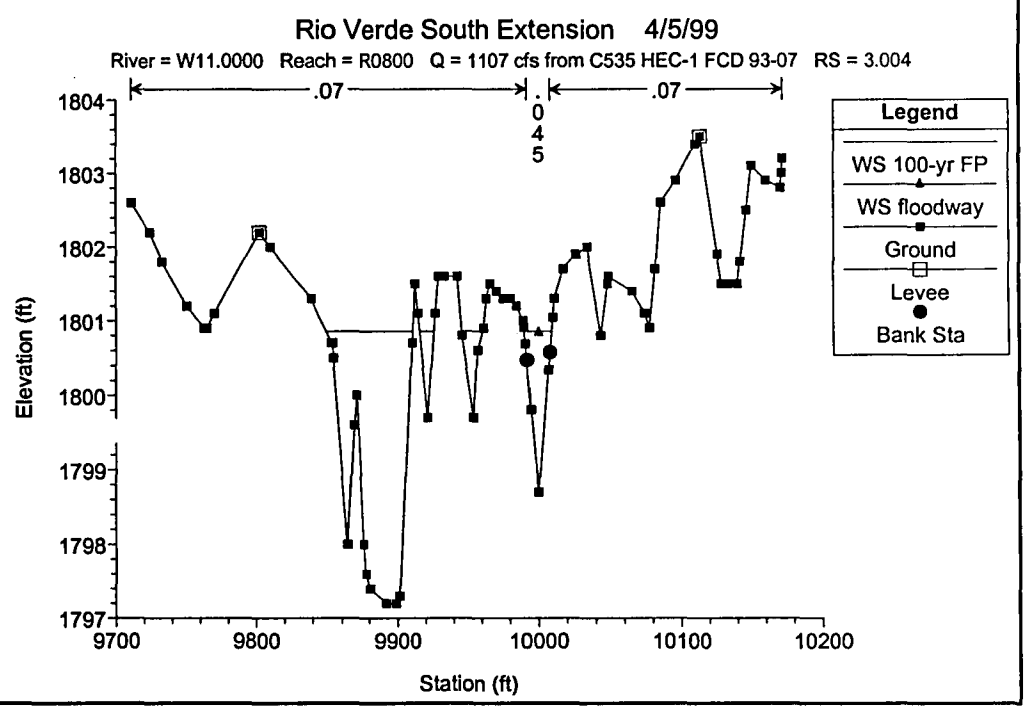

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0700 RS = 3.356
.035
.065
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

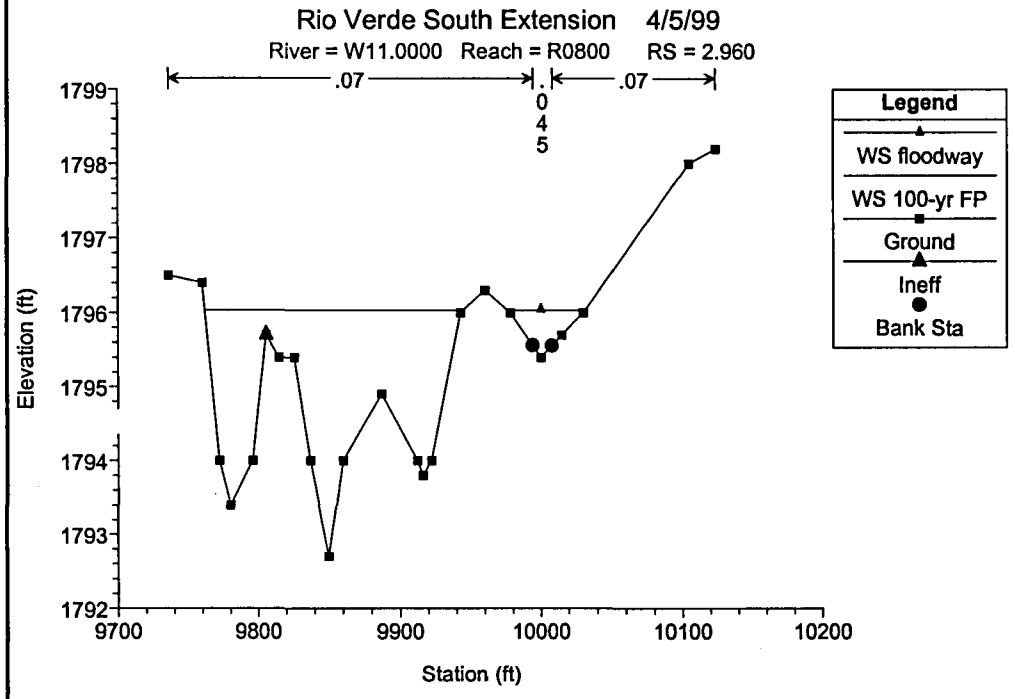

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0700 RS = 3.266
.065
.035
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

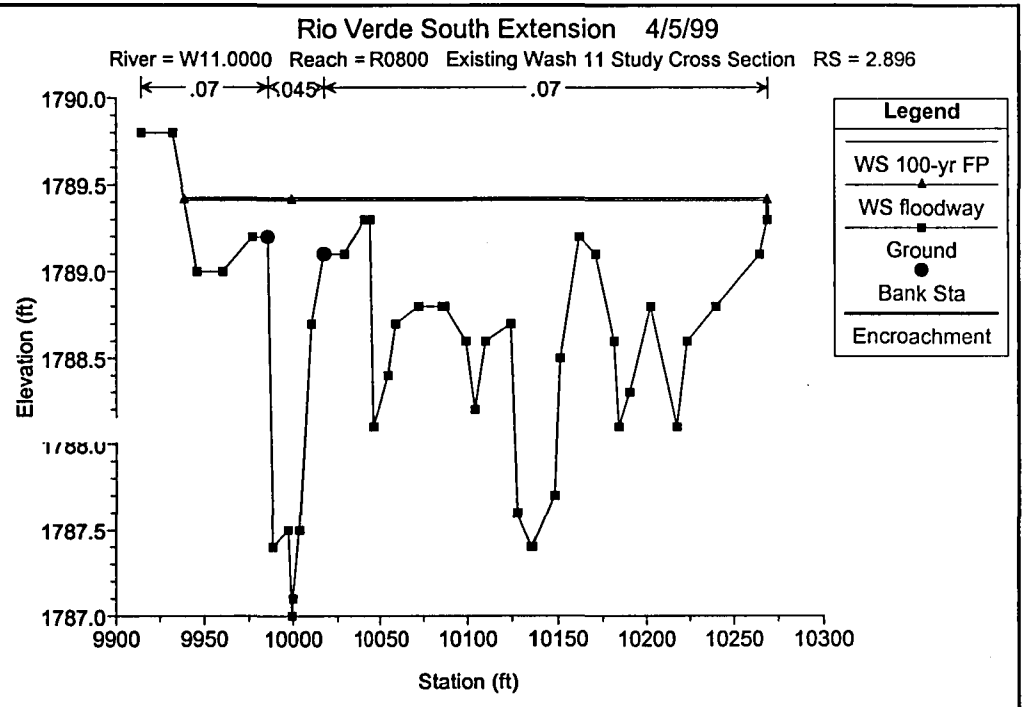

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0700 RS = 3.177
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

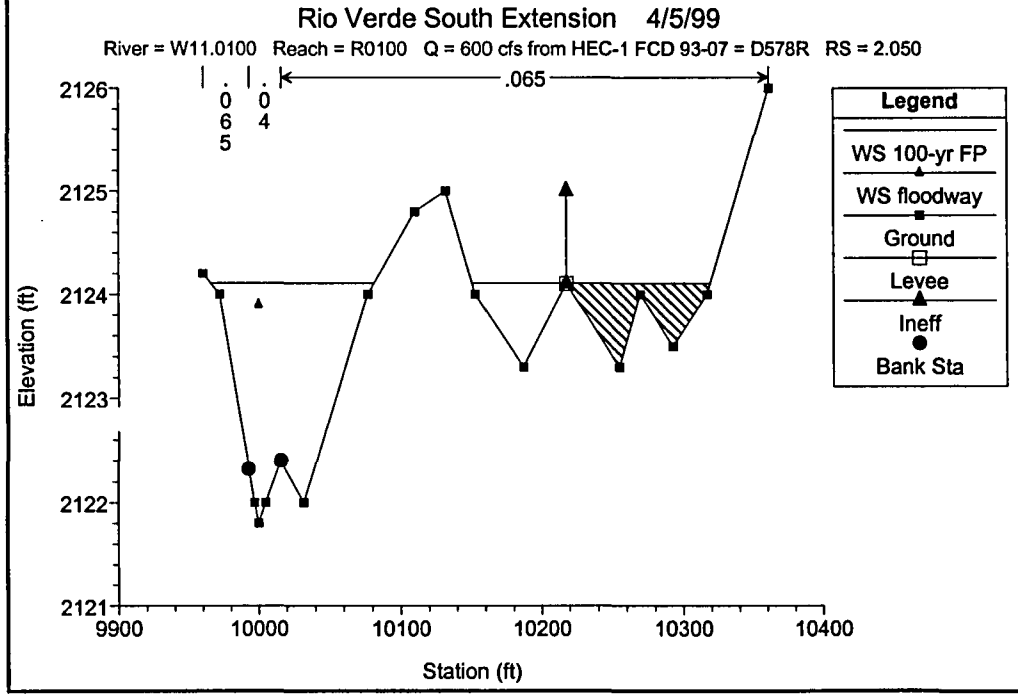

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0700 RS = 3.150
.07
.045
.07
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

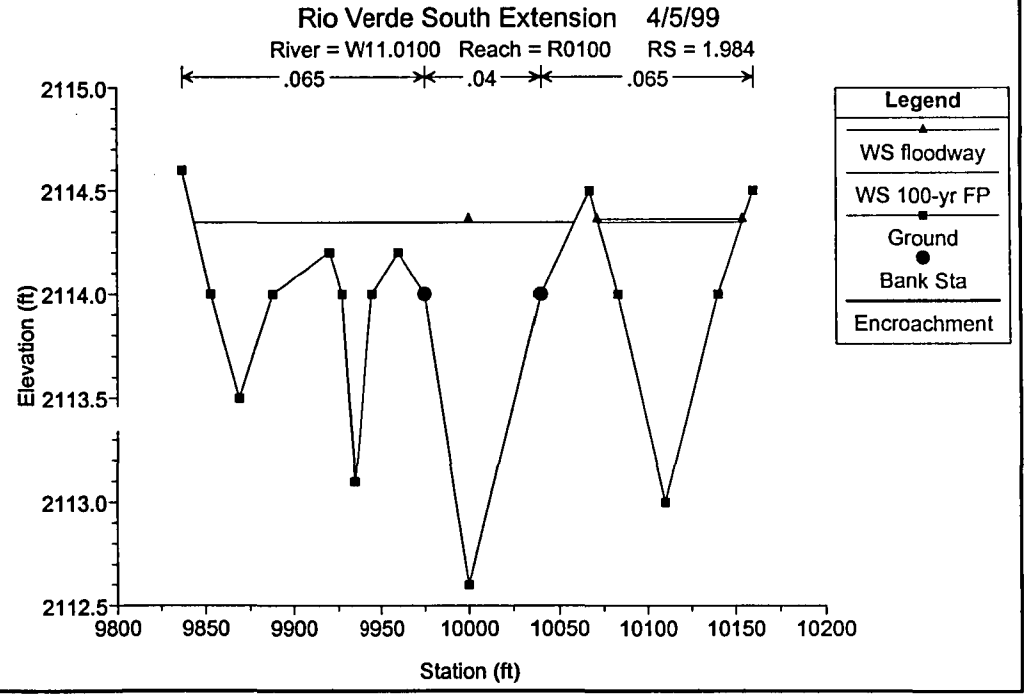

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0700 RS = 3.057
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

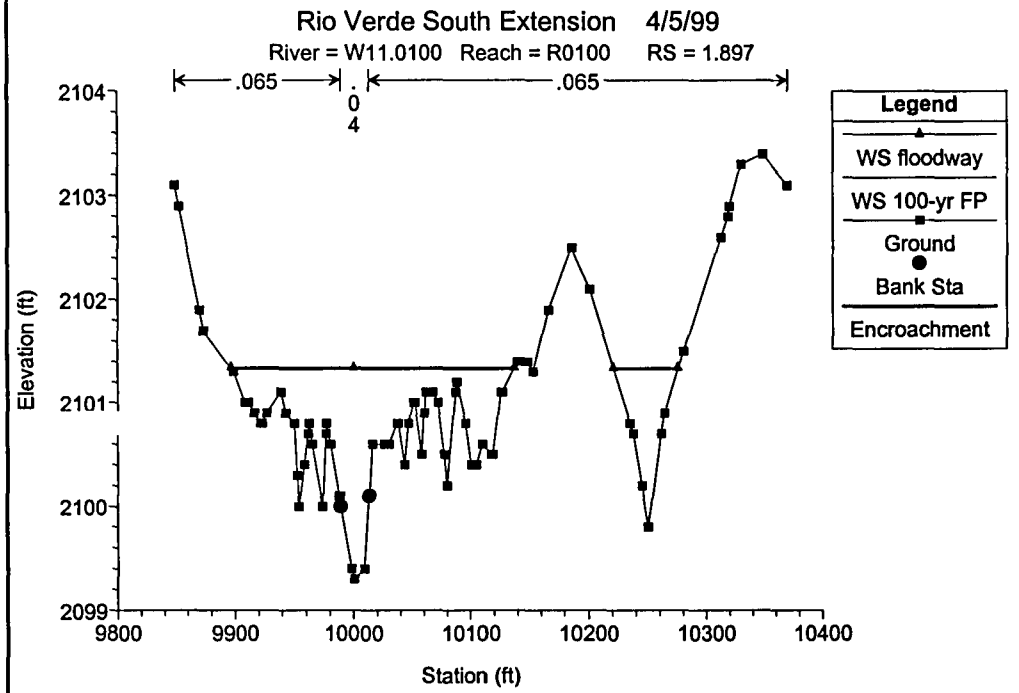

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0800 Q = 1107 cfs from C535 HEC-1 FCD 93-07 RS = 3.004
.07
.045
.07
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

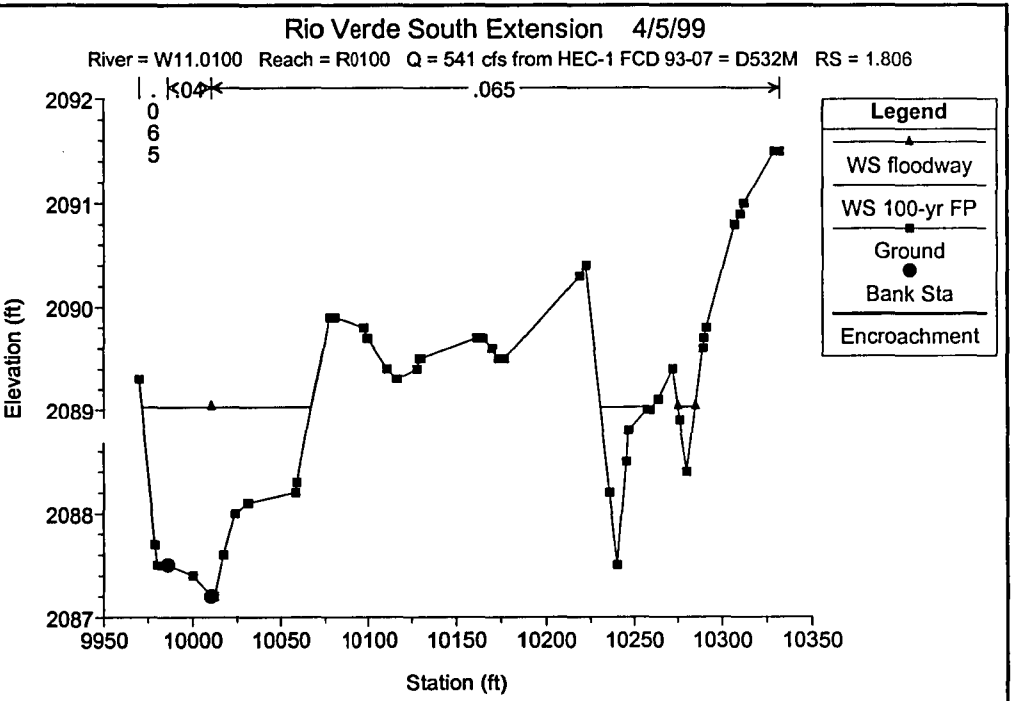

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0800 RS = 2.960
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

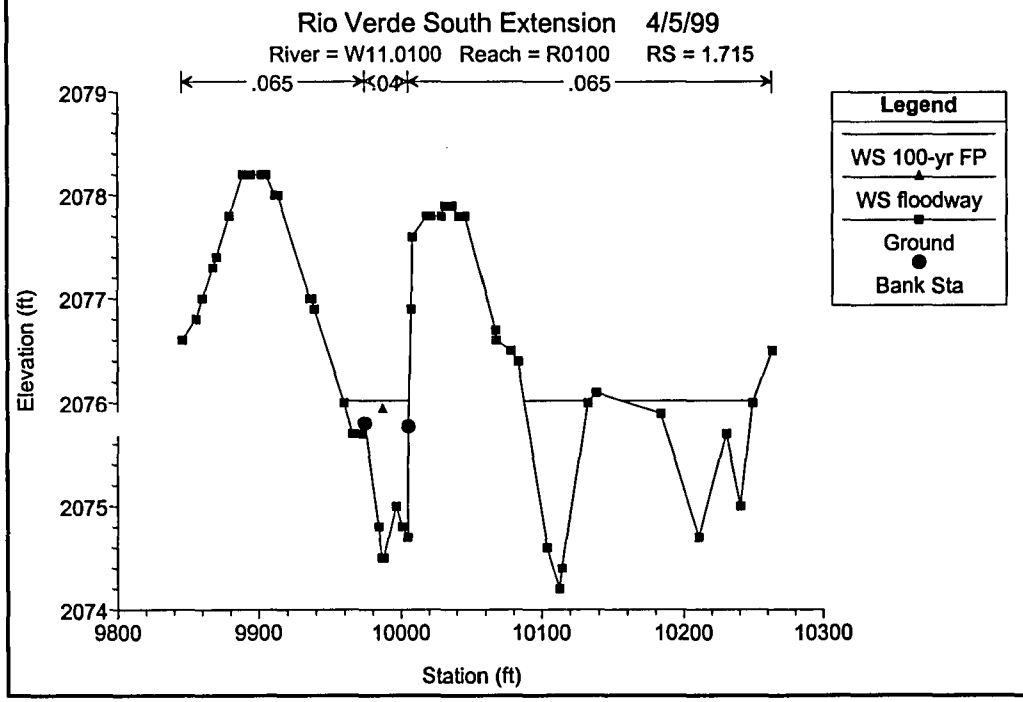

Rio Verde South Extension 4/5/99
River = W11.0000 Reach = R0800 Existing Wash 11 Study Cross Section RS = 2.896
.07
.045
.07
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

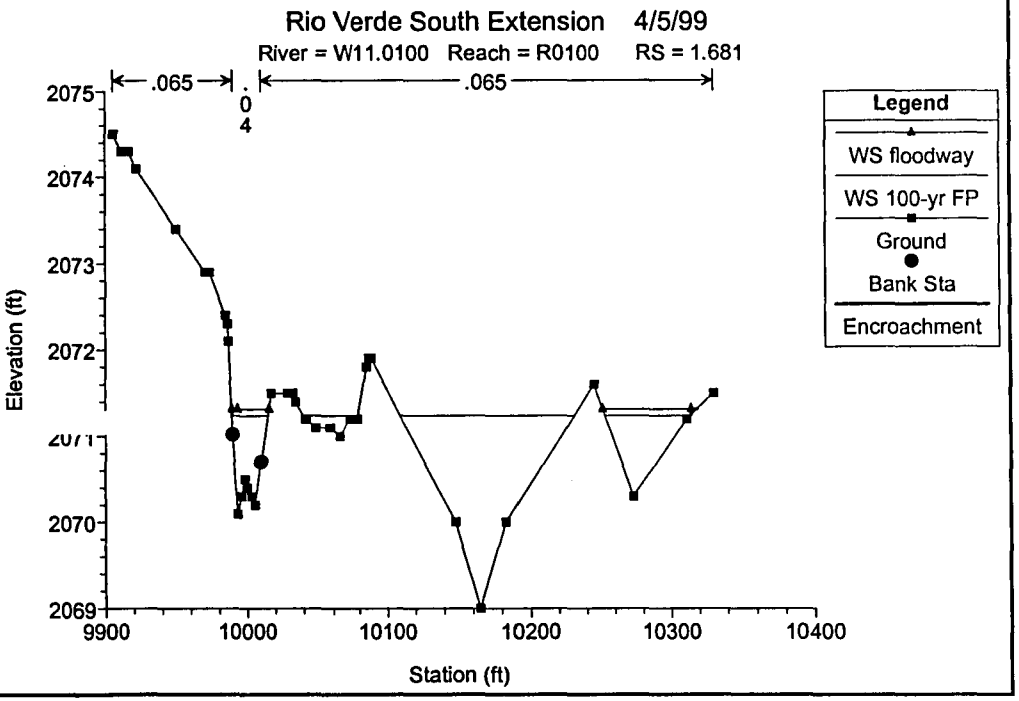

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 Q = 600 cfs from HEC-1 FCD 93-07 = D578R RS = 2.050
.065
.065
.04
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

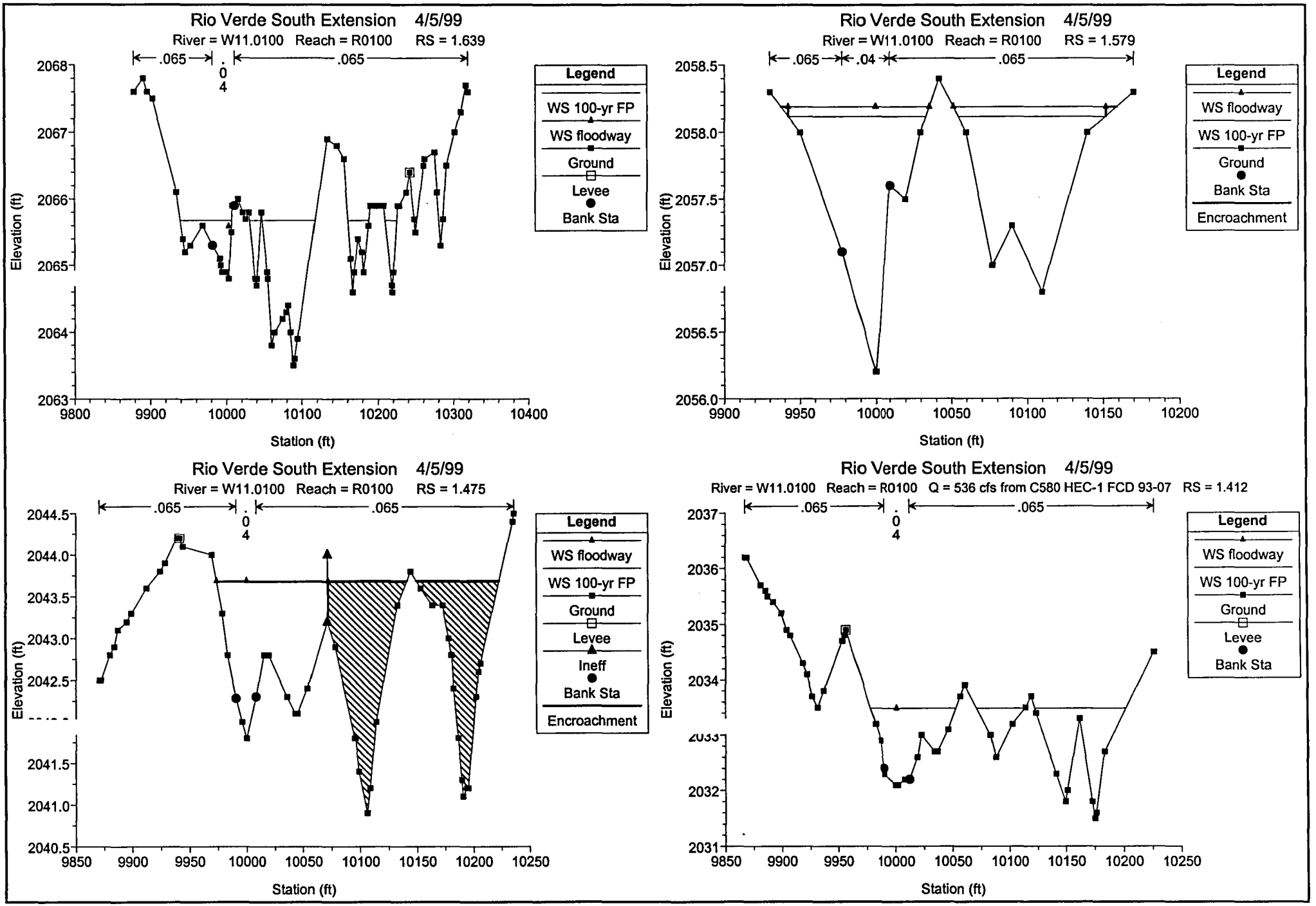

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 1.984
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

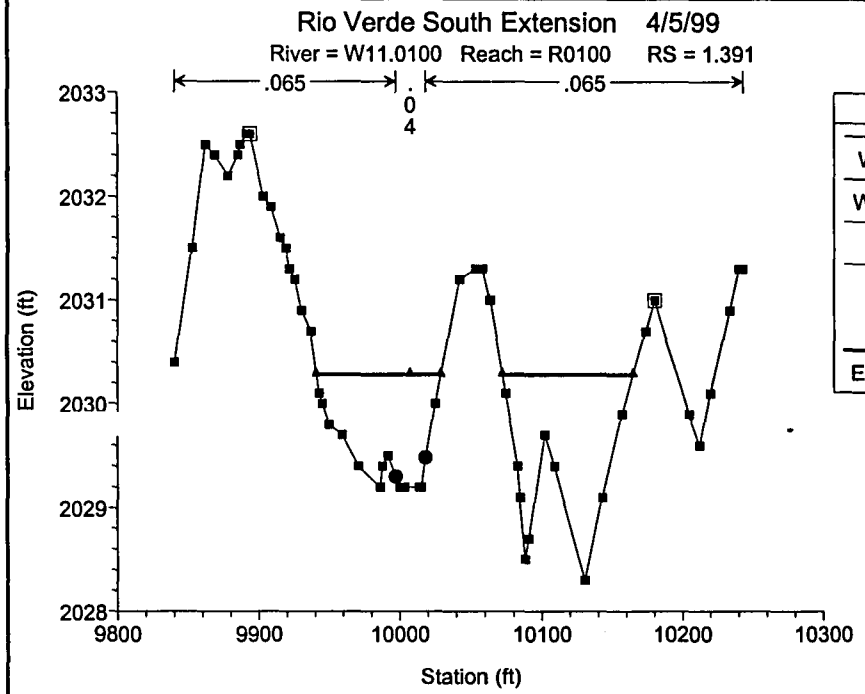

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 1.897
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

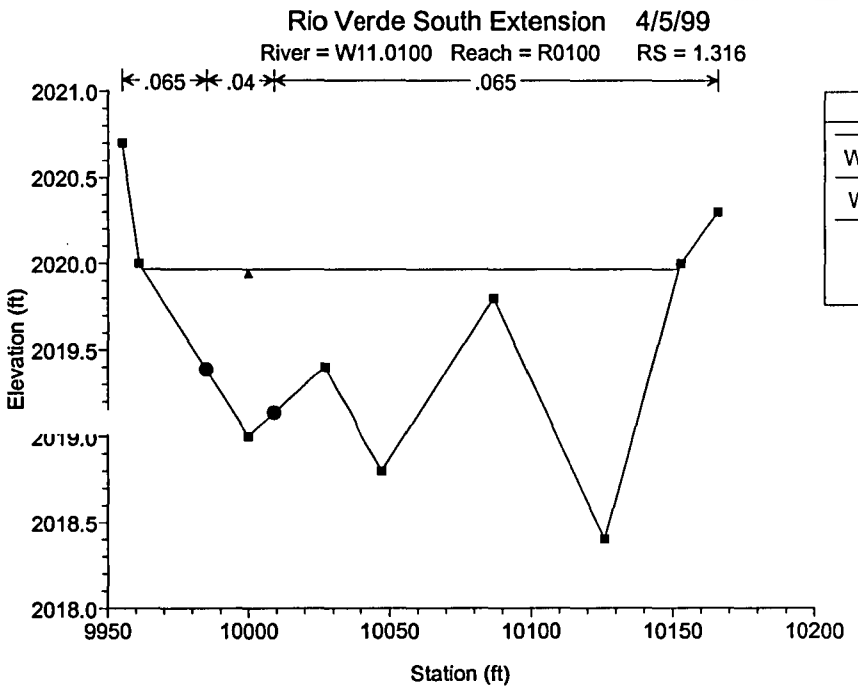

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 Q = 541 cfs from HEC-1 FCD 93-07 = D532M RS = 1.806
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

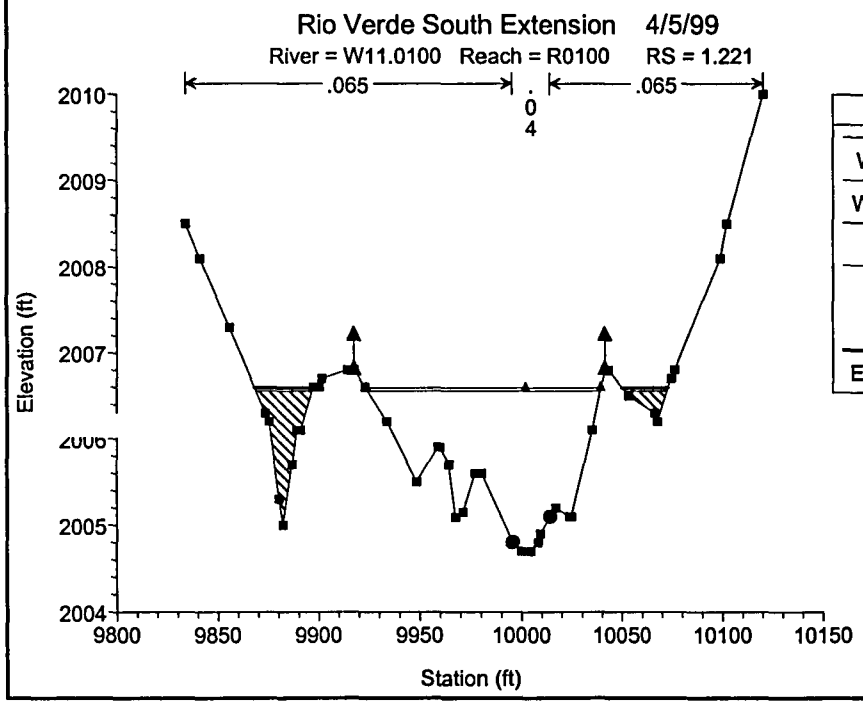

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 1.715
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Elevation (ft)
Station (ft)

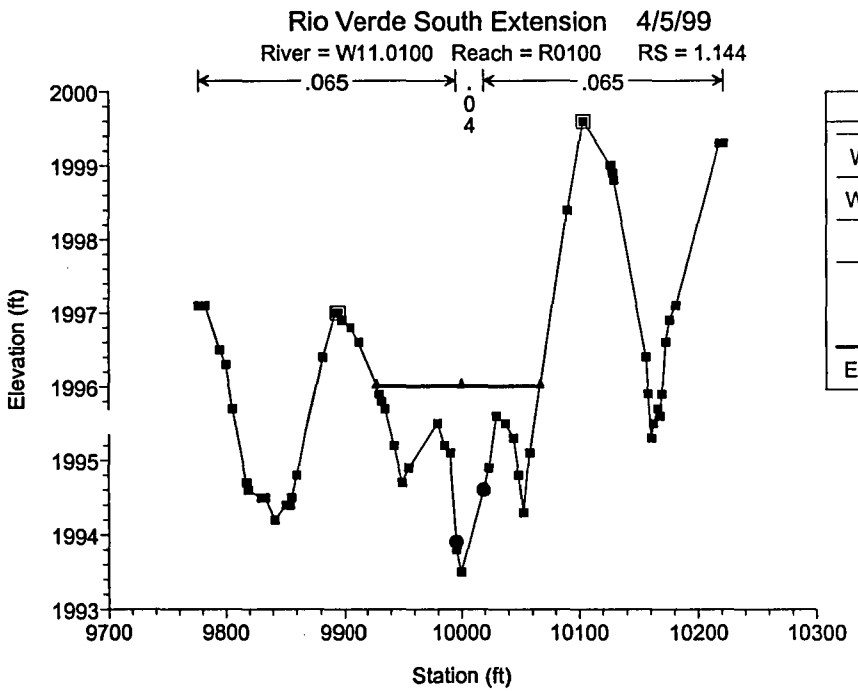

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 1.681
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

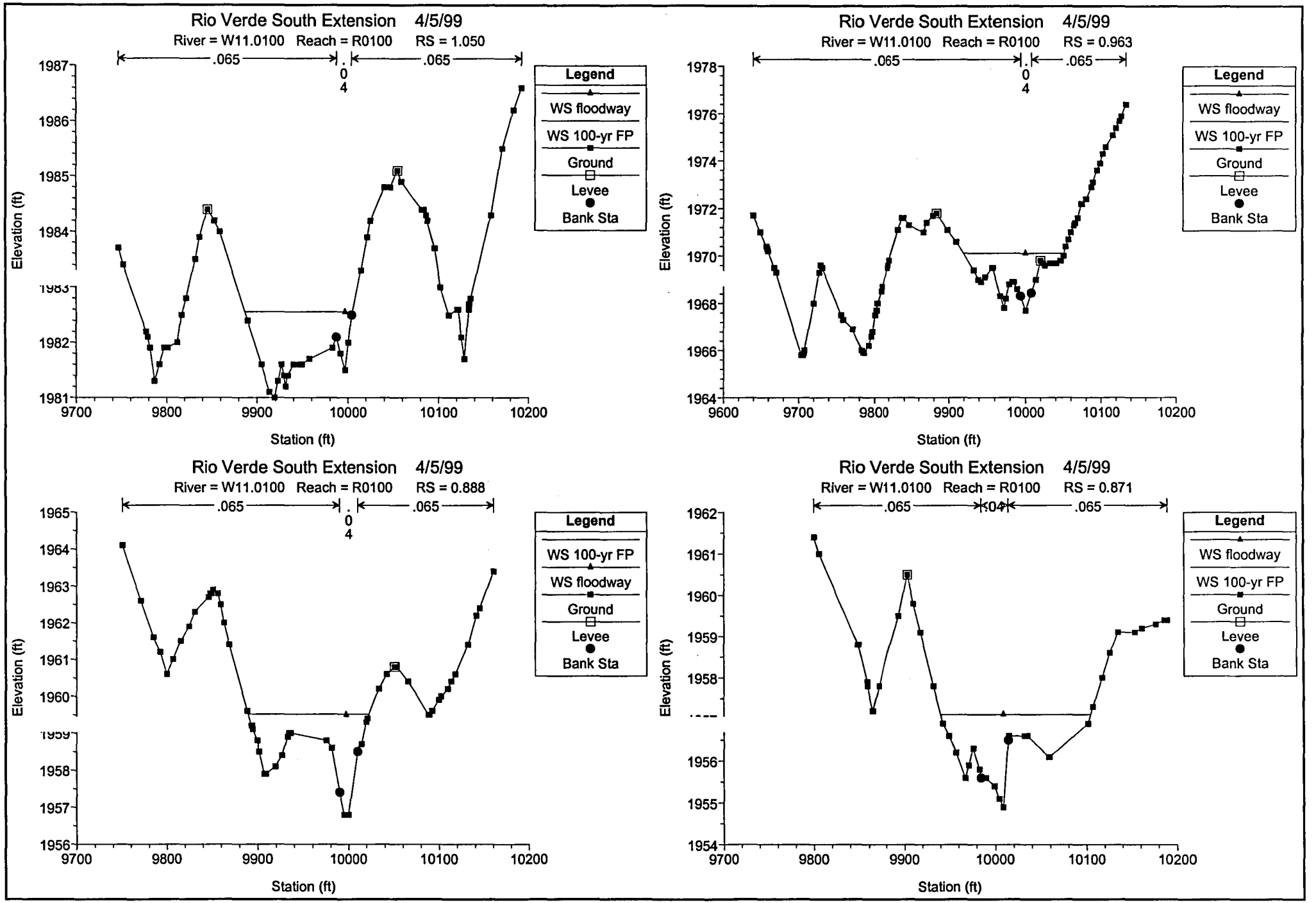

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 1.639
.065
.04
.065
Elevation (ft)
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 1.579
.065
.04
.065
Elevation (ft)
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 1.475
.065
.04
.065
Elevation (ft)
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Encroachment
Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 Q = 536 cfs from C580 HEC-1 FCD 93-07 RS = 1.412
.065
.04
.065
Elevation (ft)
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta

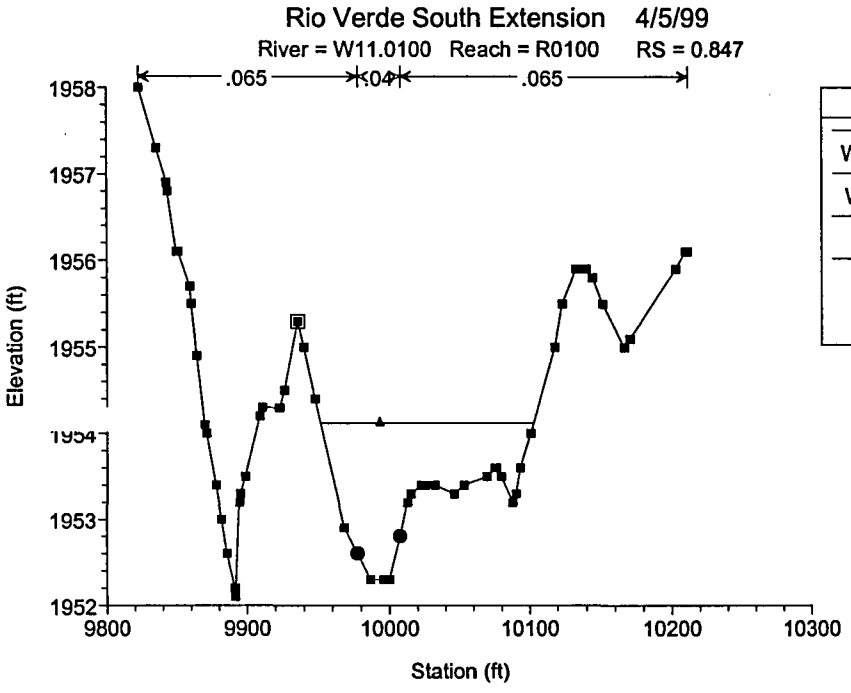

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 1.391
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

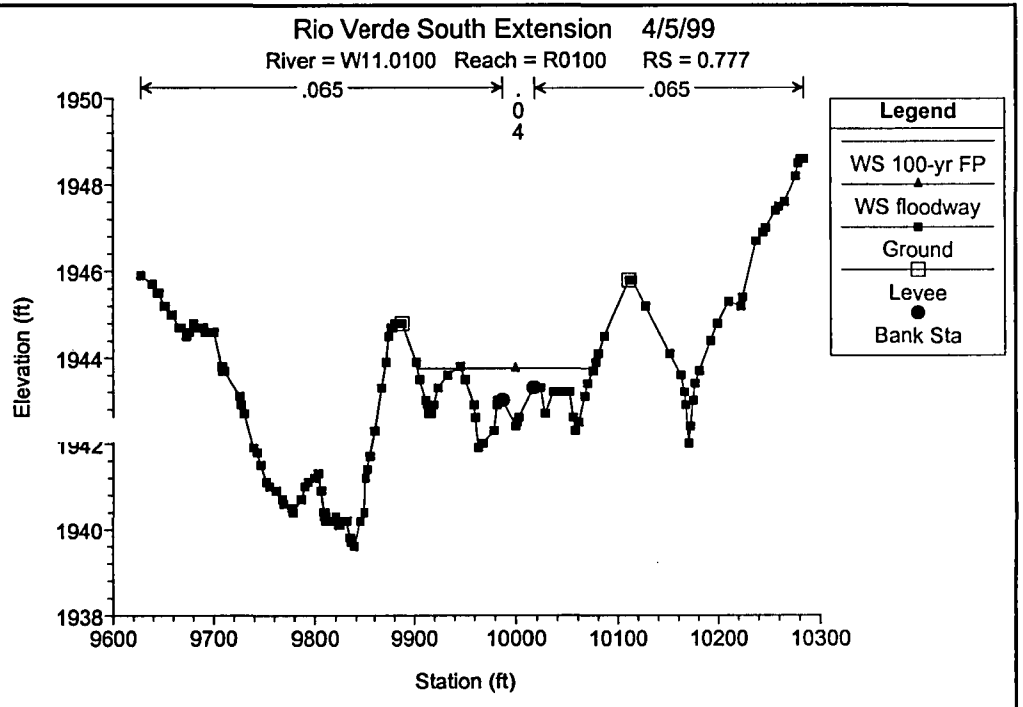

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 1.316
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Elevation (ft)
Station (ft)

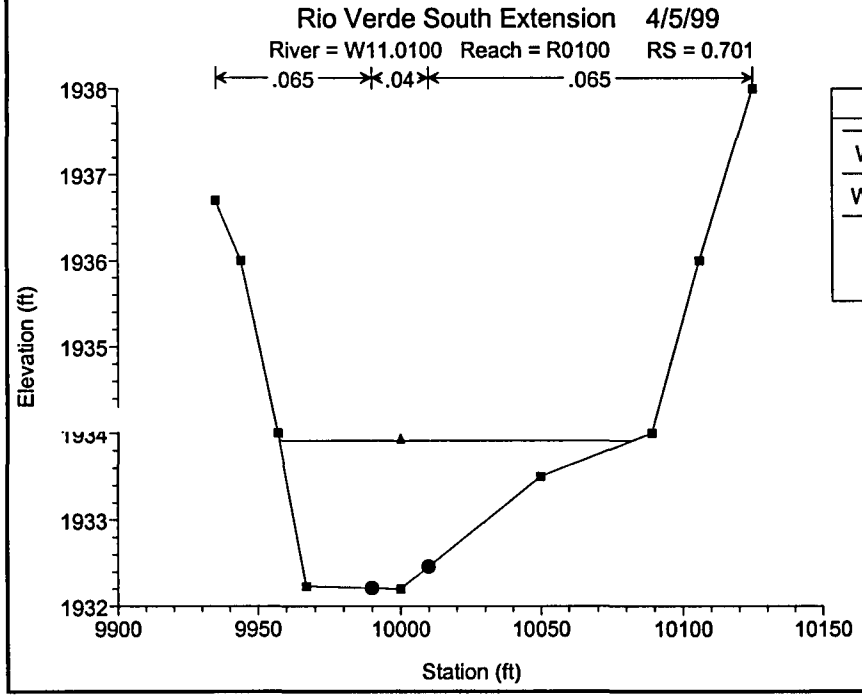

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 1.221
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

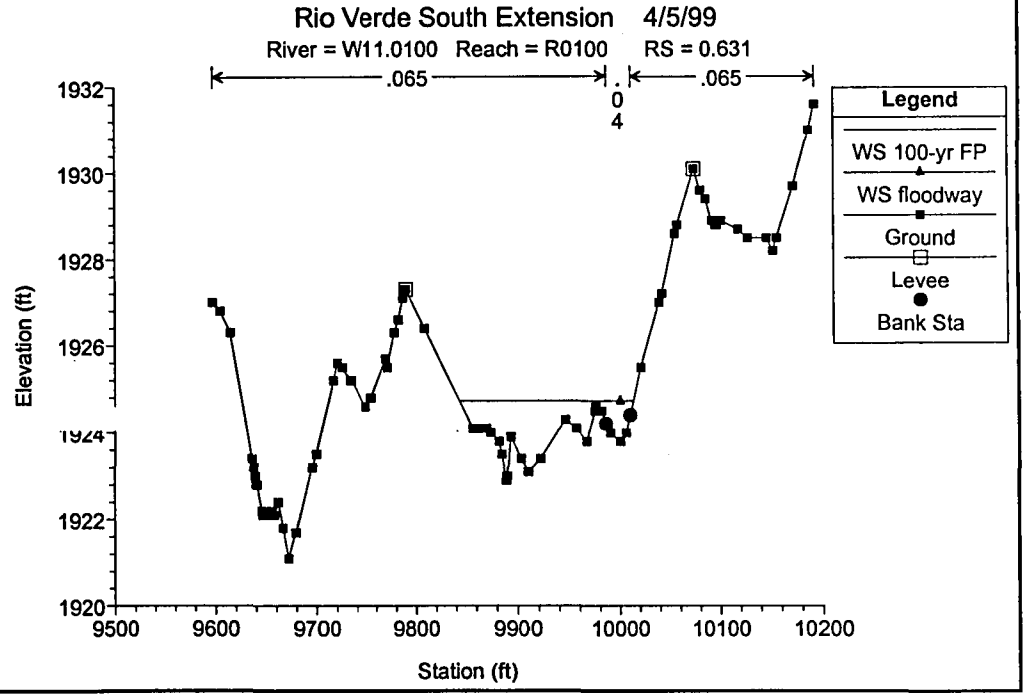

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 1.144
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

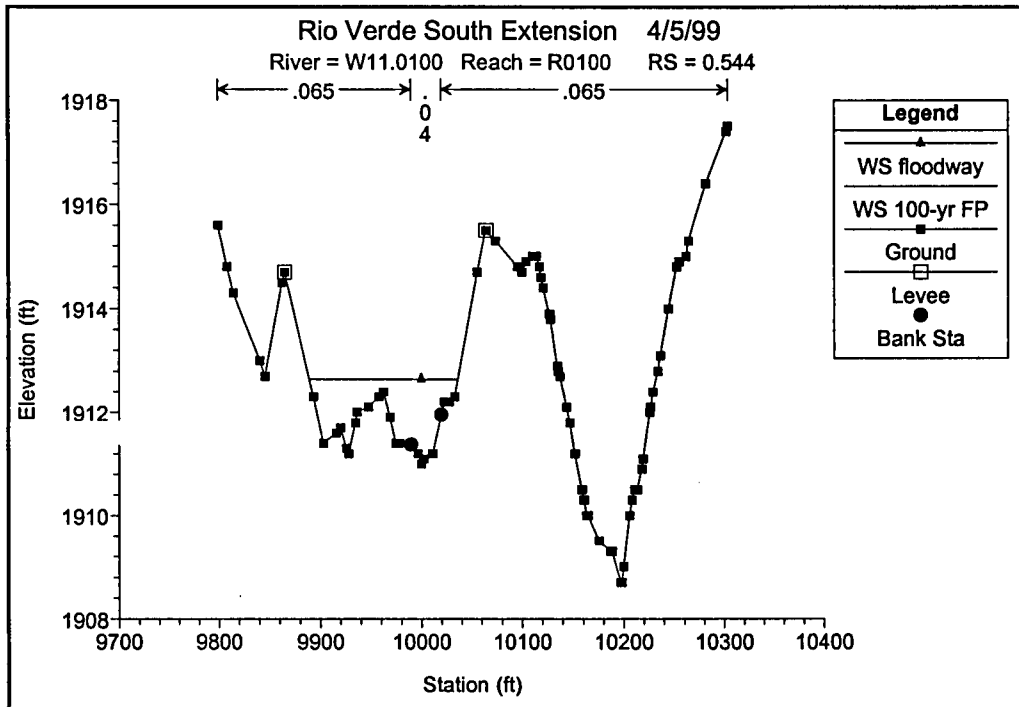

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 1.050
.065
.065
0
4
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 0.963
.065
.065
0
4
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 0.888
.065
.065
0
4
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 0.871
.065
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

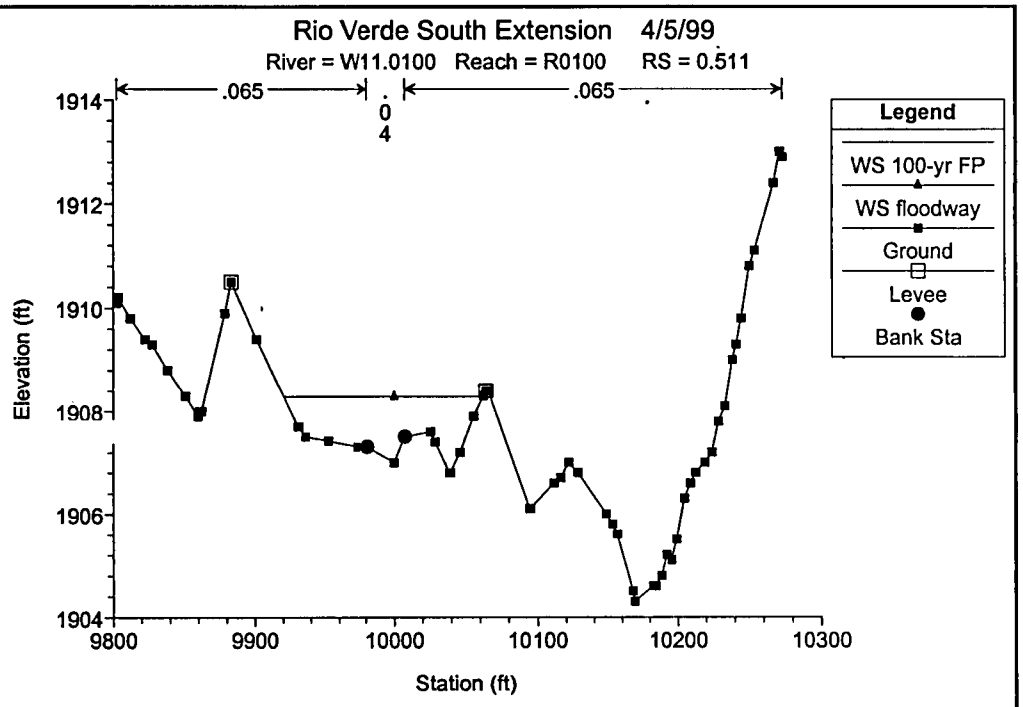

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 0.847
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

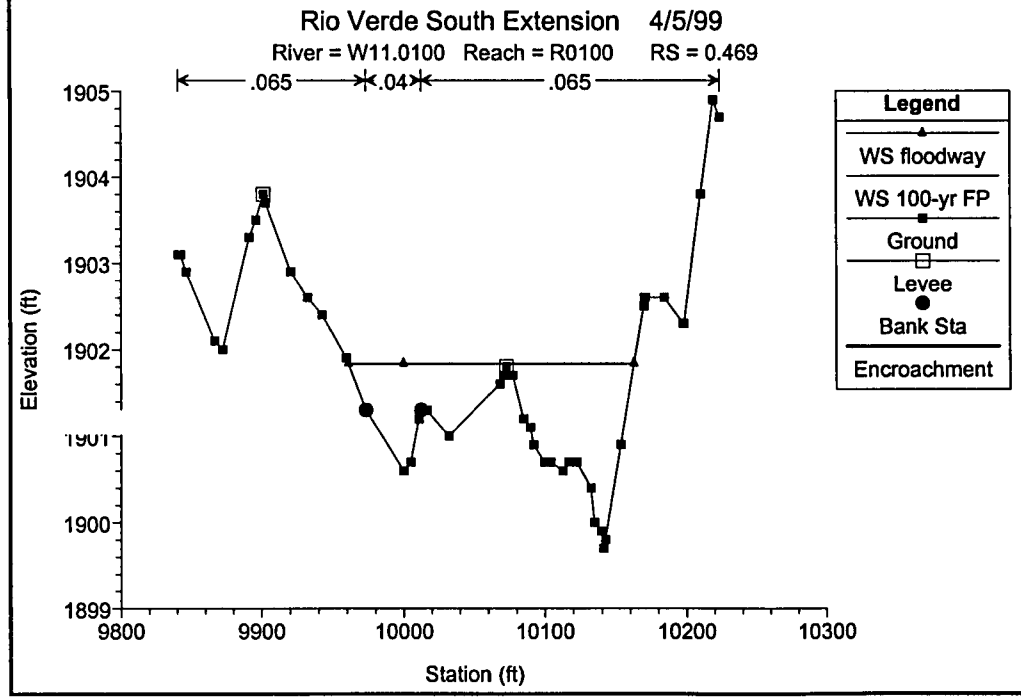

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 0.777
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

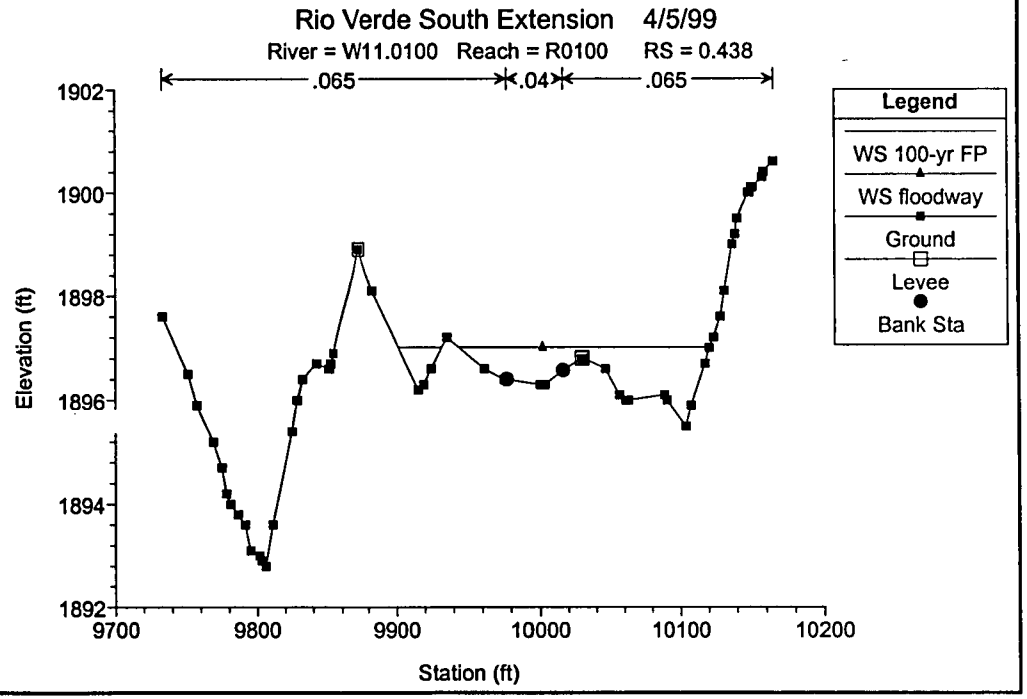

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 0.701
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

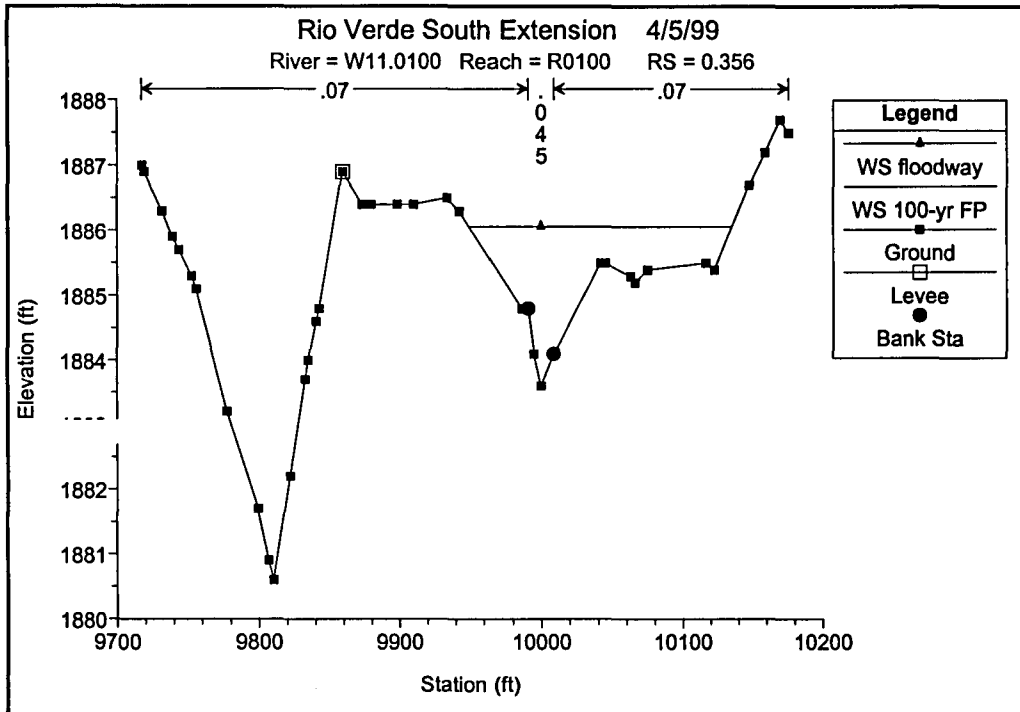

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 0.631
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

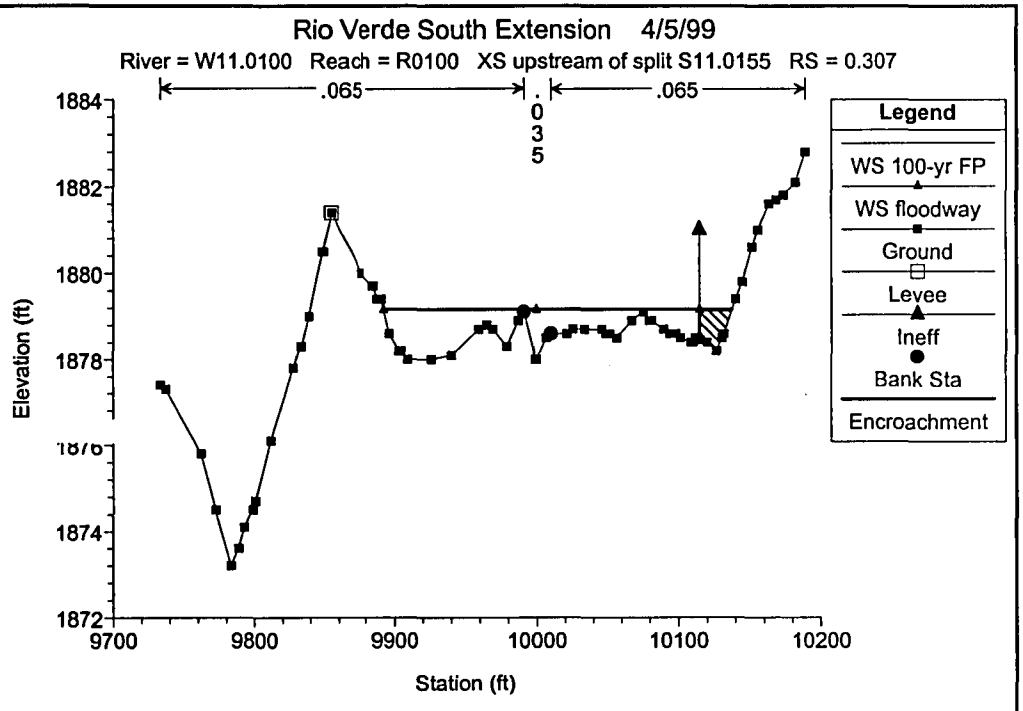

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 0.544
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

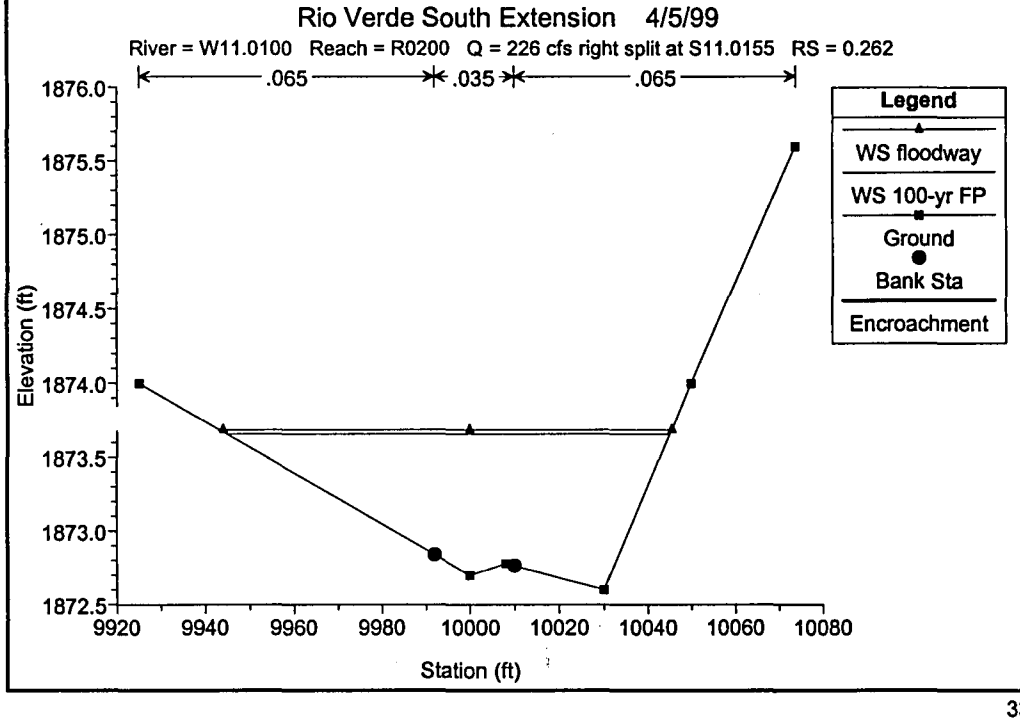

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 0.511
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

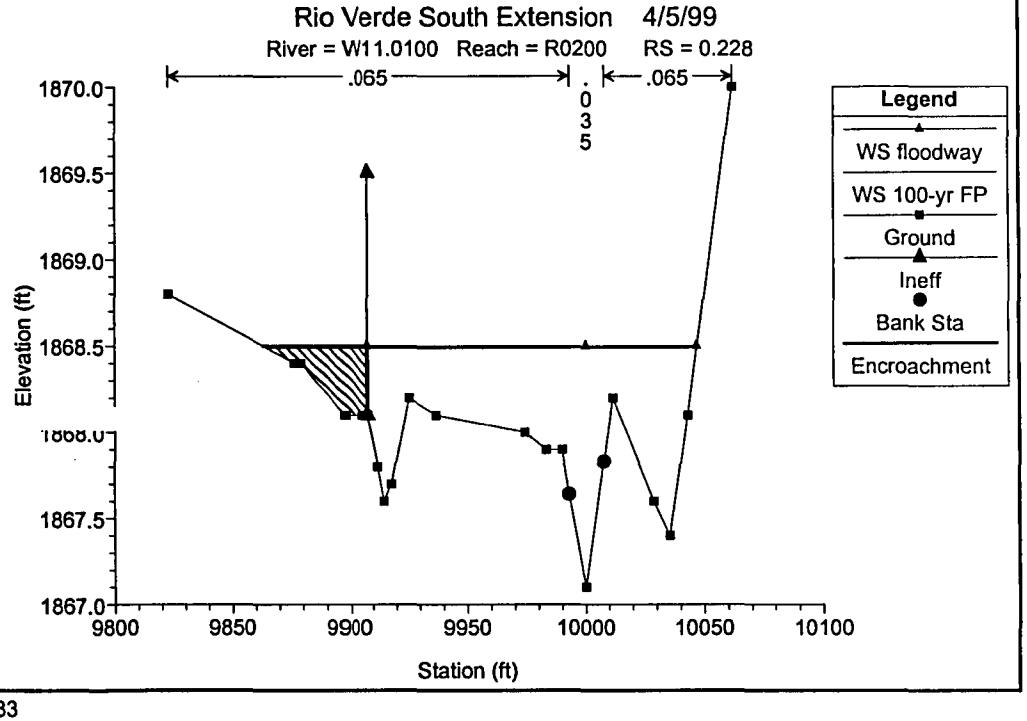

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 0.469
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

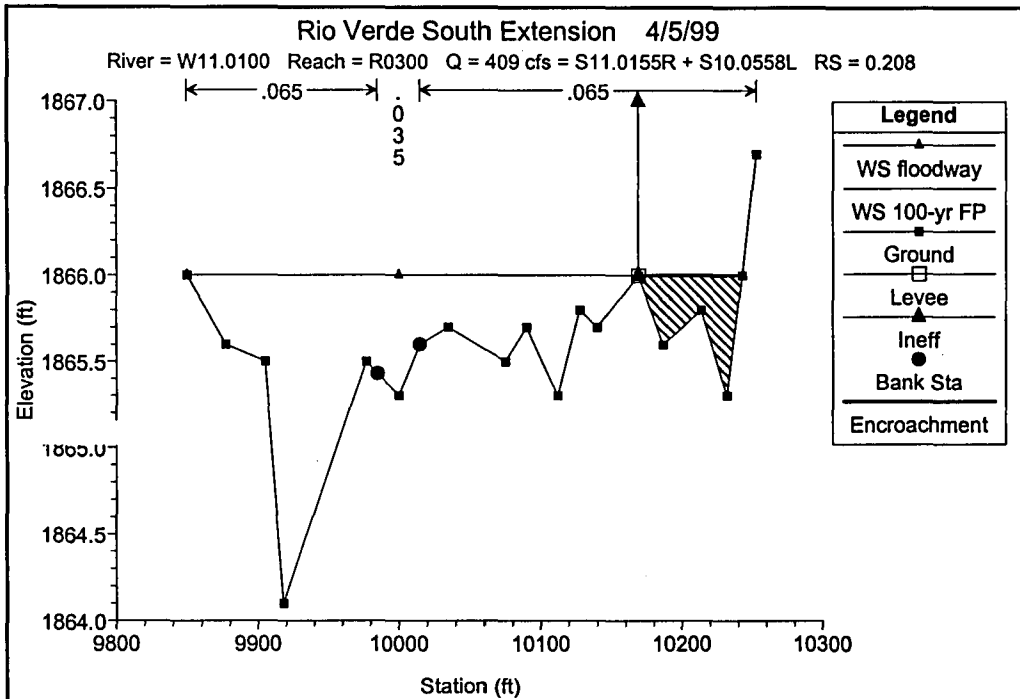

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 0.438
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

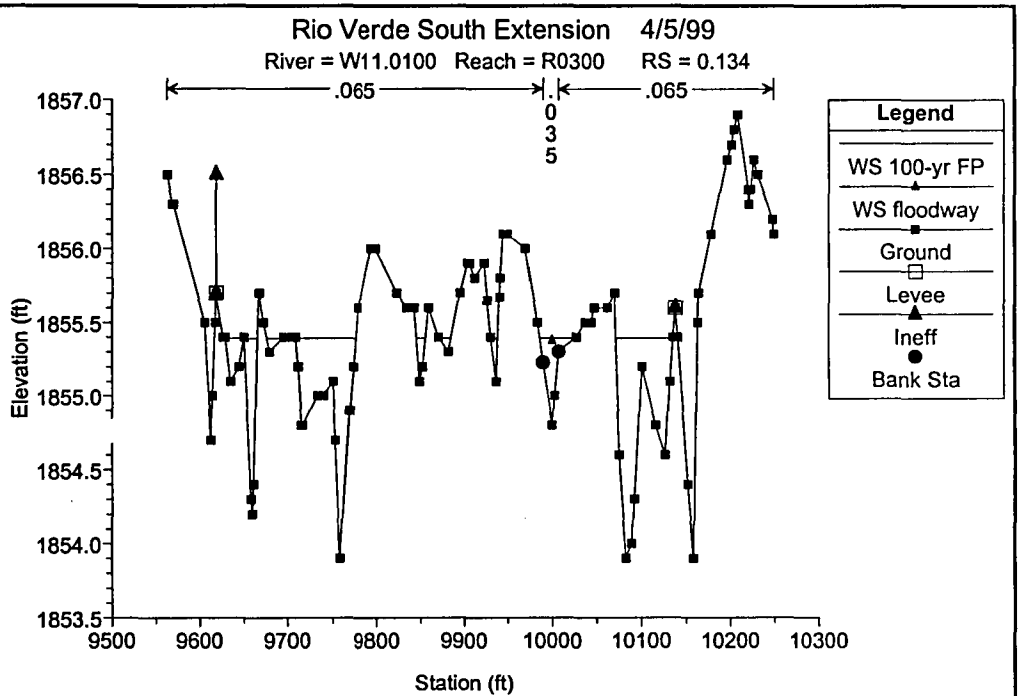

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 RS = 0.356
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

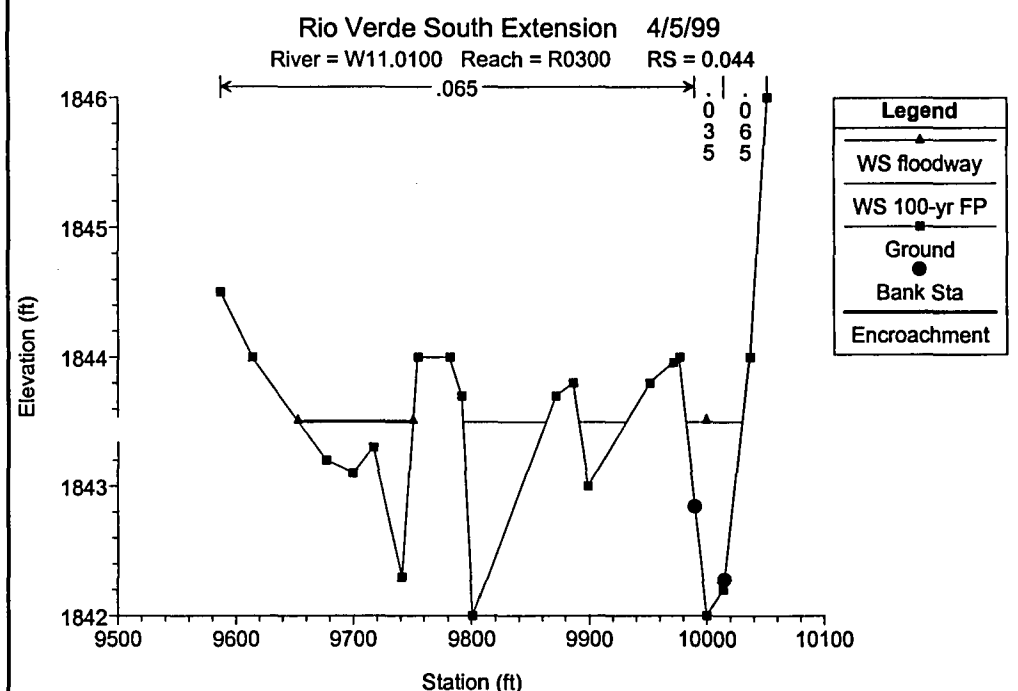

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0100 XS upstream of split S11.0155 RS = 0.307
.065
.035
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

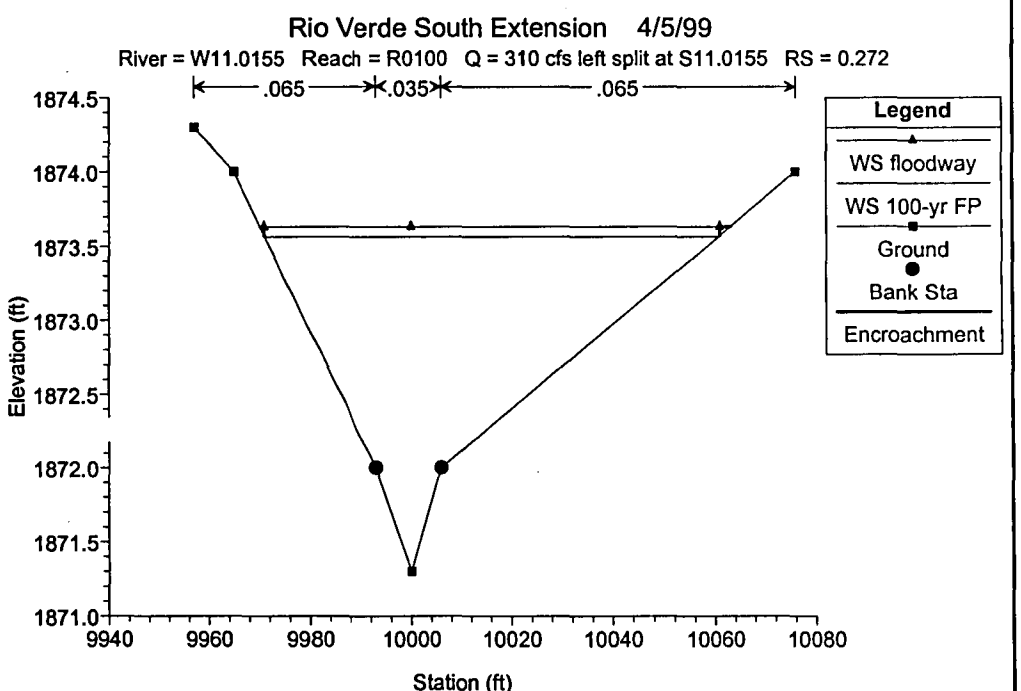

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0200 Q = 226 cfs right split at S11.0155 RS = 0.262
.065
.035
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

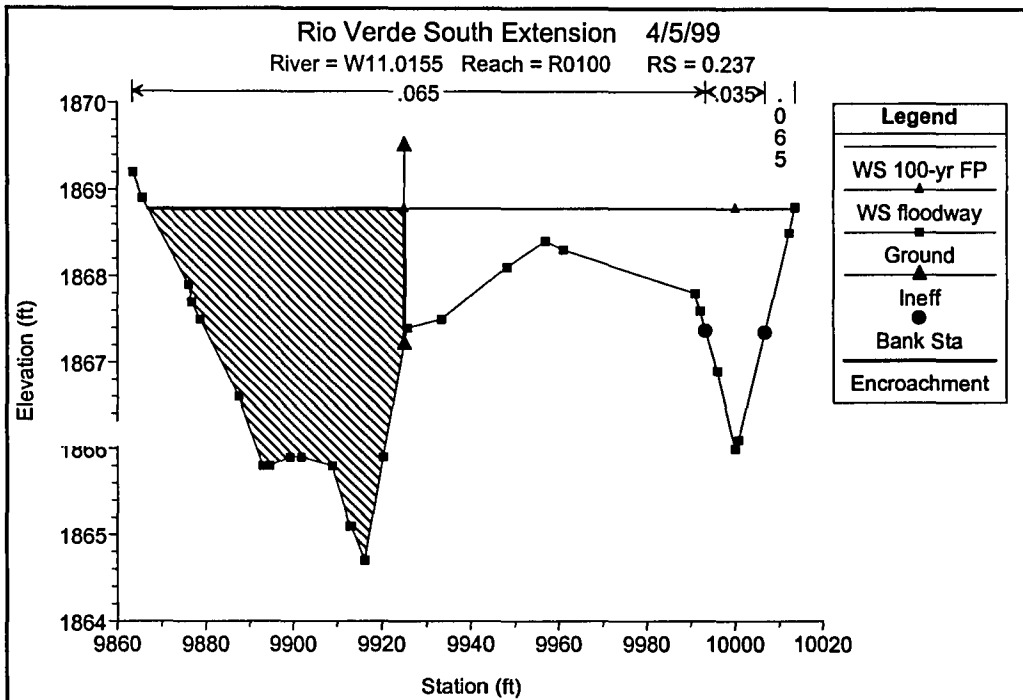

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0200 RS = 0.228
.065
.035
.065
Legend
WS floodway
WS 100-yr FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

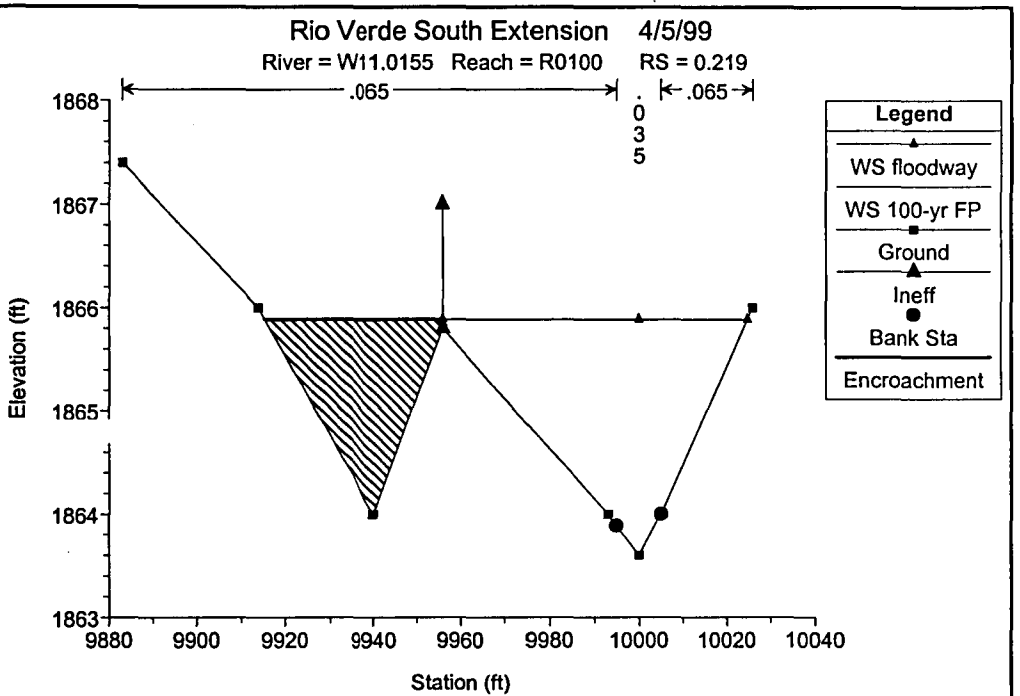

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0300 Q = 409 cfs = S11.0155R + S10.0558L RS = 0.208
.065
.035
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

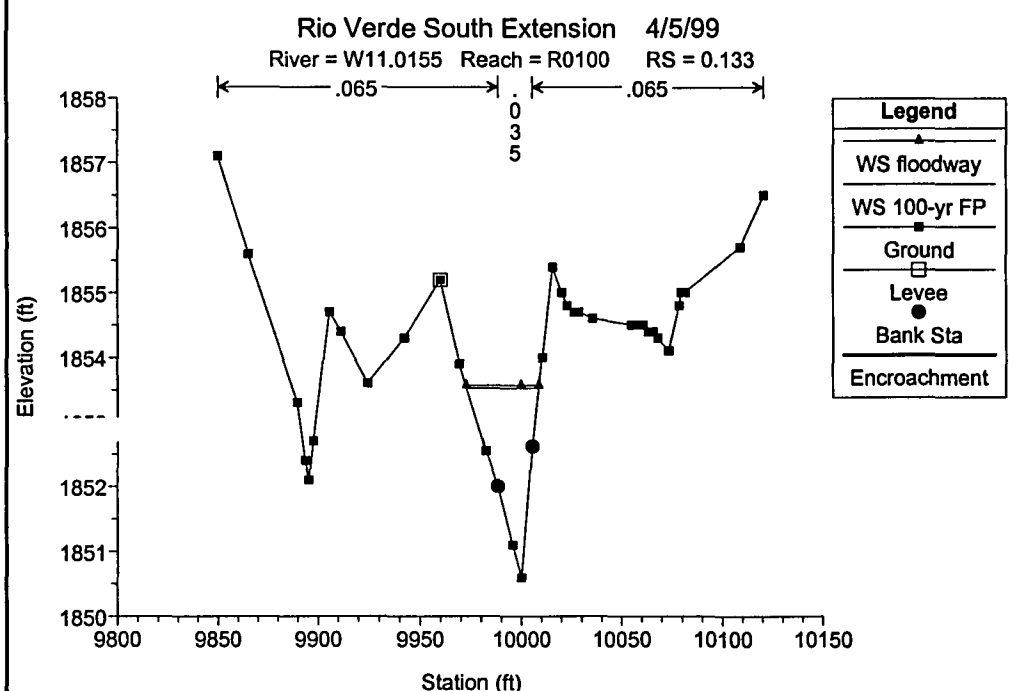

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0300 RS = 0.134
.065
.035
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

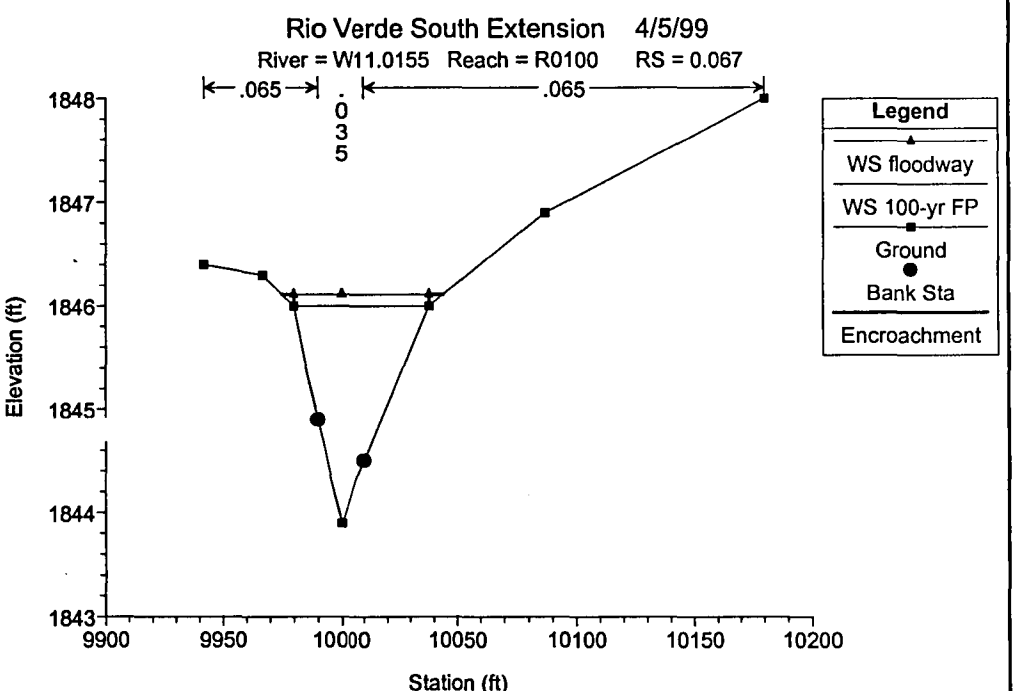

Rio Verde South Extension 4/5/99
River = W11.0100 Reach = R0300 RS = 0.044
.065
.035
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

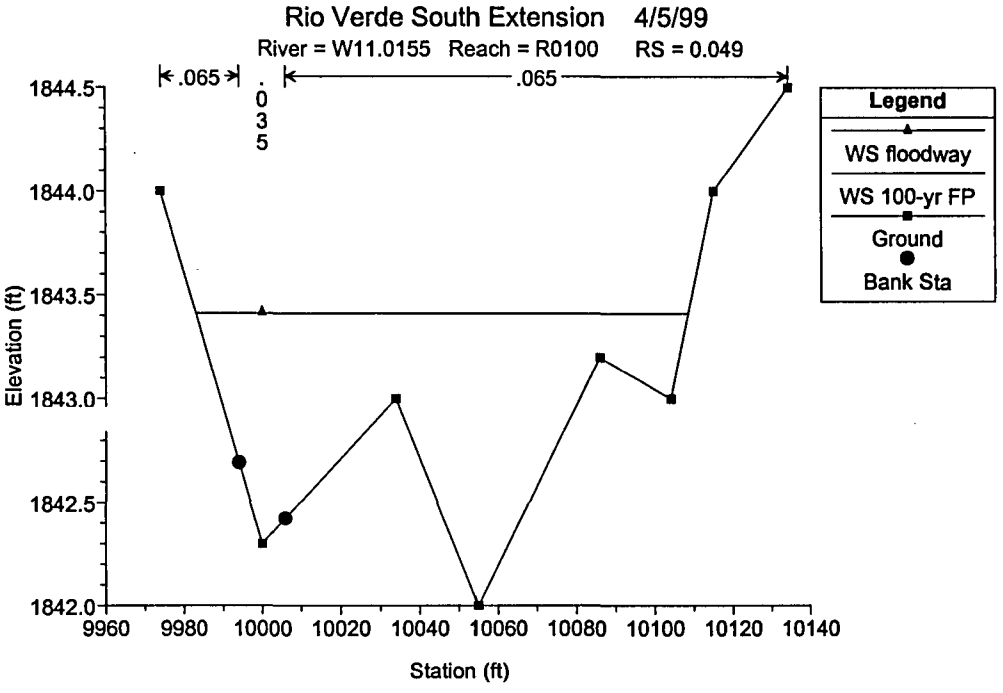

Rio Verde South Extension 4/5/99
River = W11.0155 Reach = R0100 Q = 310 cfs left split at S11.0155 RS = 0.272
.065
.035
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

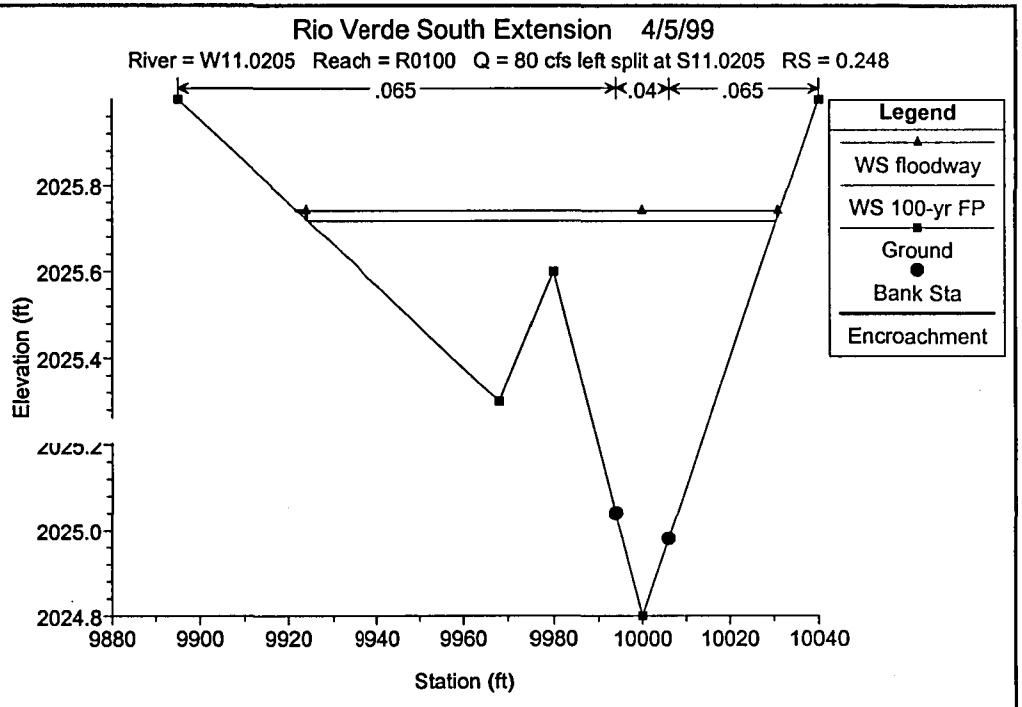

Rio Verde South Extension 4/5/99
River = W11.0155 Reach = R0100 RS = 0.237
.065
.035
.065
Legend
WS 100-yr FP
WS floodway
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

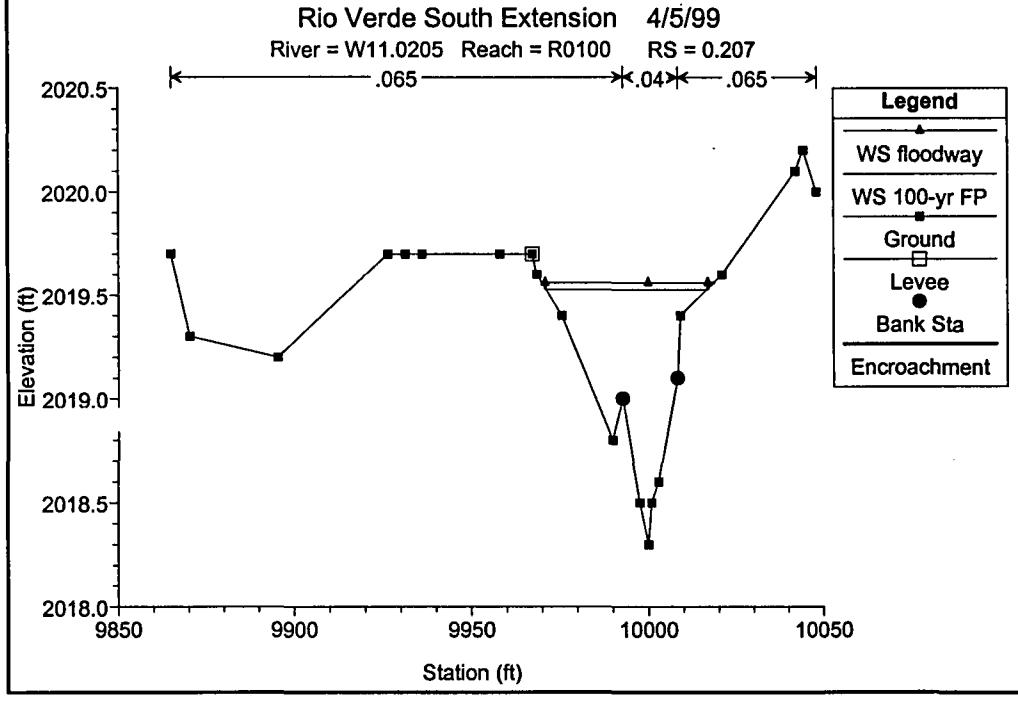

Rio Verde South Extension 4/5/99
River = W11.0155 Reach = R0100 RS = 0.219
.065
.035
.065
Legend
WS floodway
WS 100-yr FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

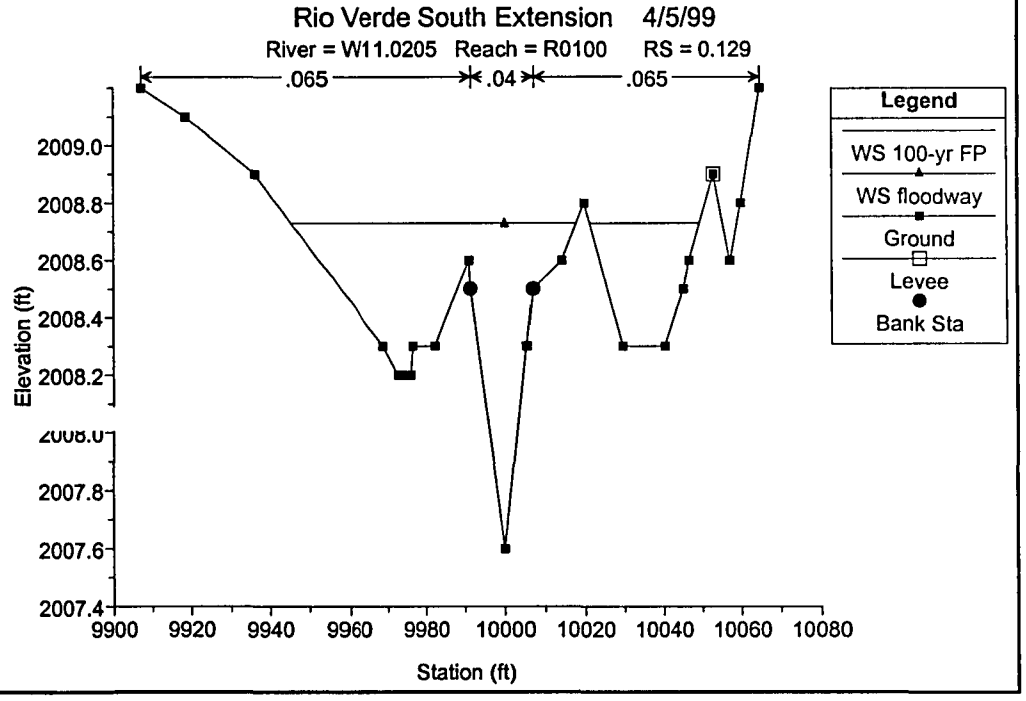

Rio Verde South Extension 4/5/99
River = W11.0155 Reach = R0100 RS = 0.133
.065
.035
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

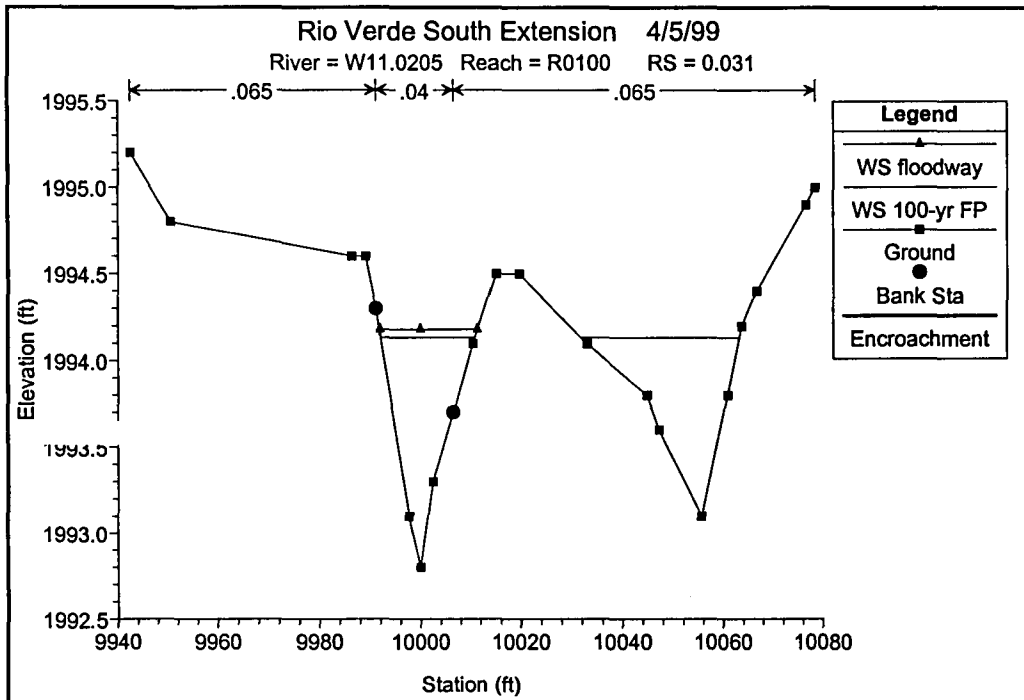

Rio Verde South Extension 4/5/99
River = W11.0155 Reach = R0100 RS = 0.067
.065
.035
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

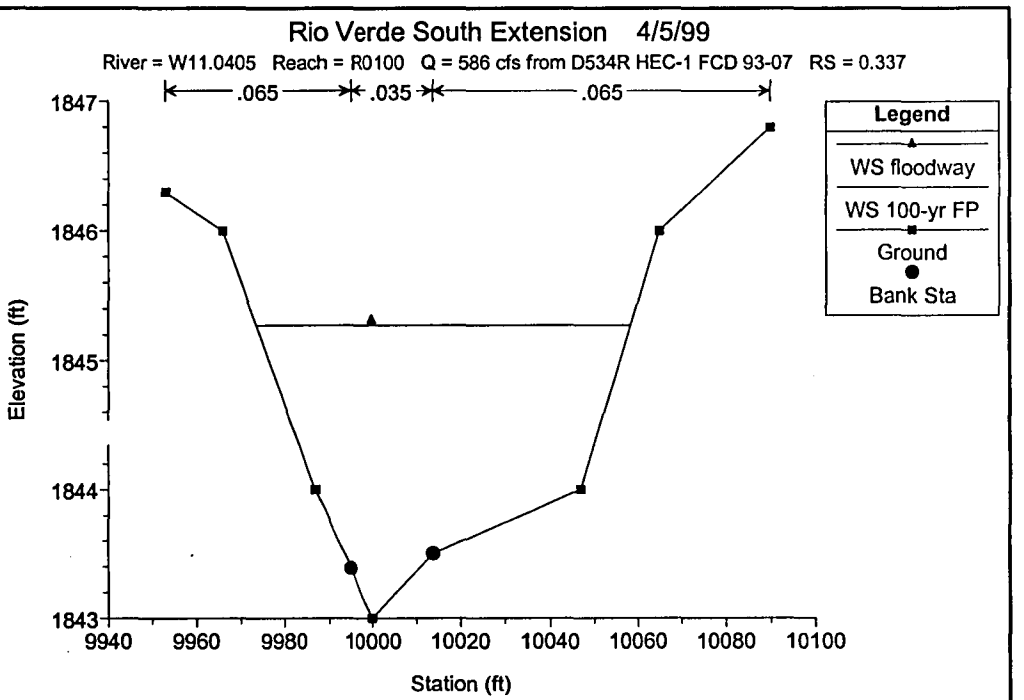

Rio Verde South Extension 4/5/99
River = W11.0155 Reach = R0100 RS = 0.049
.065
.035
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

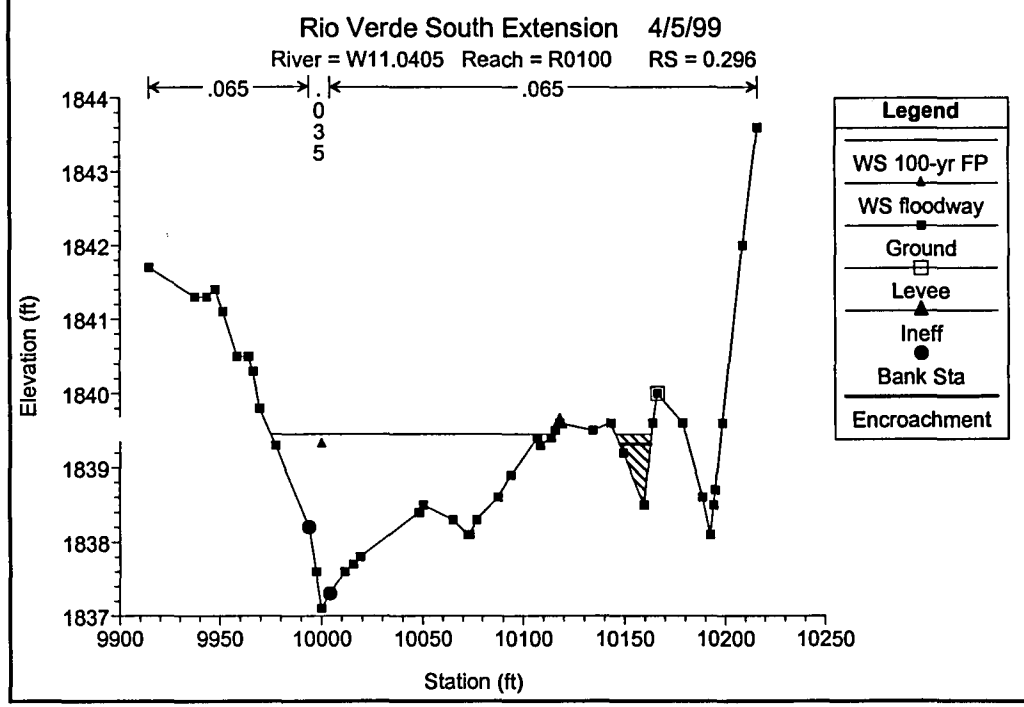

Rio Verde South Extension 4/5/99
River = W11.0205 Reach = R0100 Q = 80 cfs left split at S11.0205 RS = 0.248
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

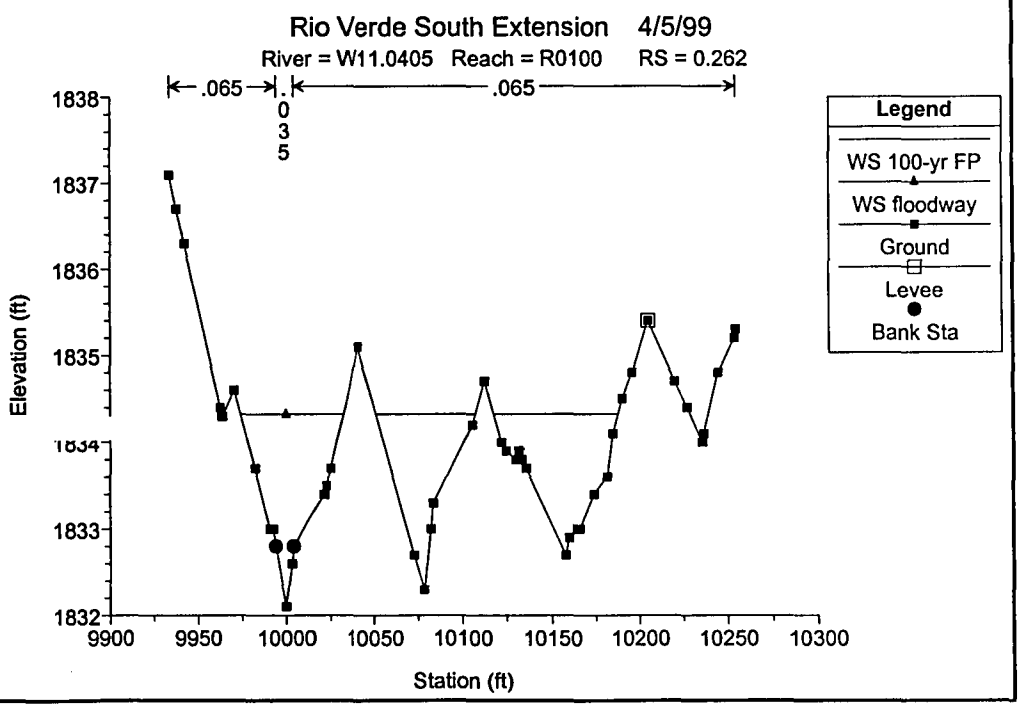

Rio Verde South Extension 4/5/99
River = W11.0205 Reach = R0100 RS = 0.207
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

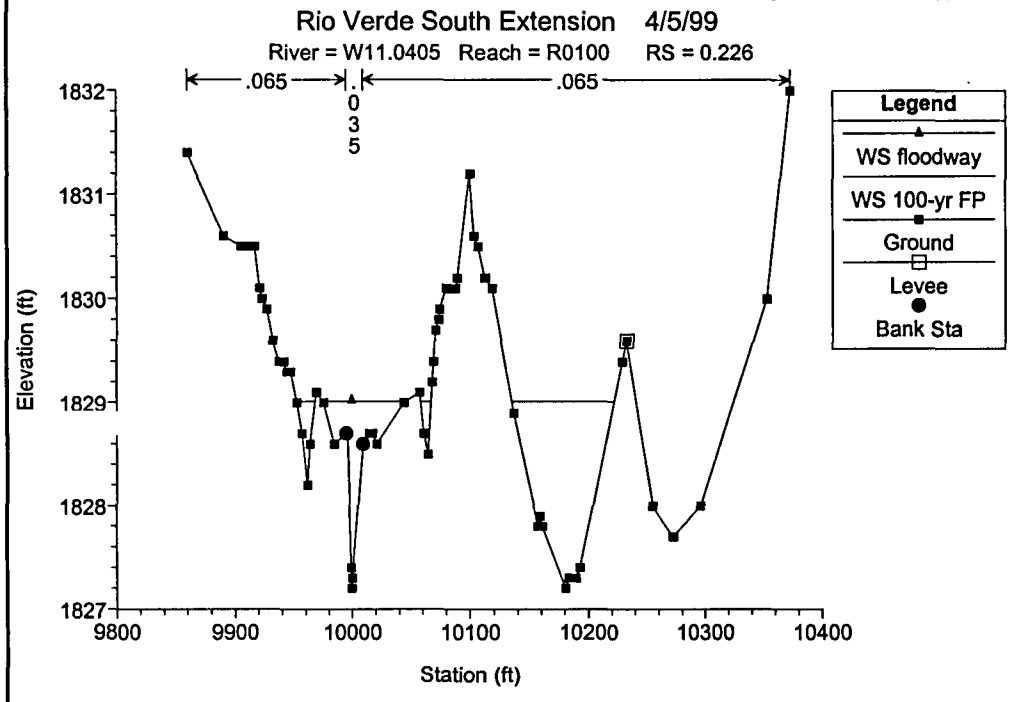

Rio Verde South Extension 4/5/99
River = W11.0205 Reach = R0100 RS = 0.129
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

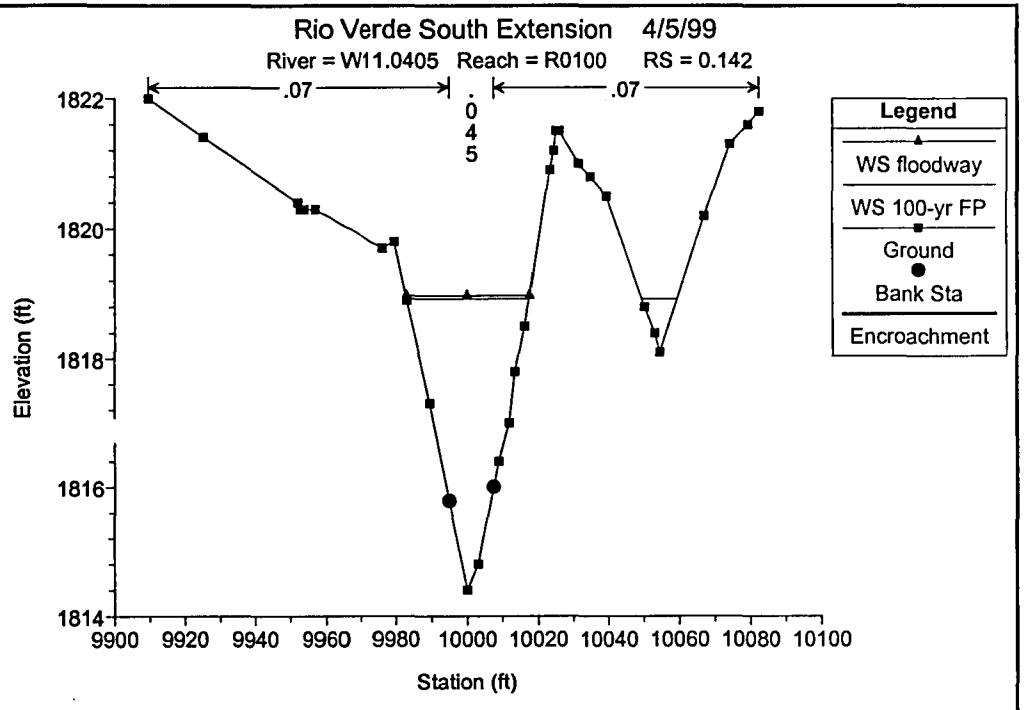

Rio Verde South Extension 4/5/99
River = W11.0205 Reach = R0100 RS = 0.031
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

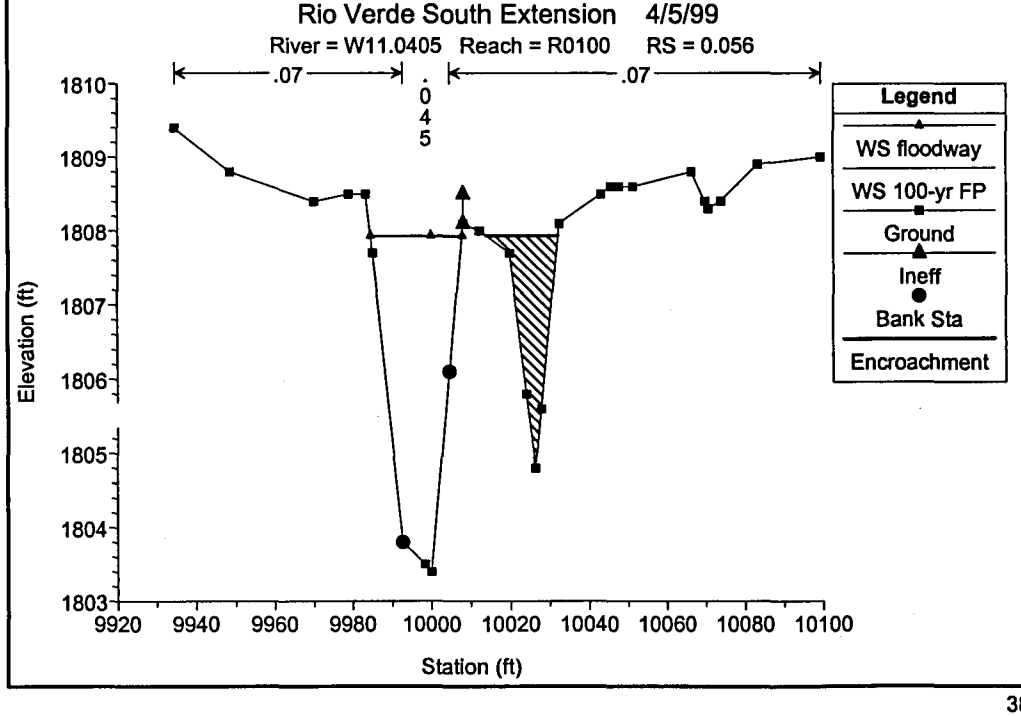

Rio Verde South Extension 4/5/99
River = W11.0405 Reach = R0100 Q = 586 cfs from D534R HEC-1 FCD 93-07 RS = 0.337
.065
.035
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

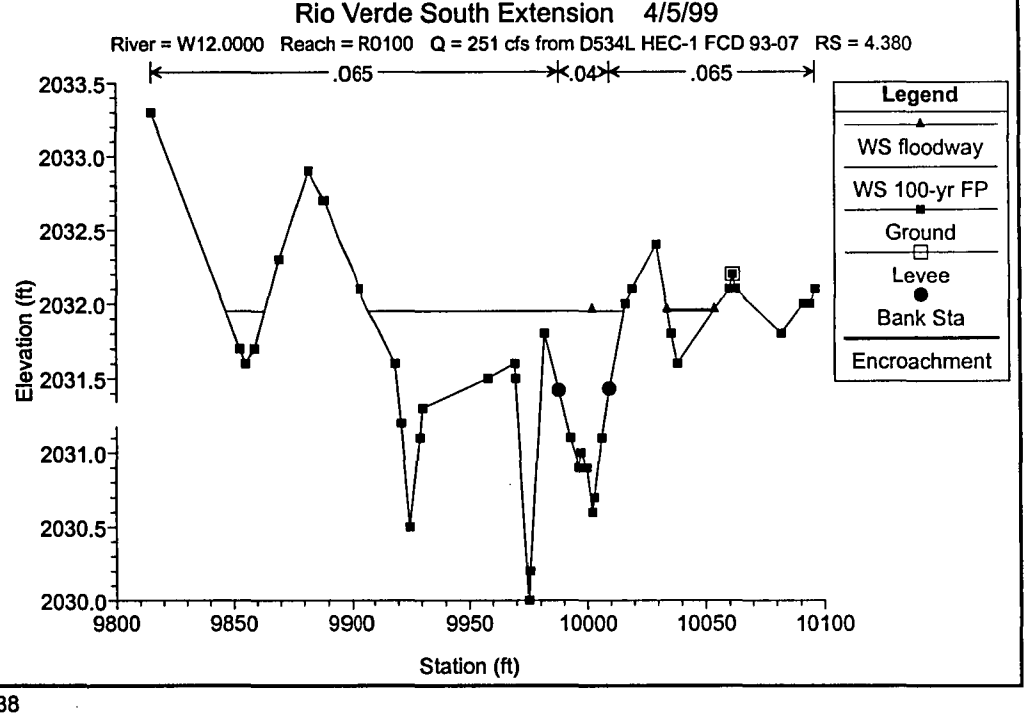

Rio Verde South Extension 4/5/99
River = W11.0405 Reach = R0100 RS = 0.296
.065
.035
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

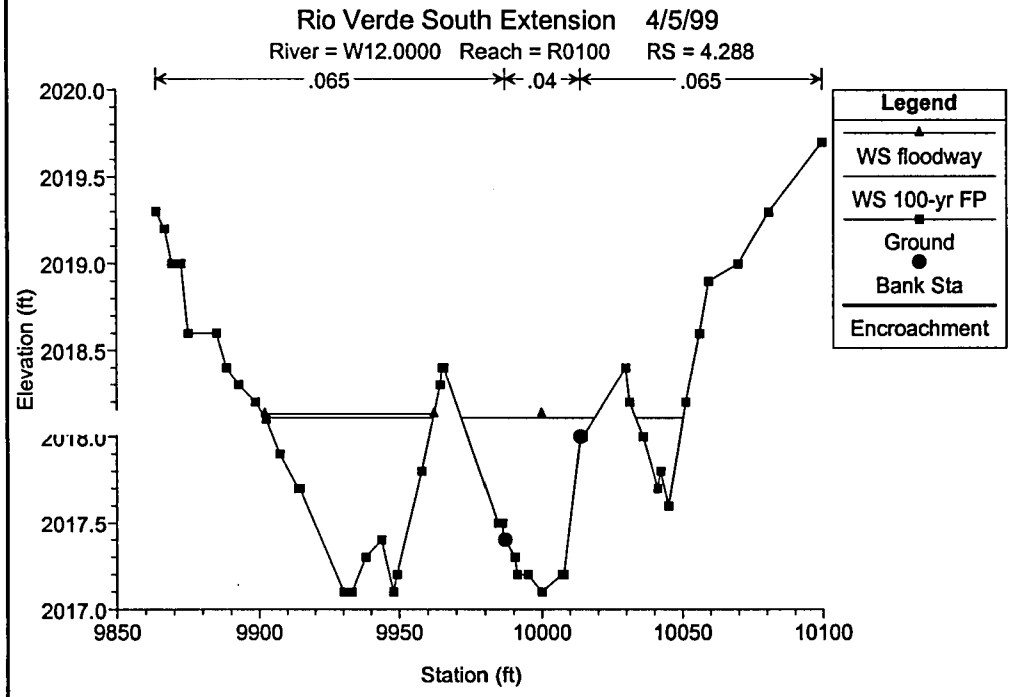

Rio Verde South Extension 4/5/99
River = W11.0405 Reach = R0100 RS = 0.262
.065
.035
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

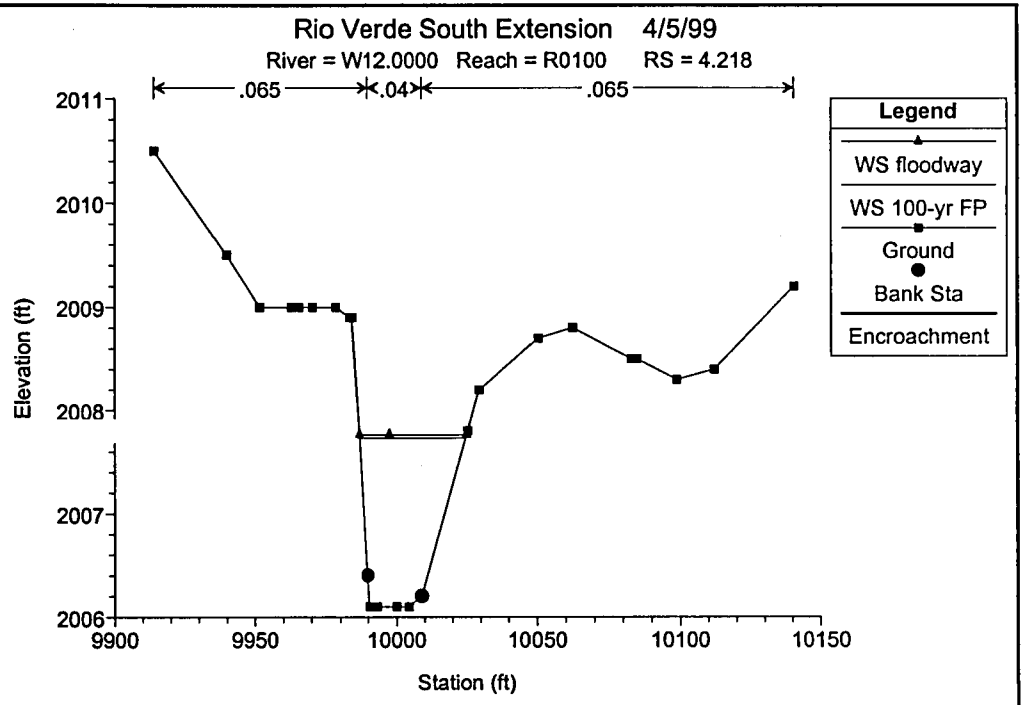

Rio Verde South Extension 4/5/99
River = W11.0405 Reach = R0100 RS = 0.226
.065
.035
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

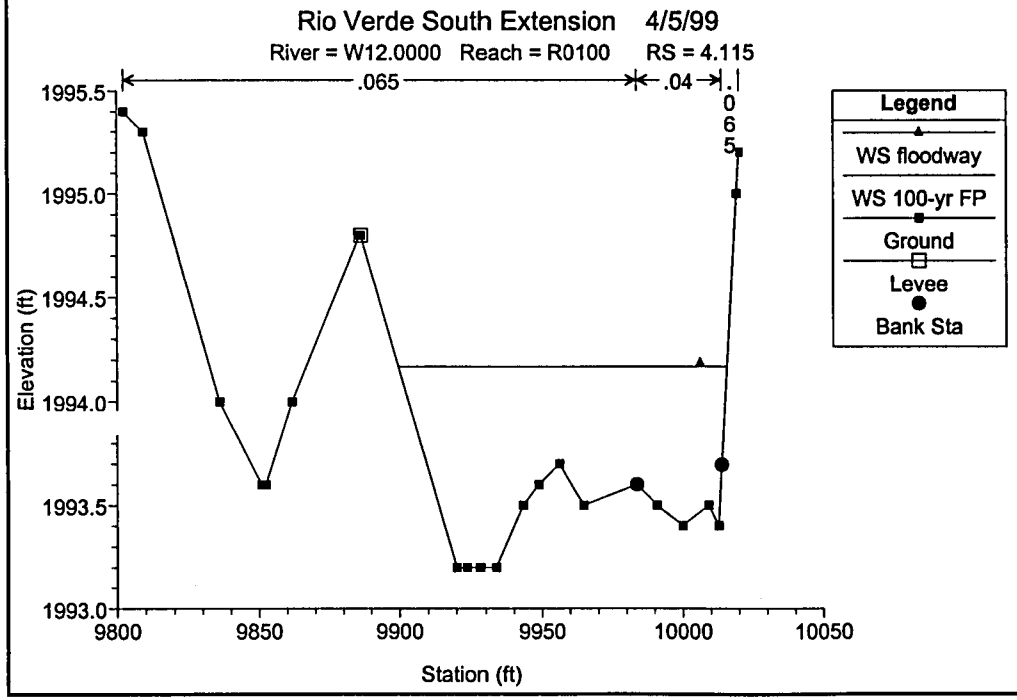

Rio Verde South Extension 4/5/99
River = W11.0405 Reach = R0100 RS = 0.142
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

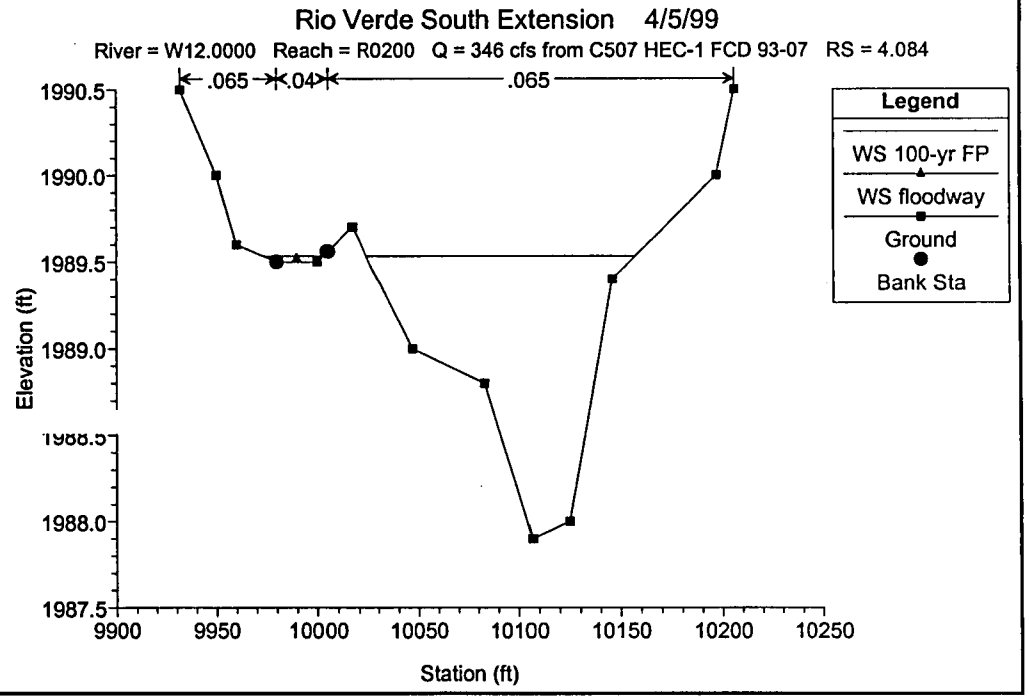

Rio Verde South Extension 4/5/99
River = W11.0405 Reach = R0100 RS = 0.056
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

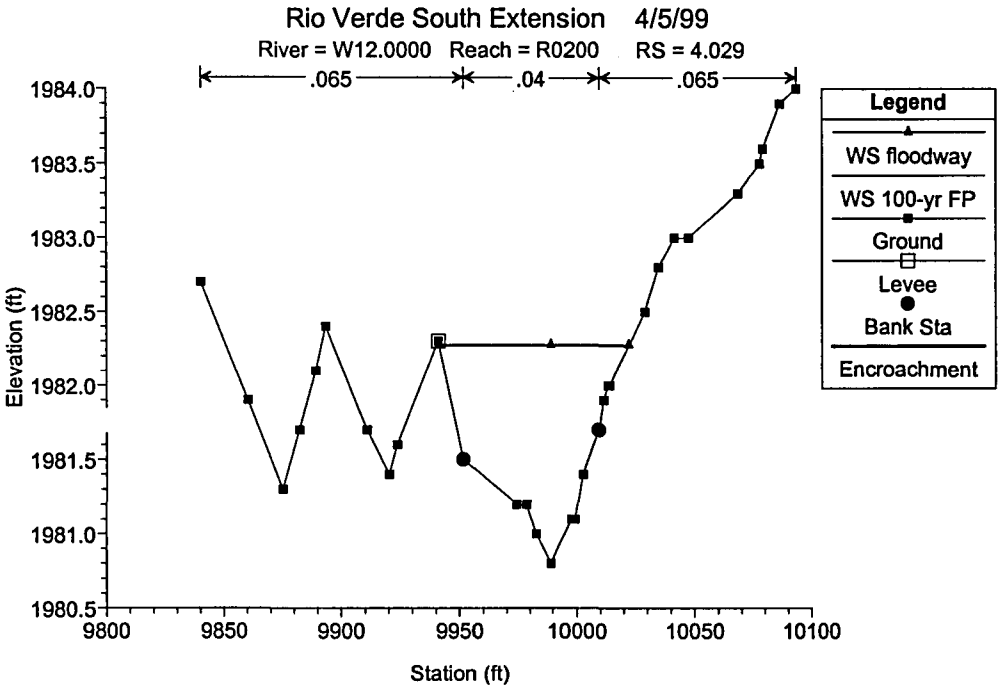

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0100 Q = 251 cfs from D534L HEC-1 FCD 93-07 RS = 4.380
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

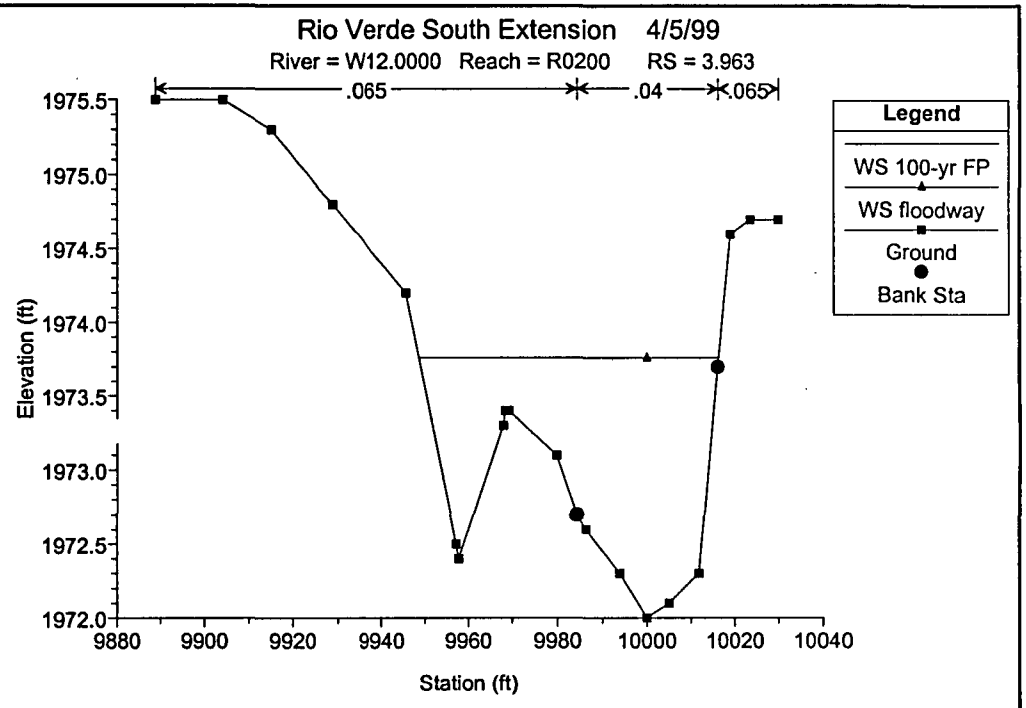

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0100 RS = 4.288
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

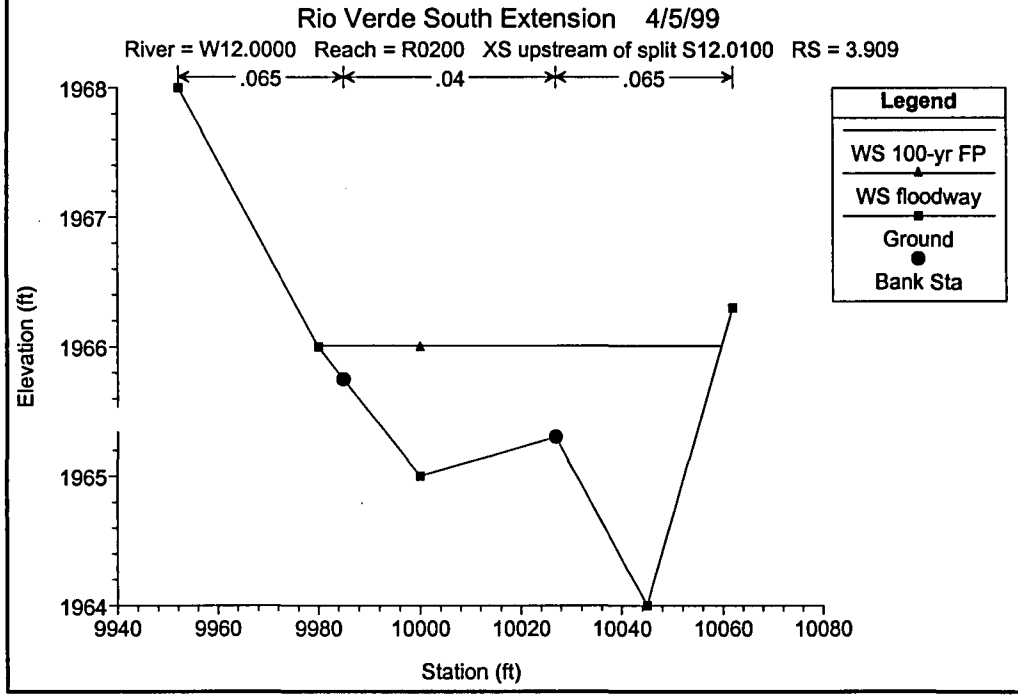

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0100 RS = 4.218
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

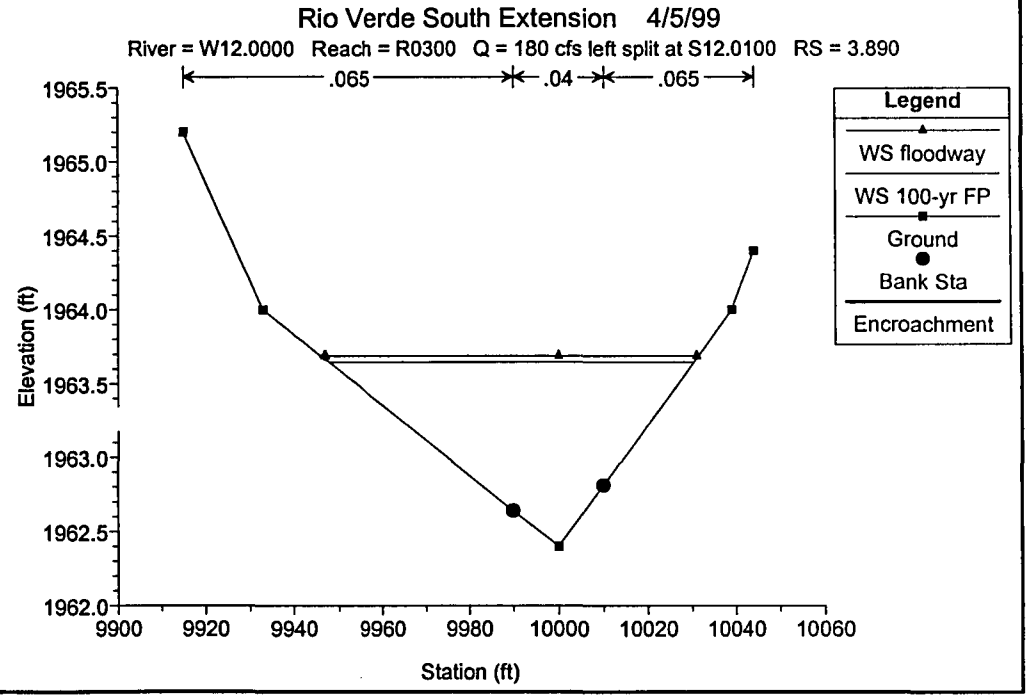

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0100 RS = 4.115
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

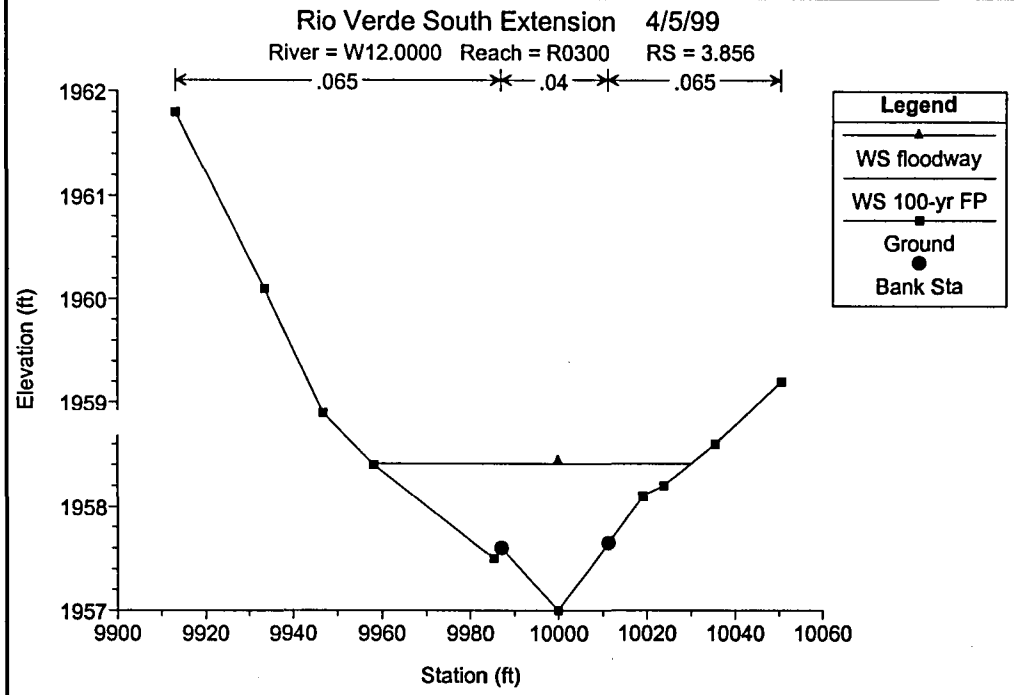

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0200 Q = 346 cfs from C507 HEC-1 FCD 93-07 RS = 4.084
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Elevation (ft)
Station (ft)

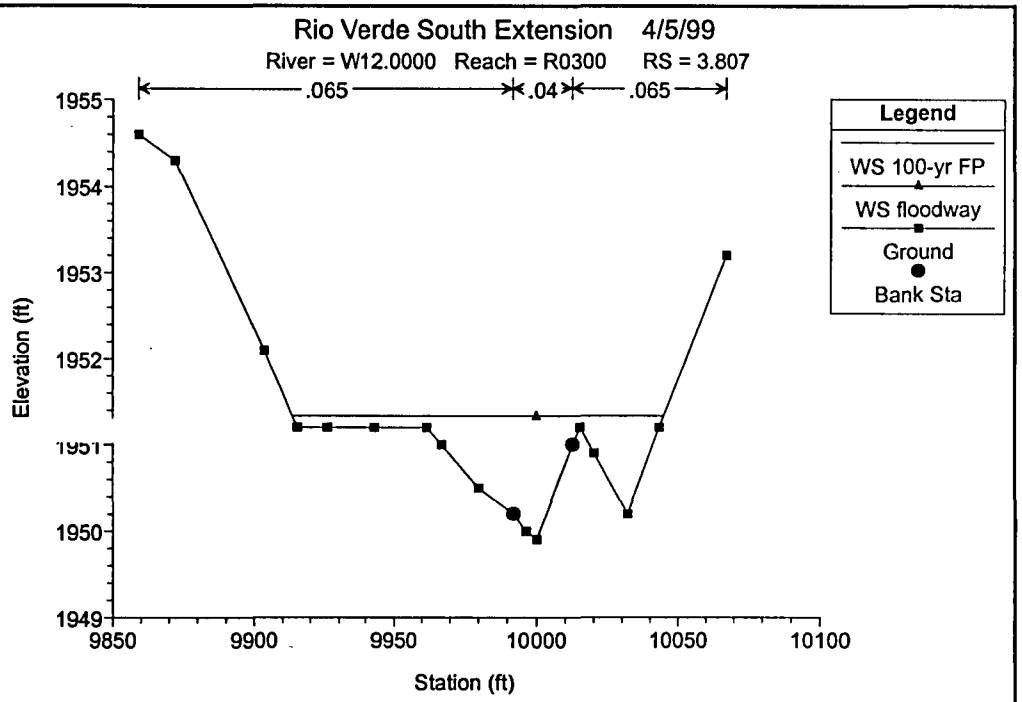

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0200 RS = 4.029
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

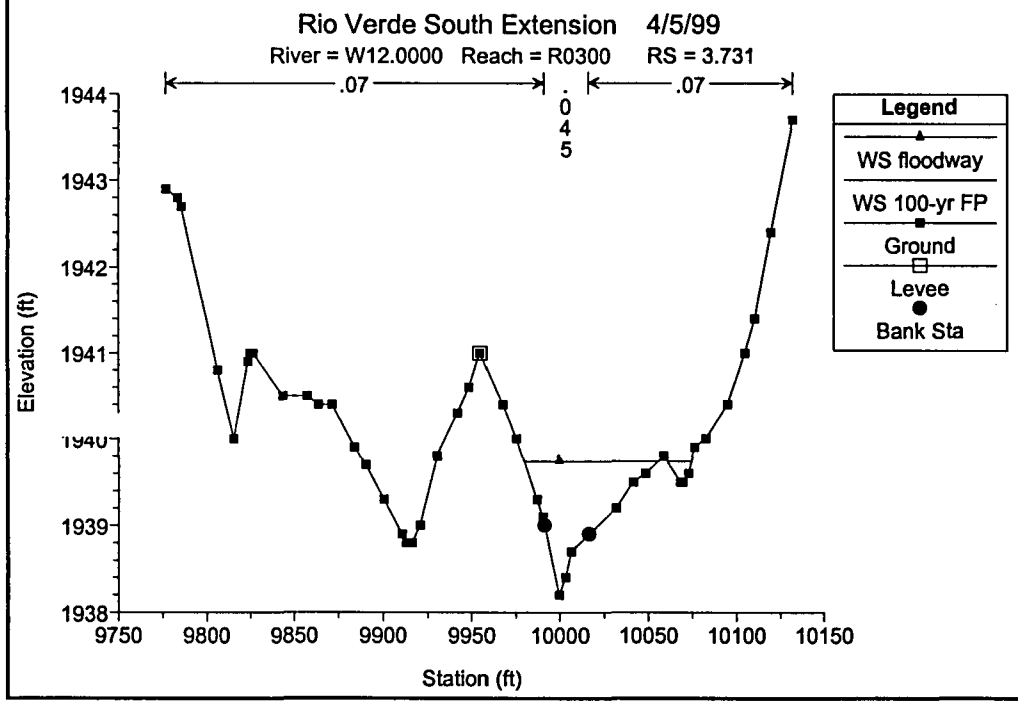

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0200 RS = 3.963
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Elevation (ft)
Station (ft)

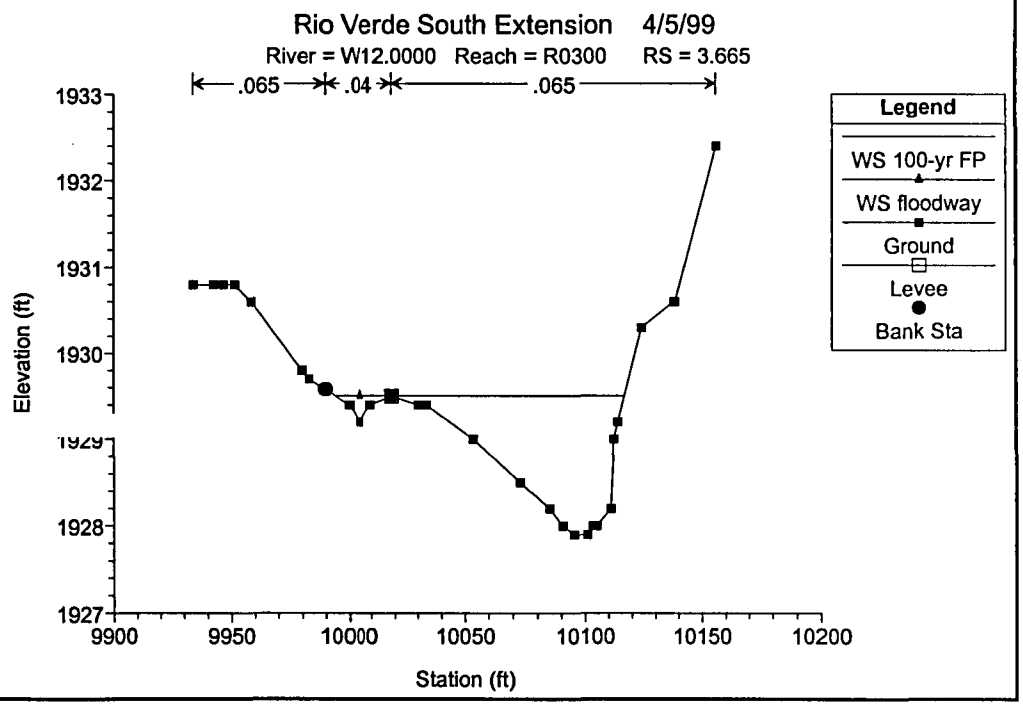

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0200 XS upstream of split S12.0100 RS = 3.909
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Elevation (ft)
Station (ft)

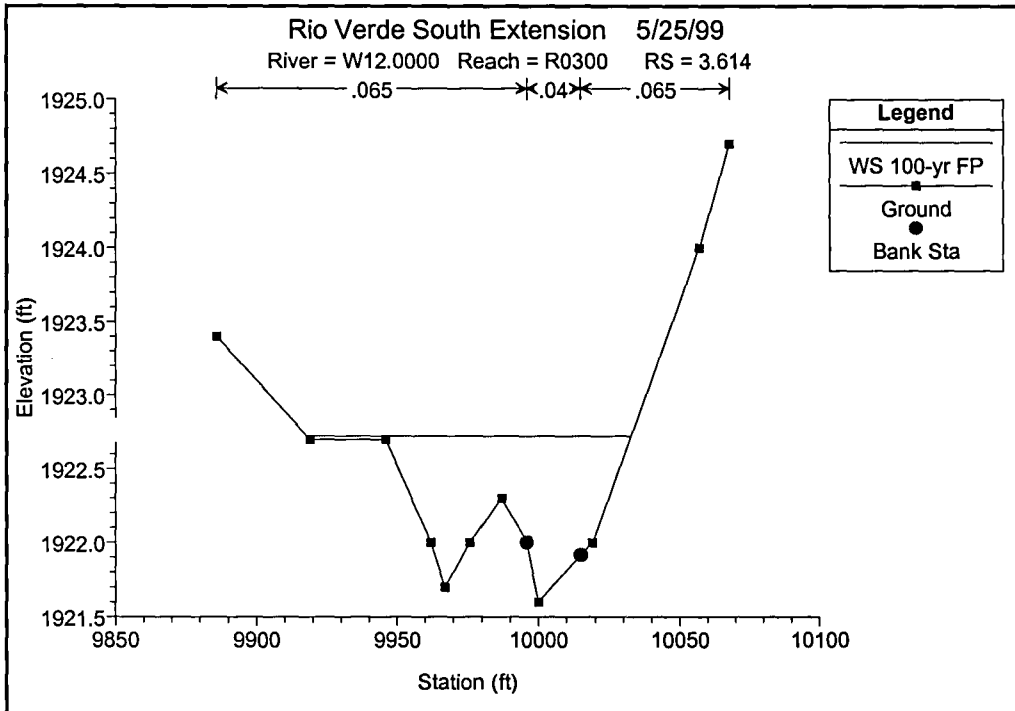

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0300 Q = 180 cfs left split at S12.0100 RS = 3.890
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

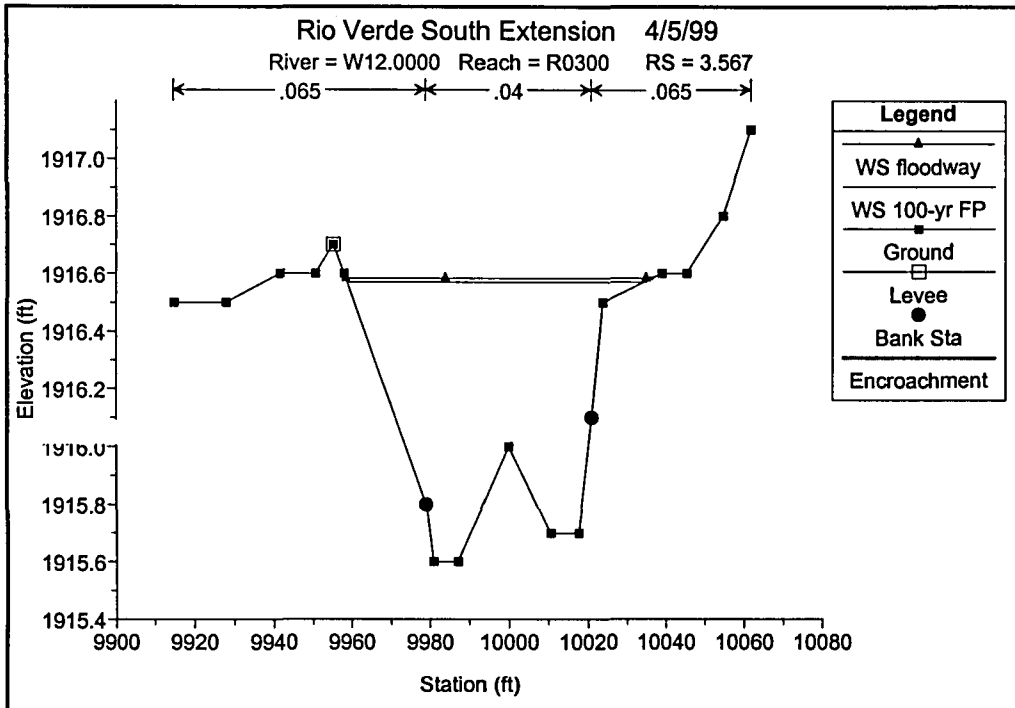

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0300 RS = 3.856
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

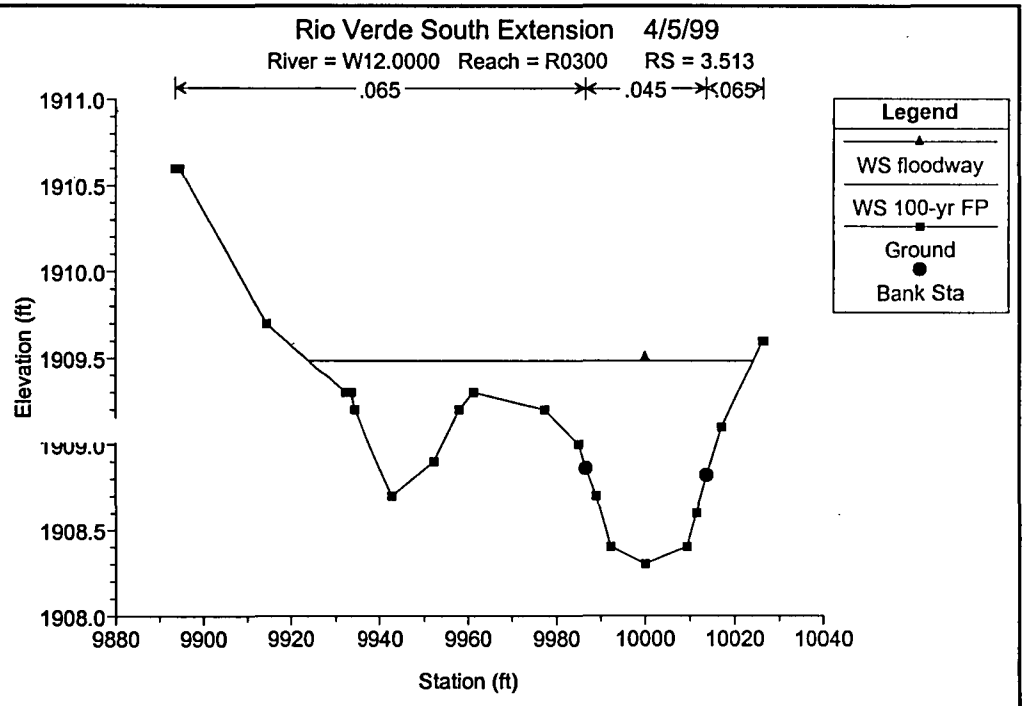

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0300 RS = 3.807
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Elevation (ft)
Station (ft)

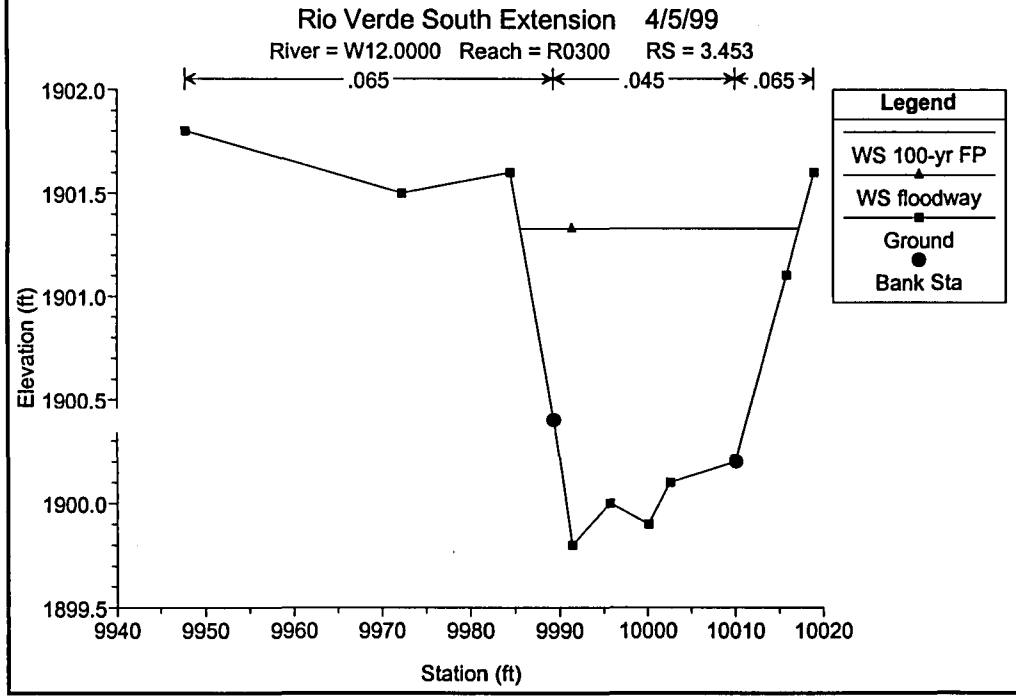

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0300 RS = 3.731
.07
.045
.07
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

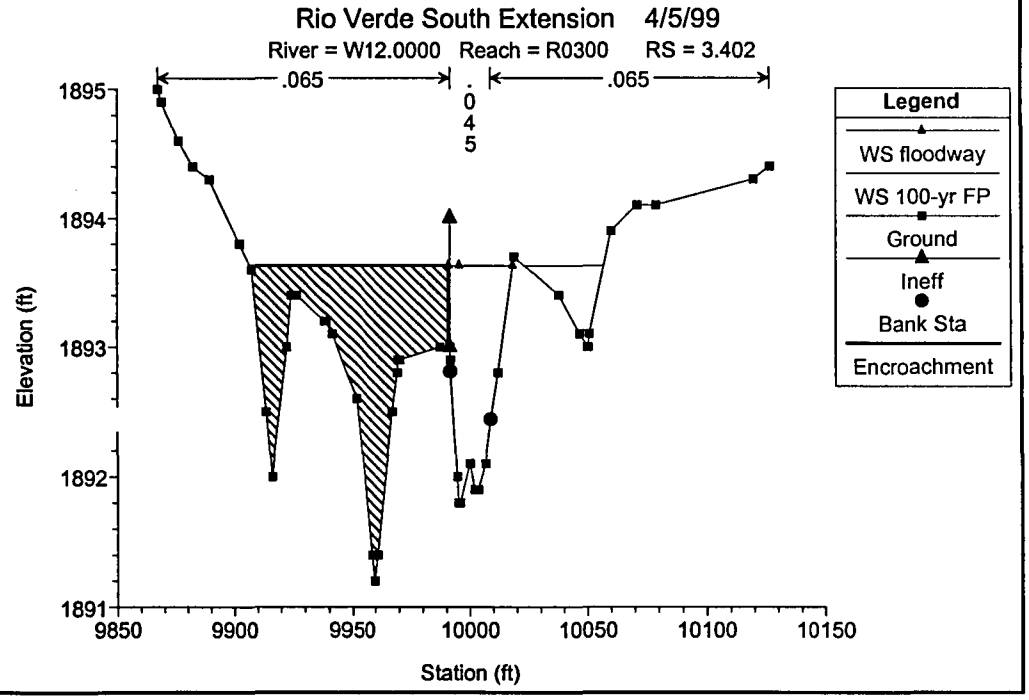

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0300 RS = 3.665
.065
.04
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

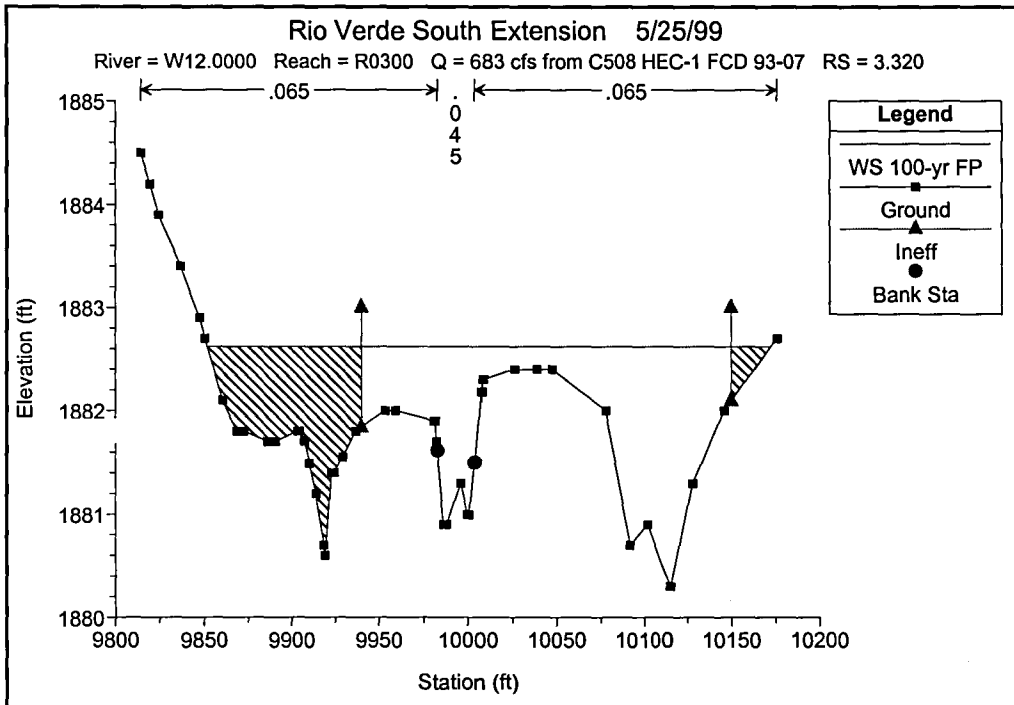

Rio Verde South Extension 5/25/99
River = W12.0000 Reach = R0300 RS = 3.614
.065
.04
.065
Legend
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
1925.0
1924.5
1924.0
1923.5
1923.0
1922.5
1922.0
1921.5
9850
9900
9950
10000
10050
10100
Station (ft)

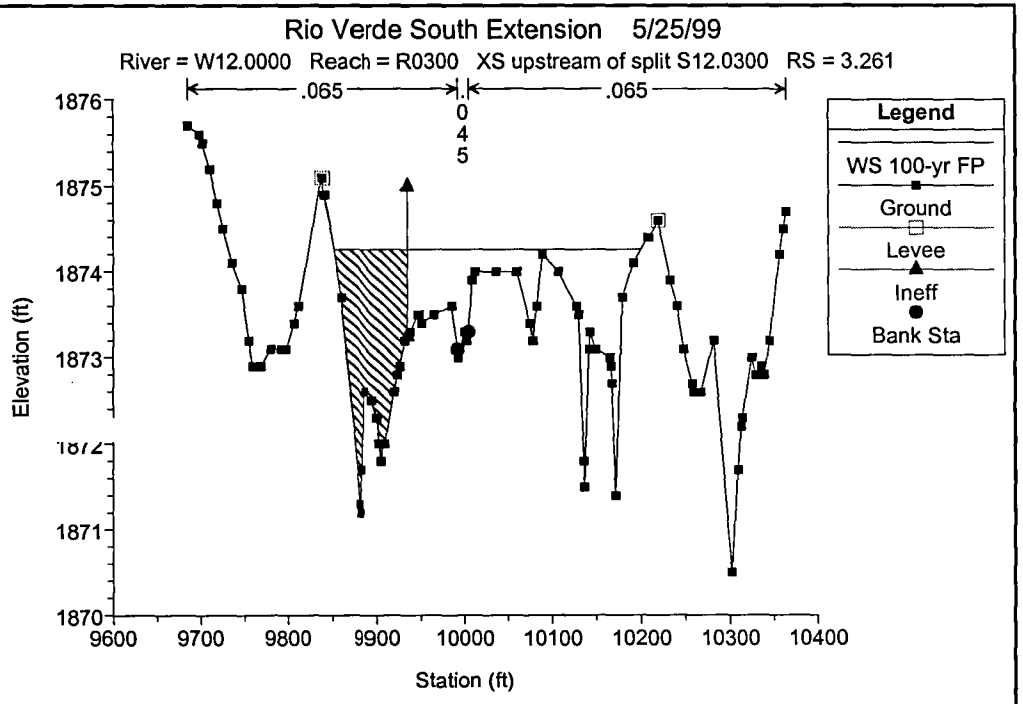

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0300 RS = 3.567
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

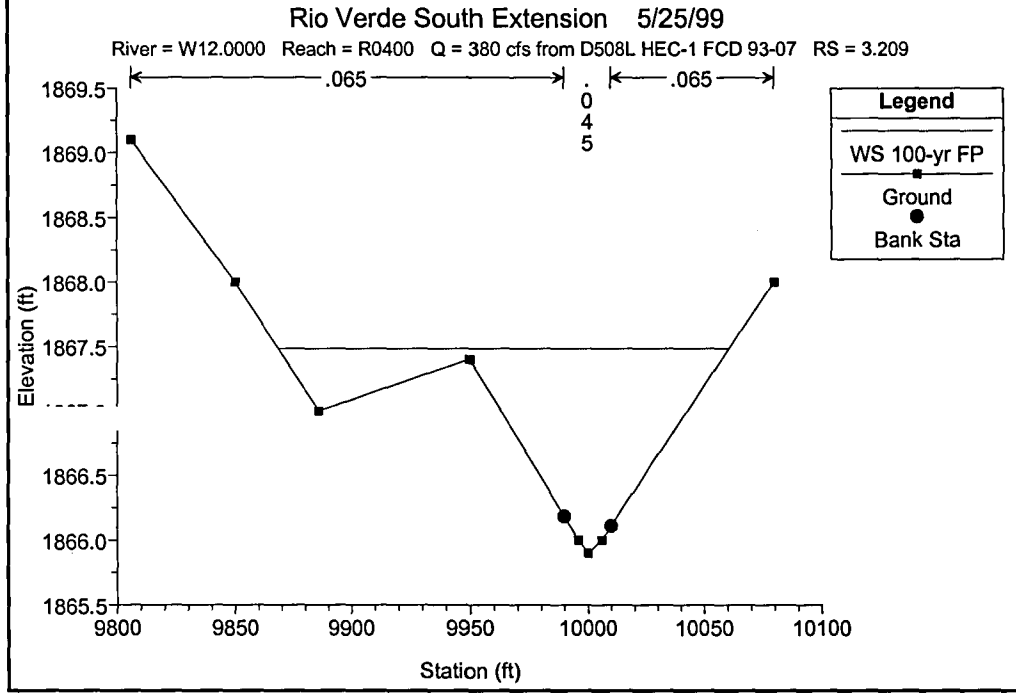

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0300 RS = 3.513
.065
.045
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

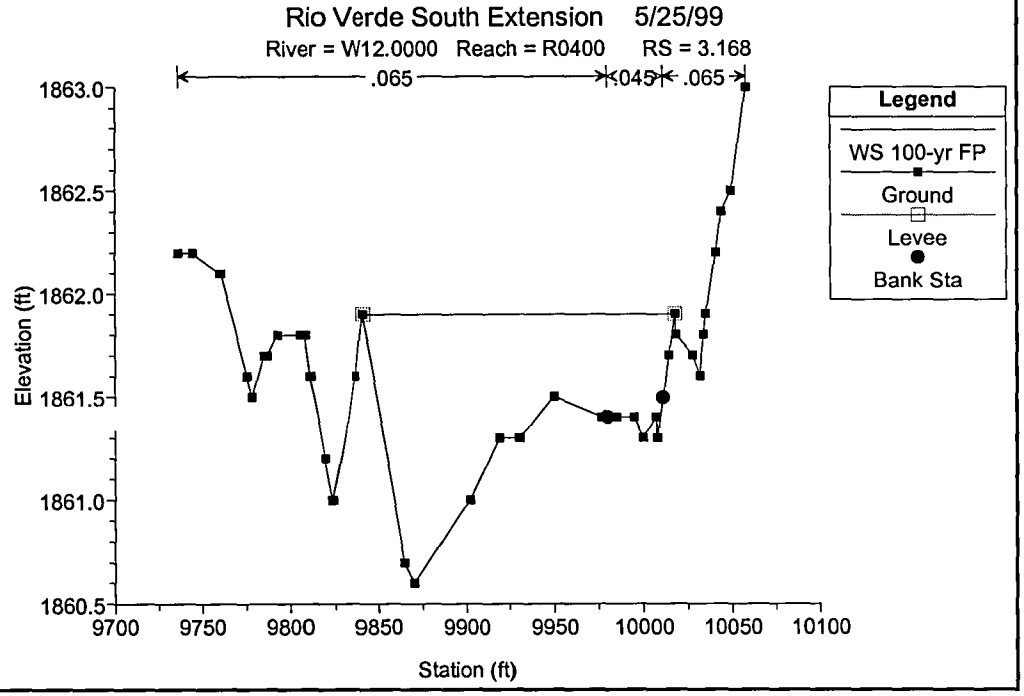

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0300 RS = 3.453
.065
.045
.065
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Elevation (ft)
Station (ft)

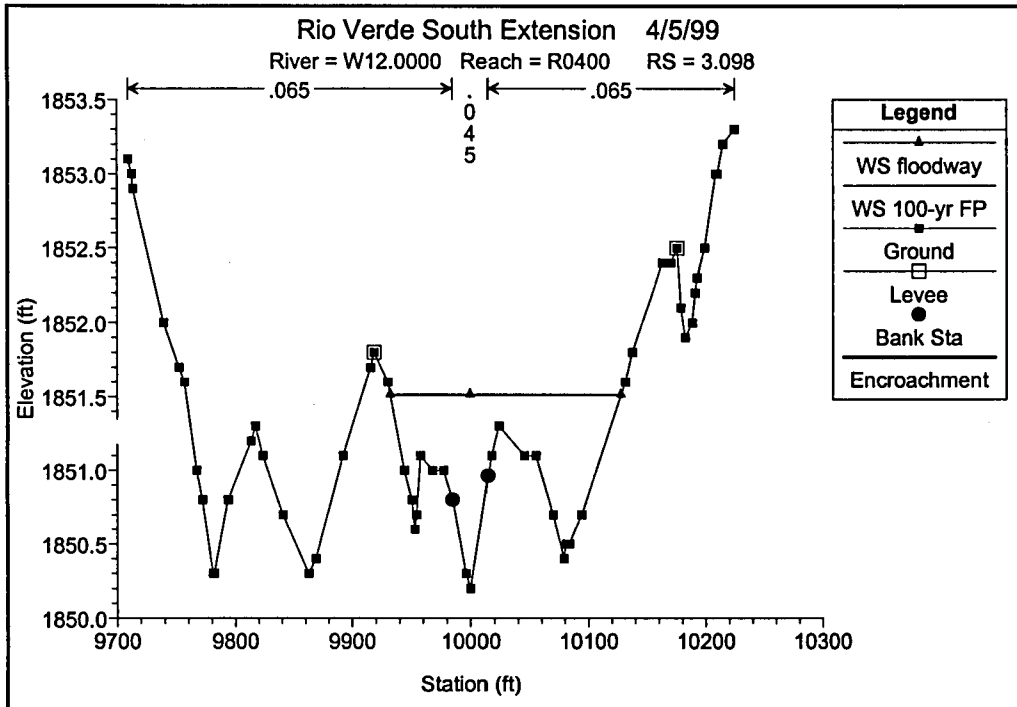

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0300 RS = 3.402
.065
.045
.065
Legend
WS floodway
WS 100-yr FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

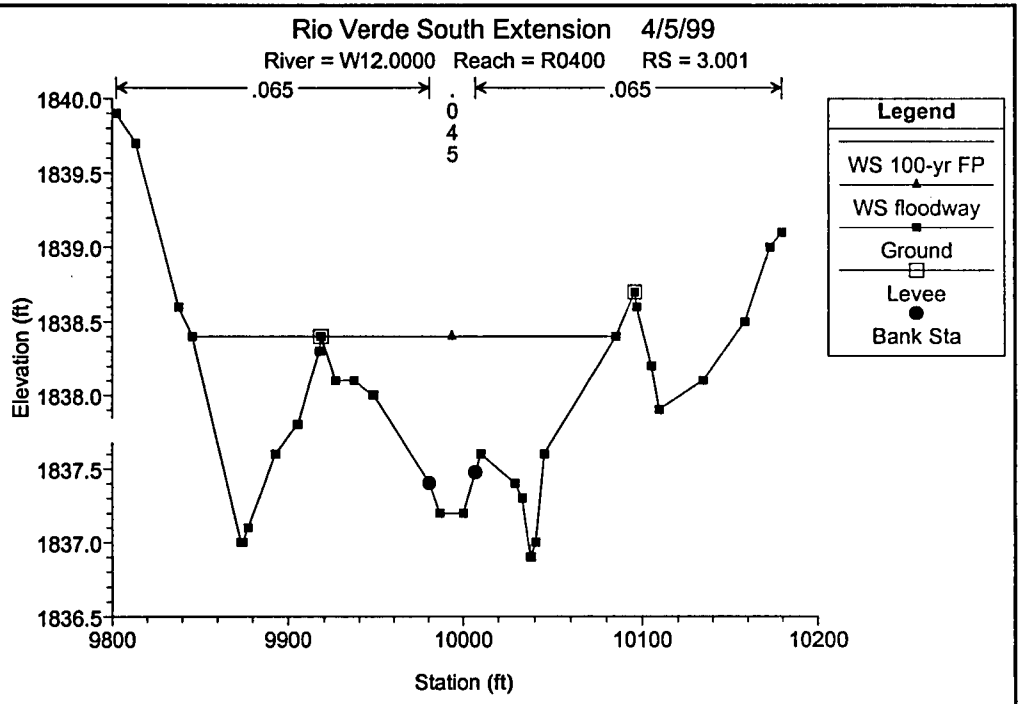

Rio Verde South Extension 5/25/99
River = W12.0000 Reach = R0300 Q = 683 cfs from C508 HEC-1 FCD 93-07 RS = 3.320
.065
.045
.065
Legend
WS 100-yr FP
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

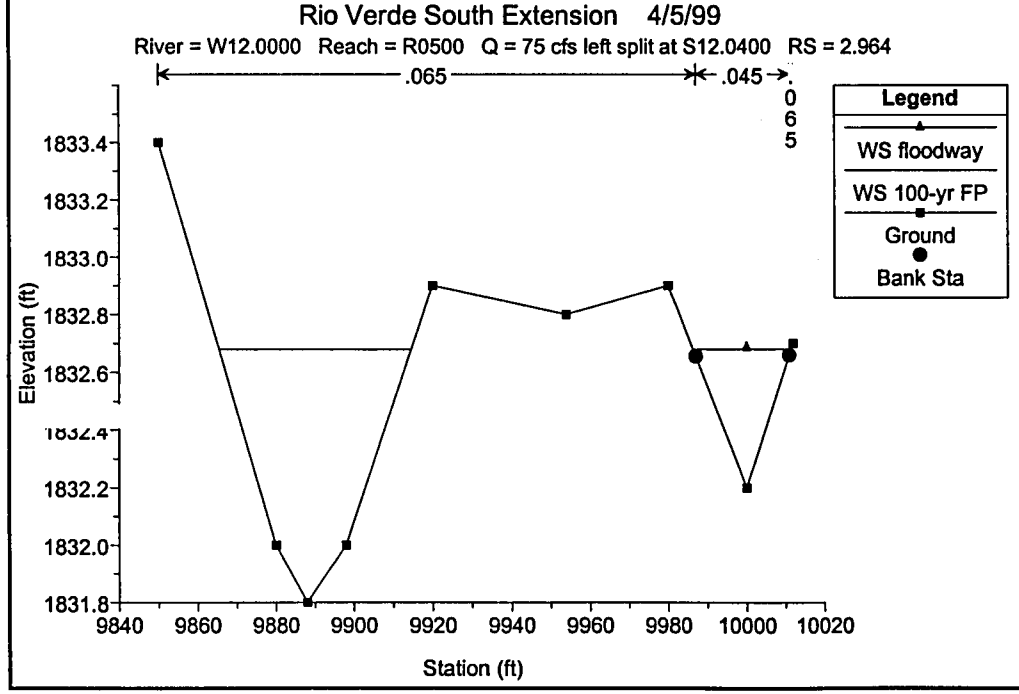

Rio Verde South Extension 5/25/99
River = W12.0000 Reach = R0300 XS upstream of split S12.0300 RS = 3.261
.065
.045
.065
Legend
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

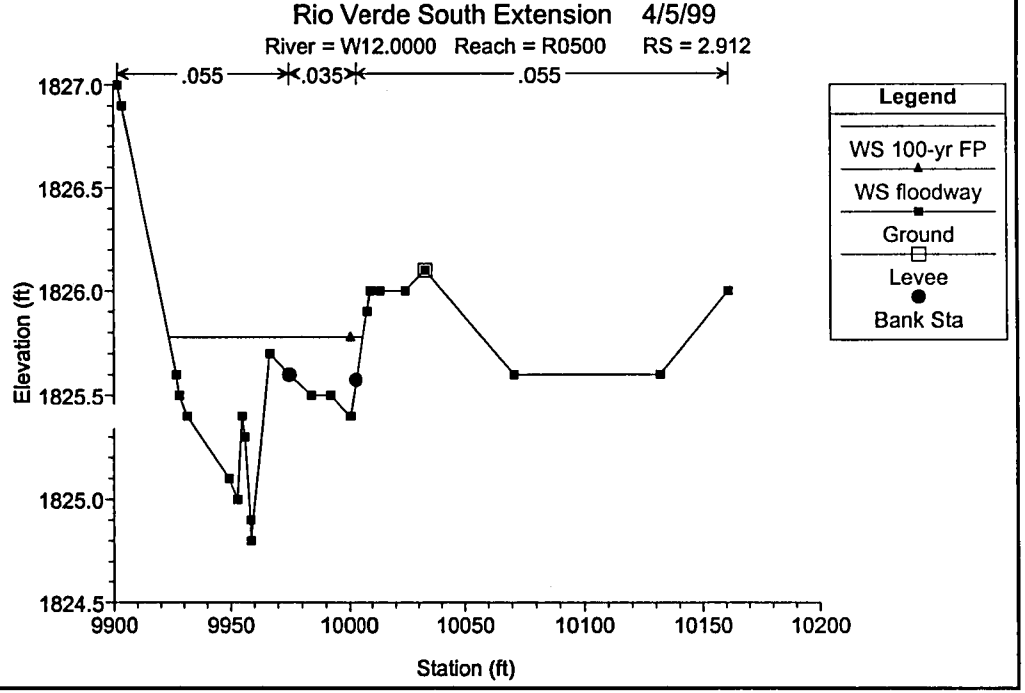

Rio Verde South Extension 5/25/99
River = W12.0000 Reach = R0400 Q = 380 cfs from D508L HEC-1 FCD 93-07 RS = 3.209
.065
.045
.065
Legend
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

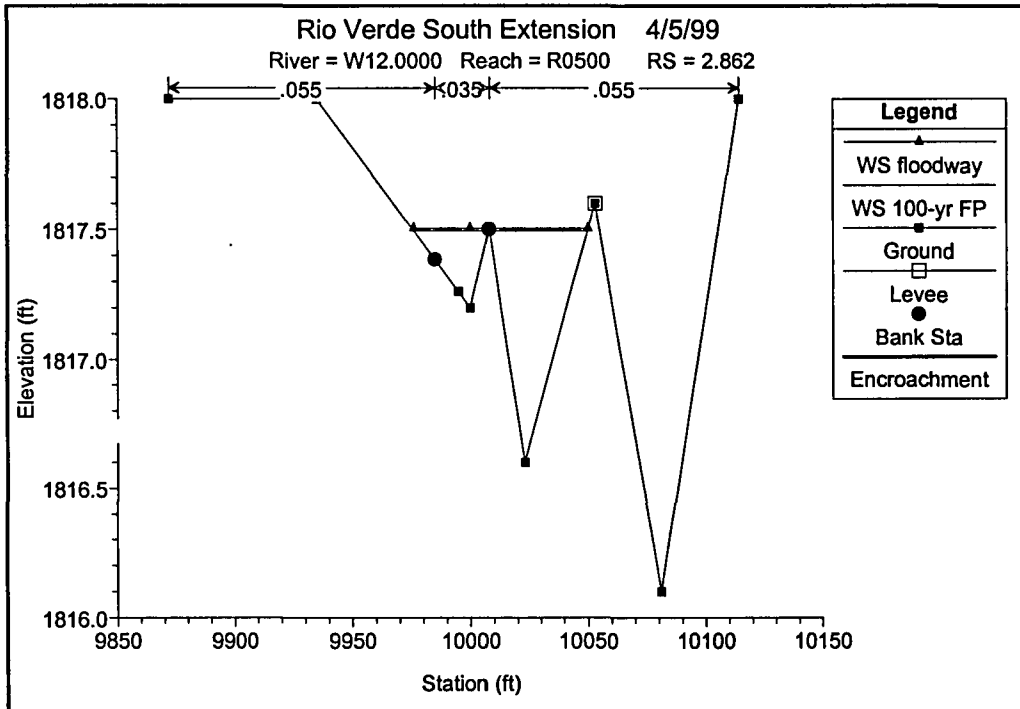

Rio Verde South Extension 5/25/99
River = W12.0000 Reach = R0400 RS = 3.168
.065
.045
.065
Legend
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

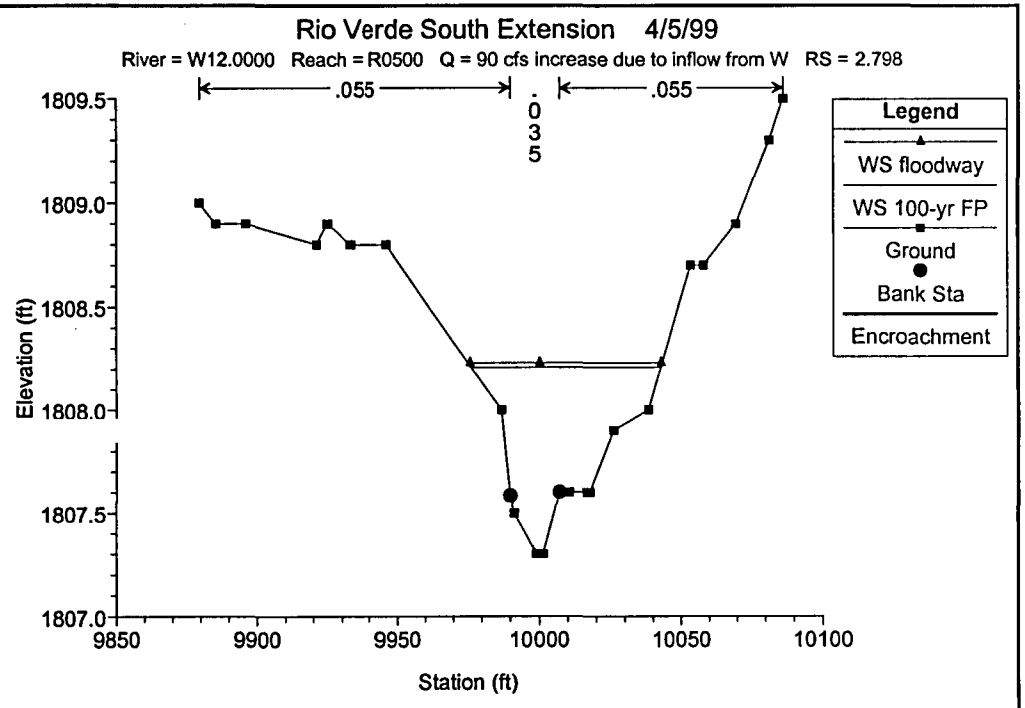

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0400 RS = 3.098
.065
.045
.065
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

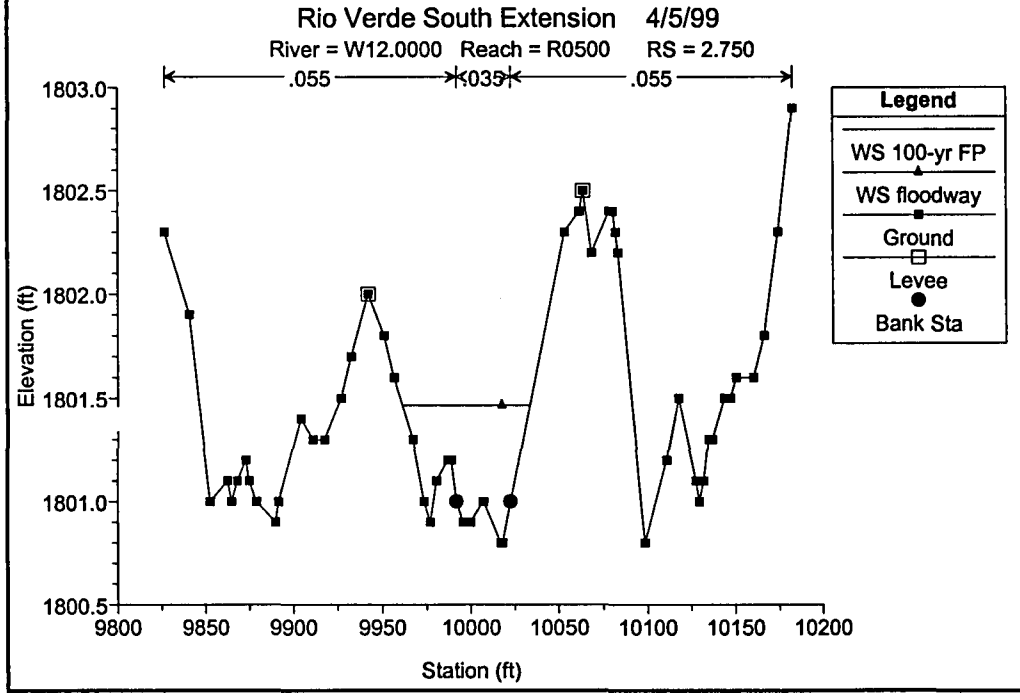

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0400 RS = 3.001
.065
.045
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

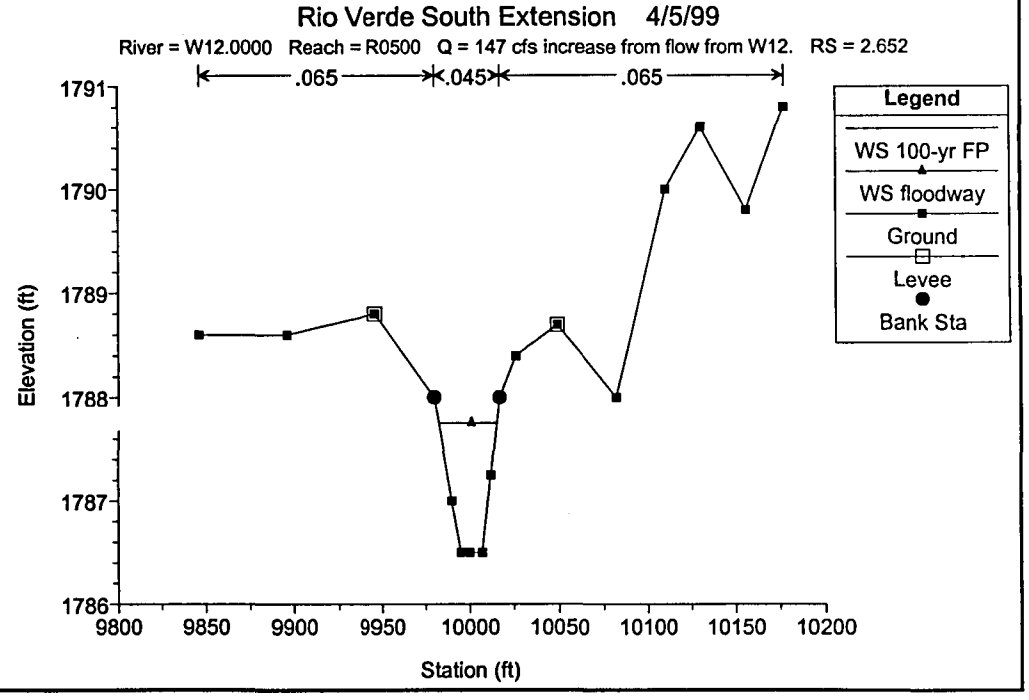

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0500 Q = 75 cfs left split at S12.0400 RS = 2.964
.065
.045
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

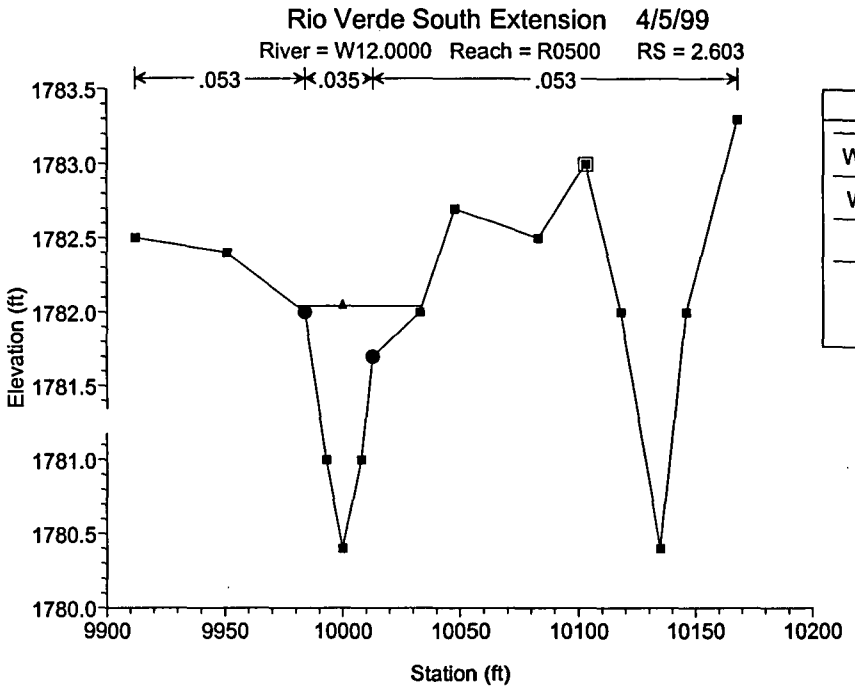

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0500 RS = 2.912
.055
.035
.055
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

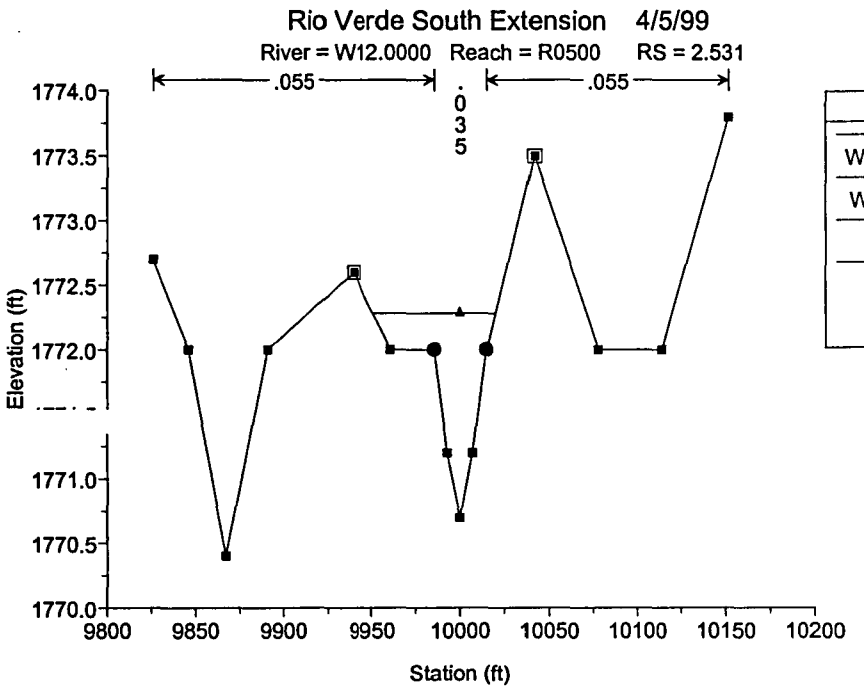

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0500 RS = 2.862
.055
.035
.055
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

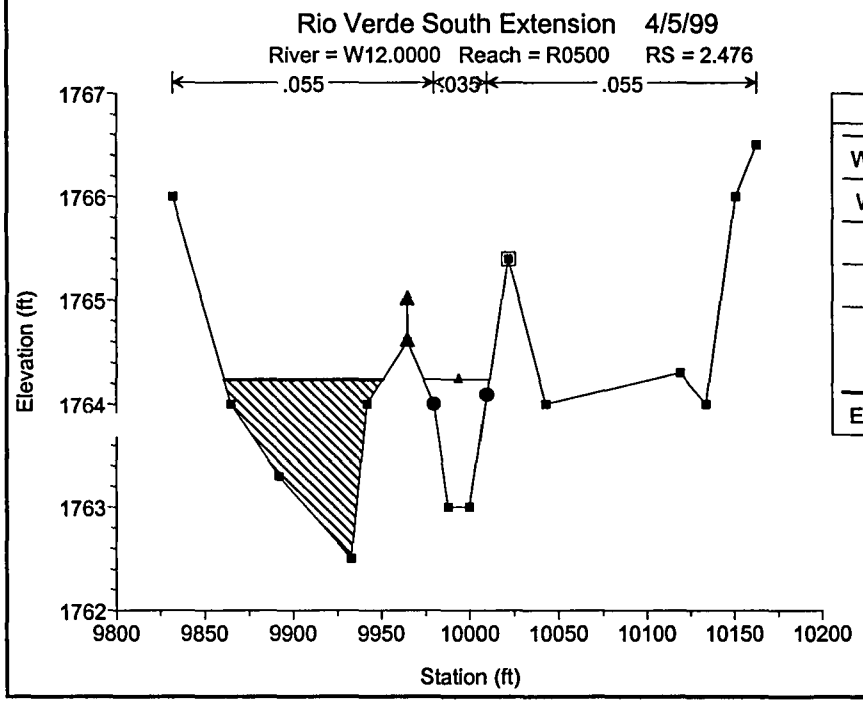

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0500 Q = 90 cfs increase due to inflow from W RS = 2.798
.055
.035
.055
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

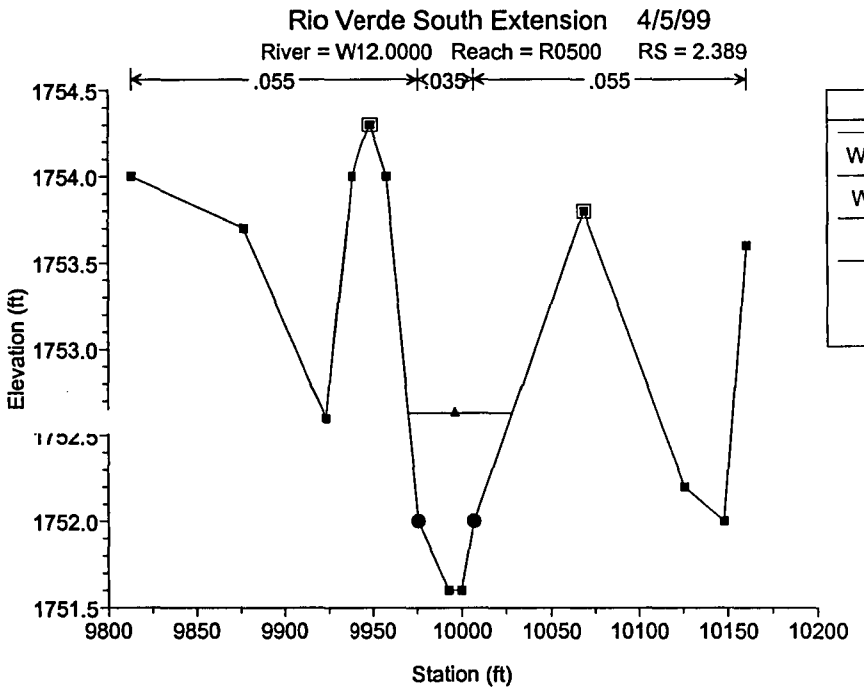

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0500 RS = 2.750
.055
.035
.055
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

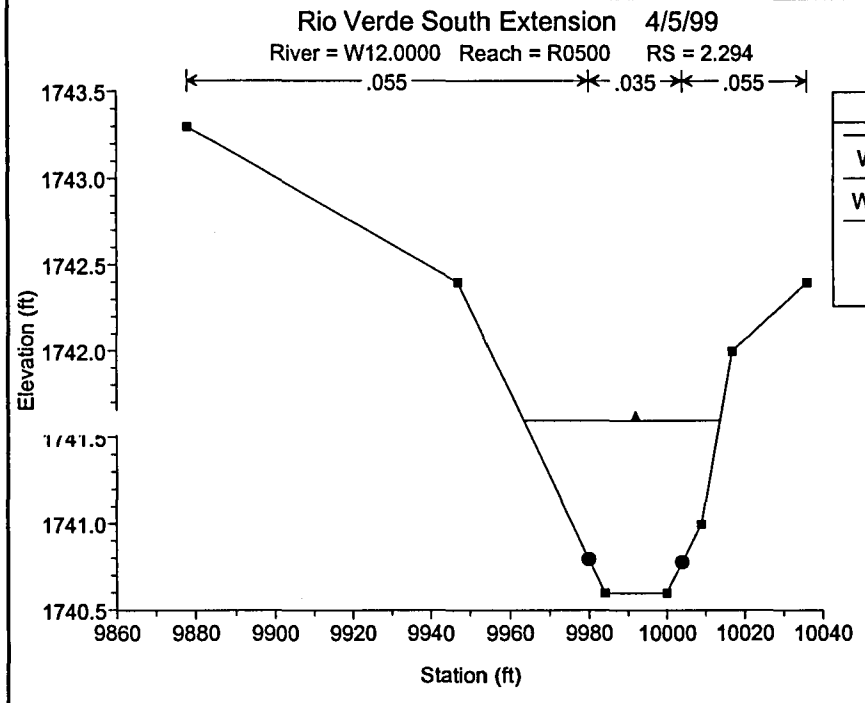

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0500 Q = 147 cfs increase from flow from W12. RS = 2.652
.065
.045
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

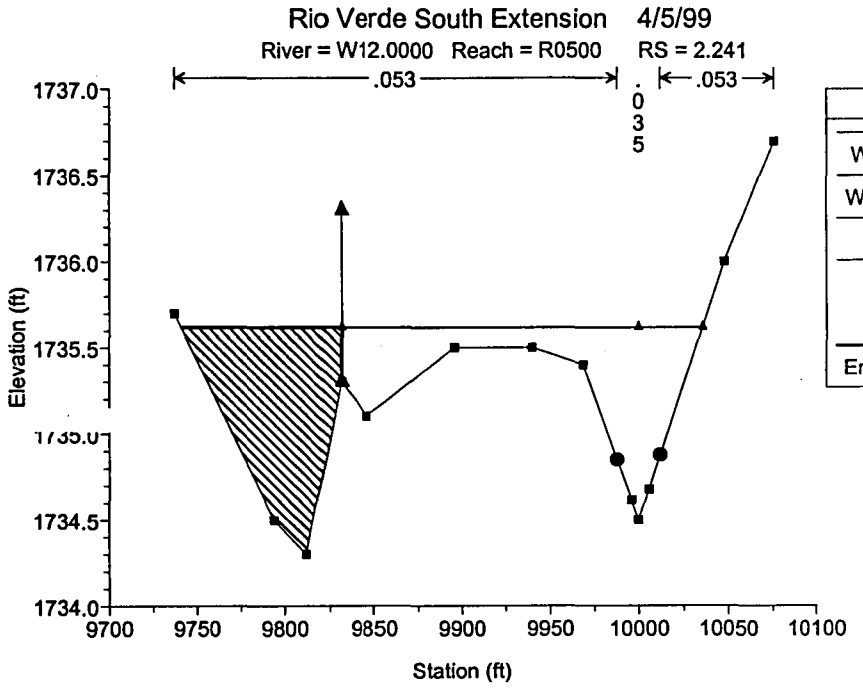

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0500 RS = 2.603
.053
.035
.053
Elevation (ft)
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta

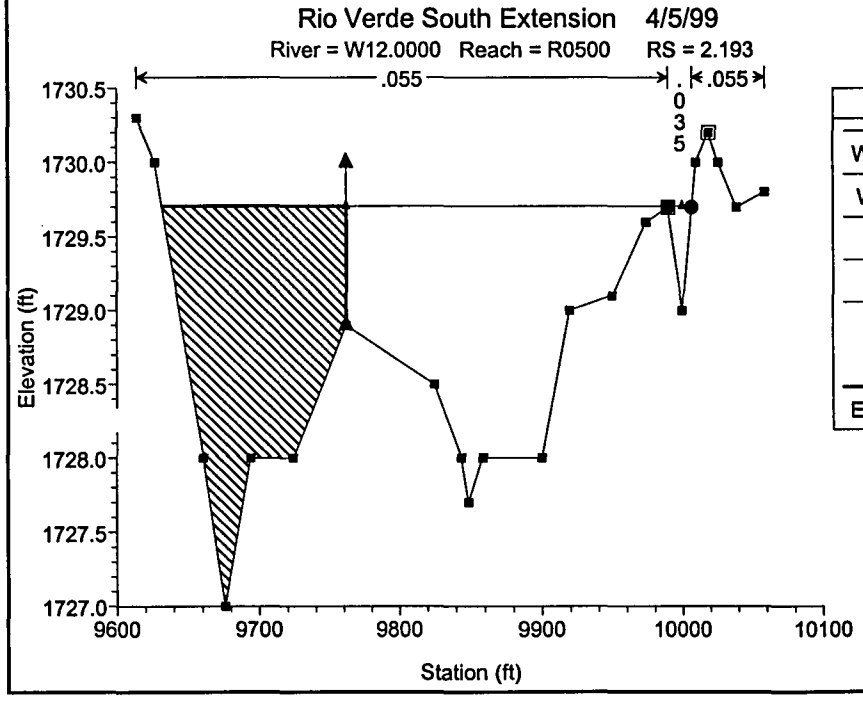

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0500 RS = 2.531
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta

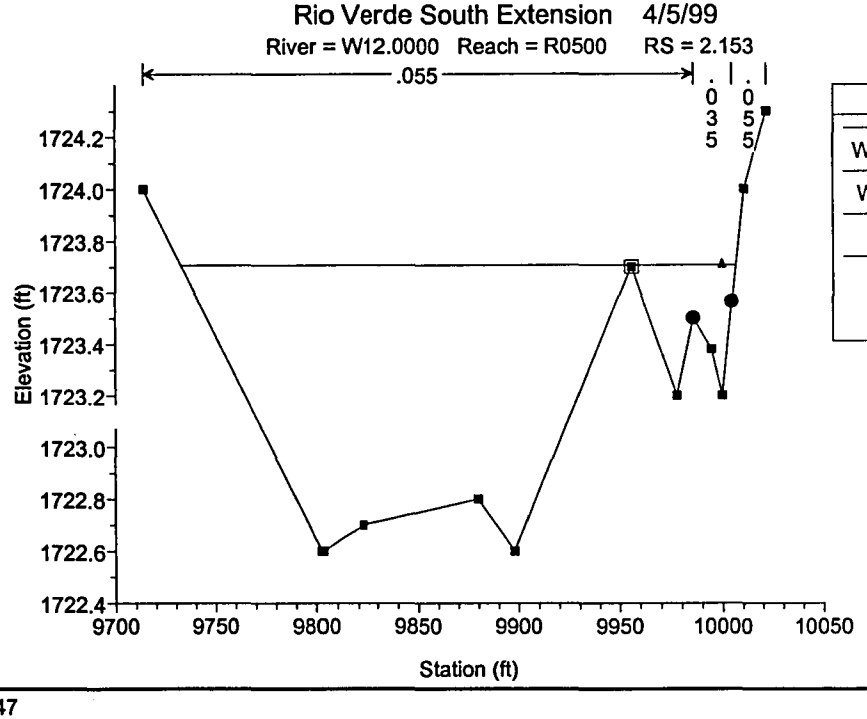

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0500 RS = 2.476
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment

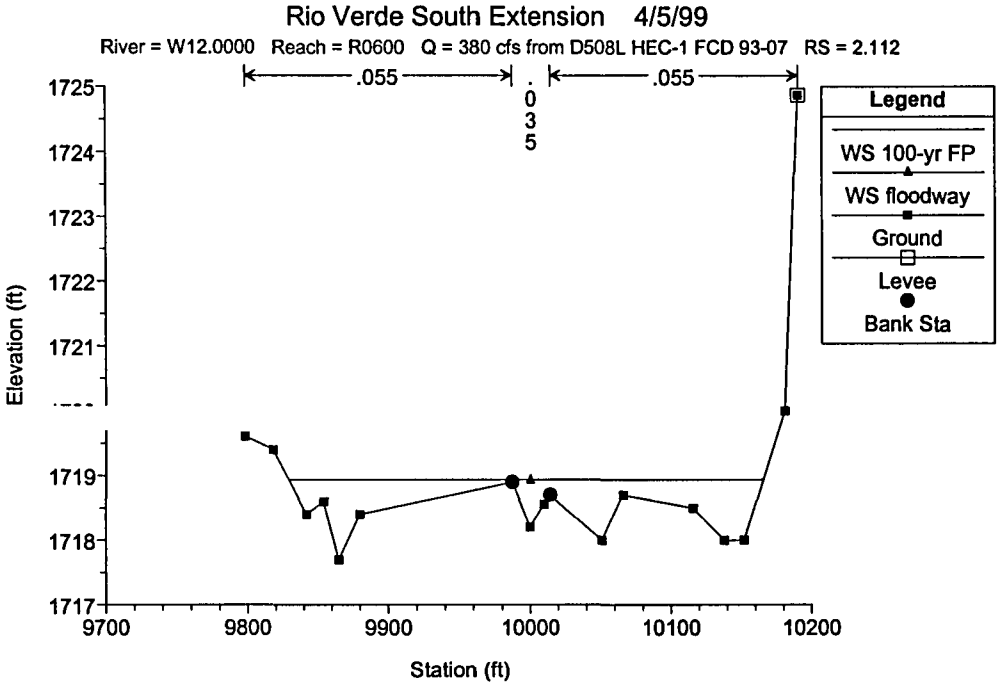

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0500 RS = 2.389
.055
.035
.055
Elevation (ft)
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta

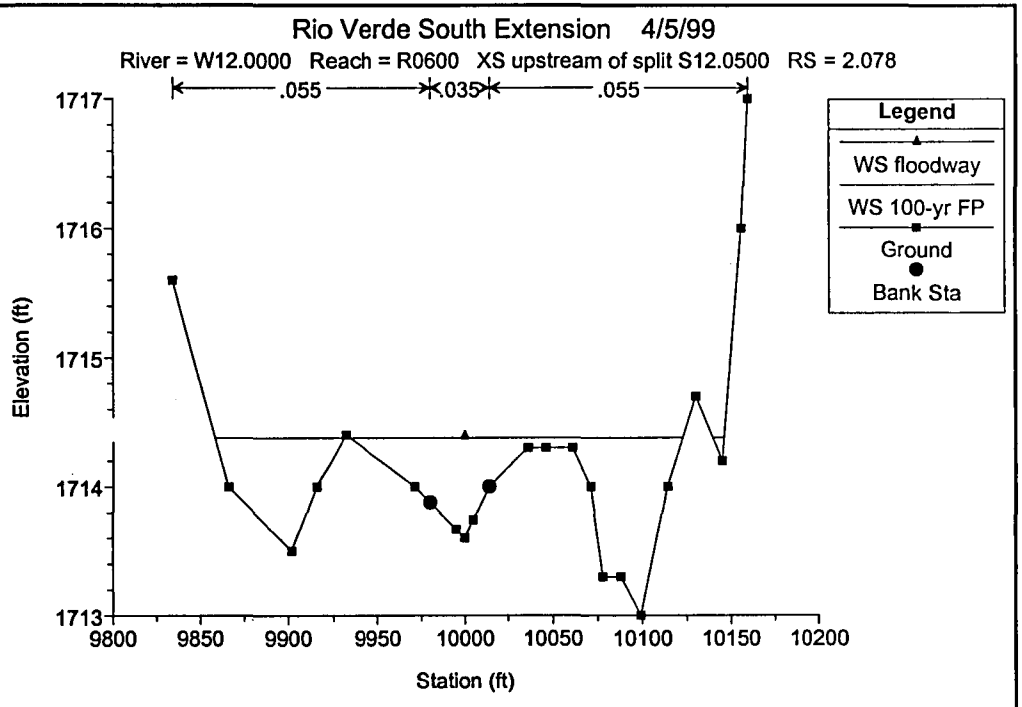

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0500 RS = 2.294
.055
.035
.055
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

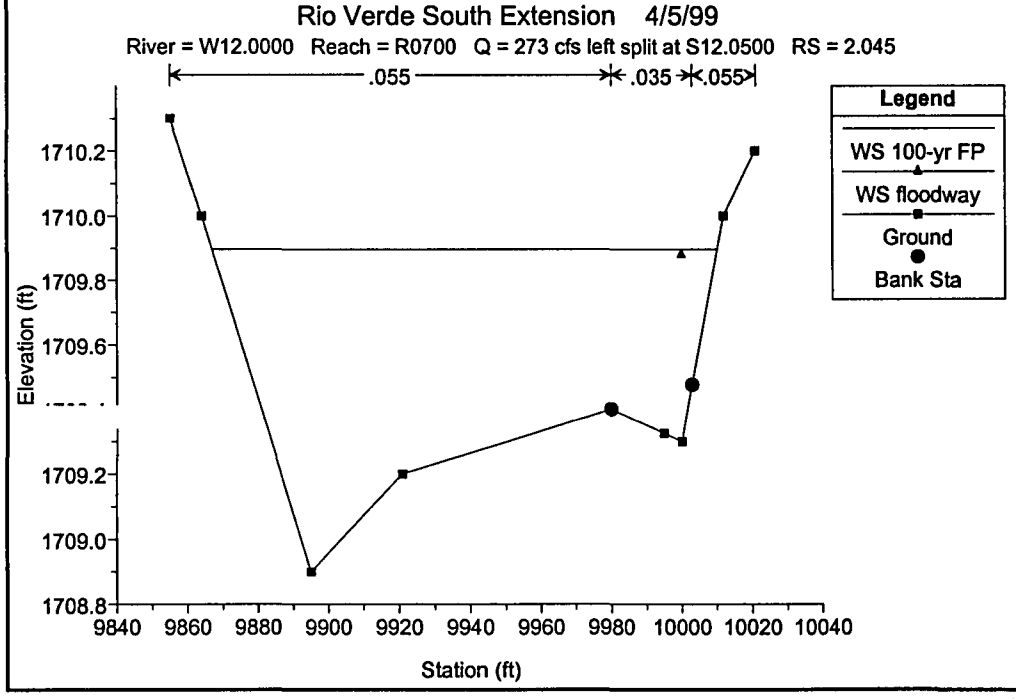

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0500 RS = 2.241
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

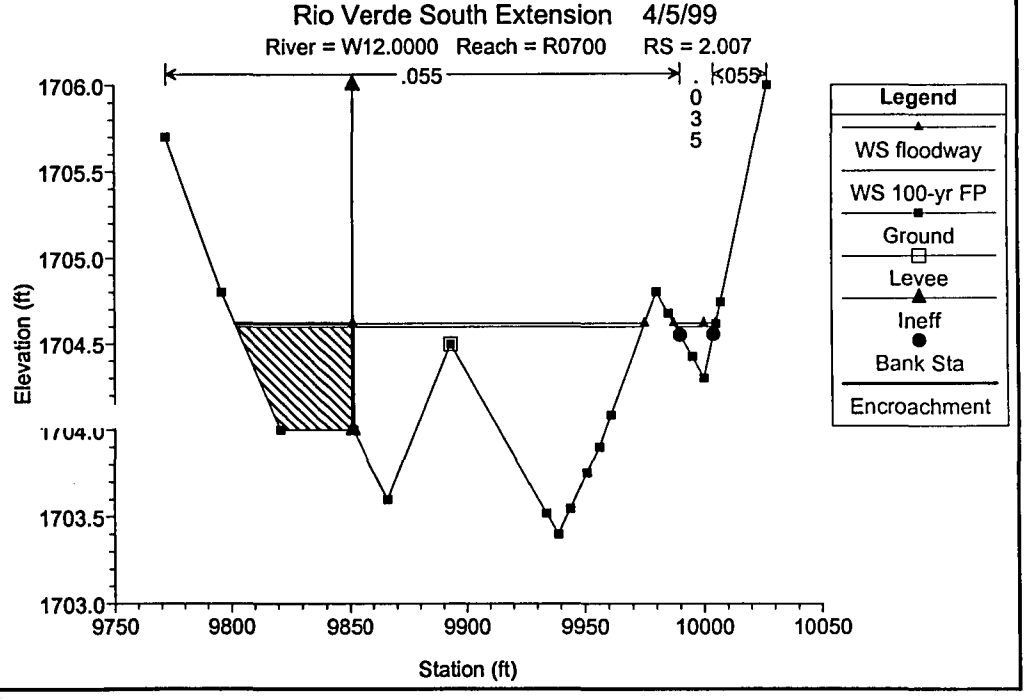

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0500 RS = 2.193
.055
.035
.055
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

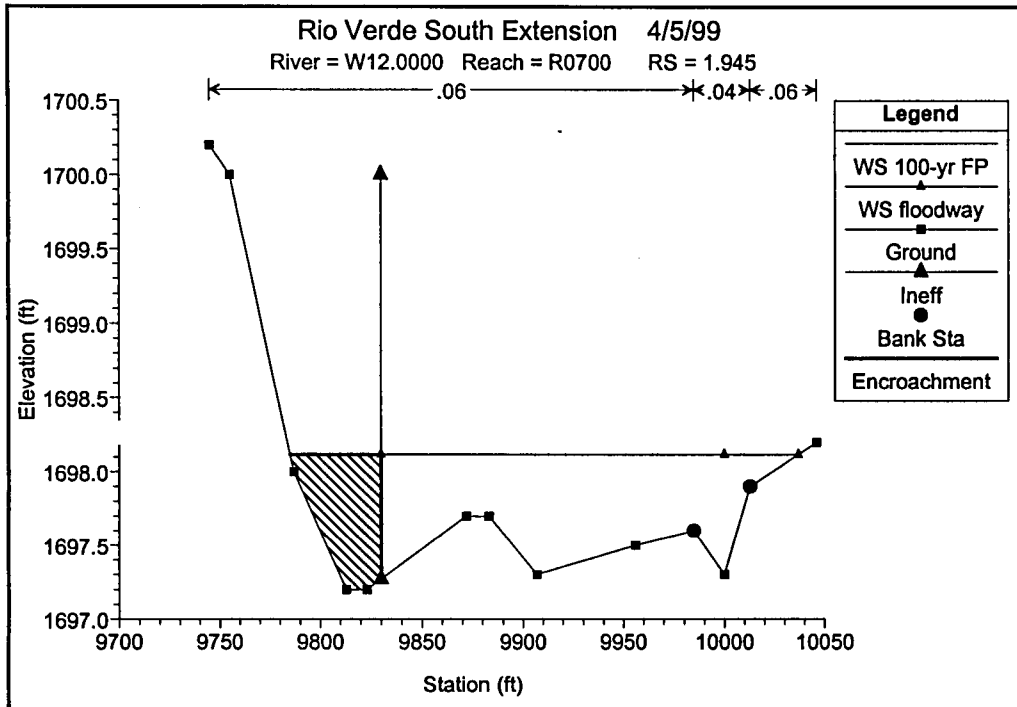

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0500 RS = 2.153
.055
.035
.055
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

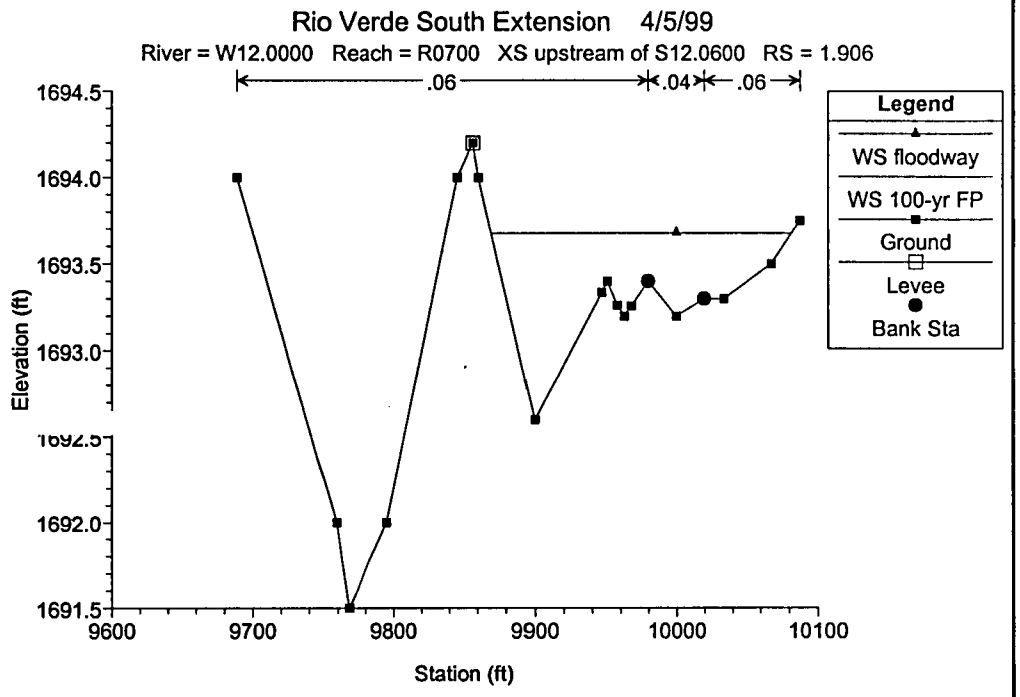

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0600 Q = 380 cfs from D508L HEC-1 FCD 93-07 RS = 2.112
.055
.035
.055
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

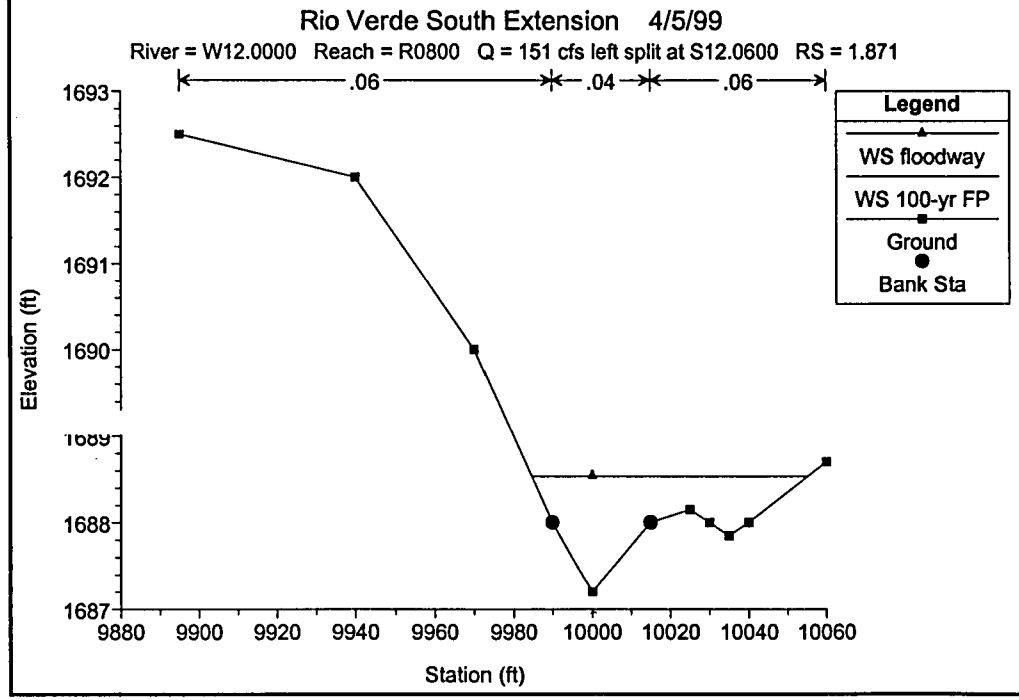

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0600 XS upstream of split S12.0500 RS = 2.078
.055
.035
.055
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

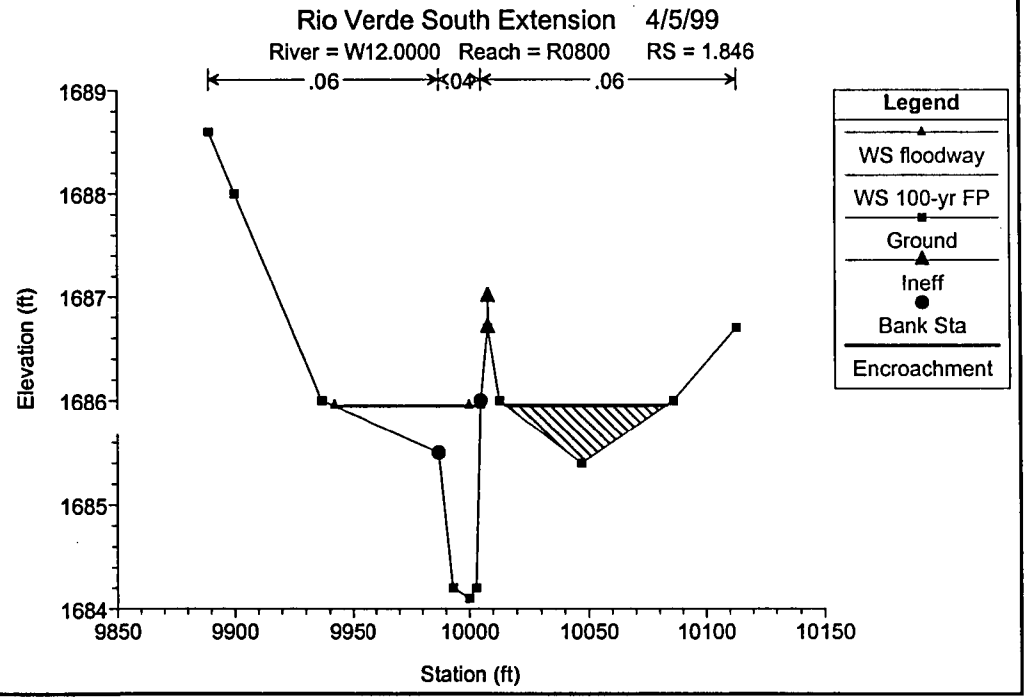

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0700 Q = 273 cfs left split at S12.0500 RS = 2.045
.055
.035
.055
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Elevation (ft)
Station (ft)

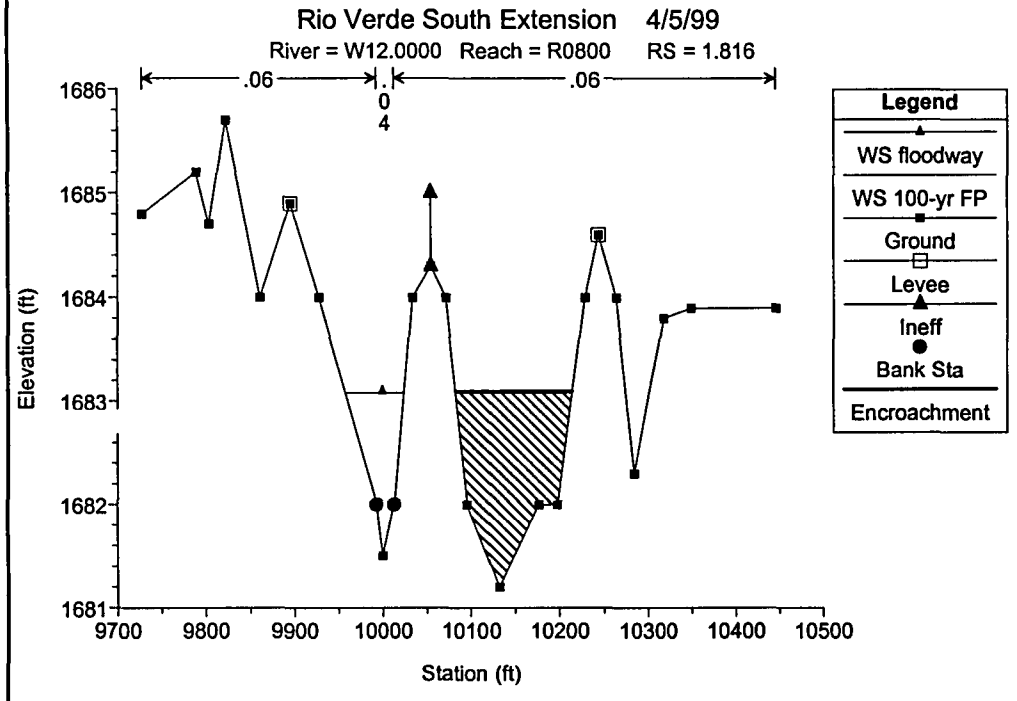

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0700 RS = 2.007
.055
.055
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

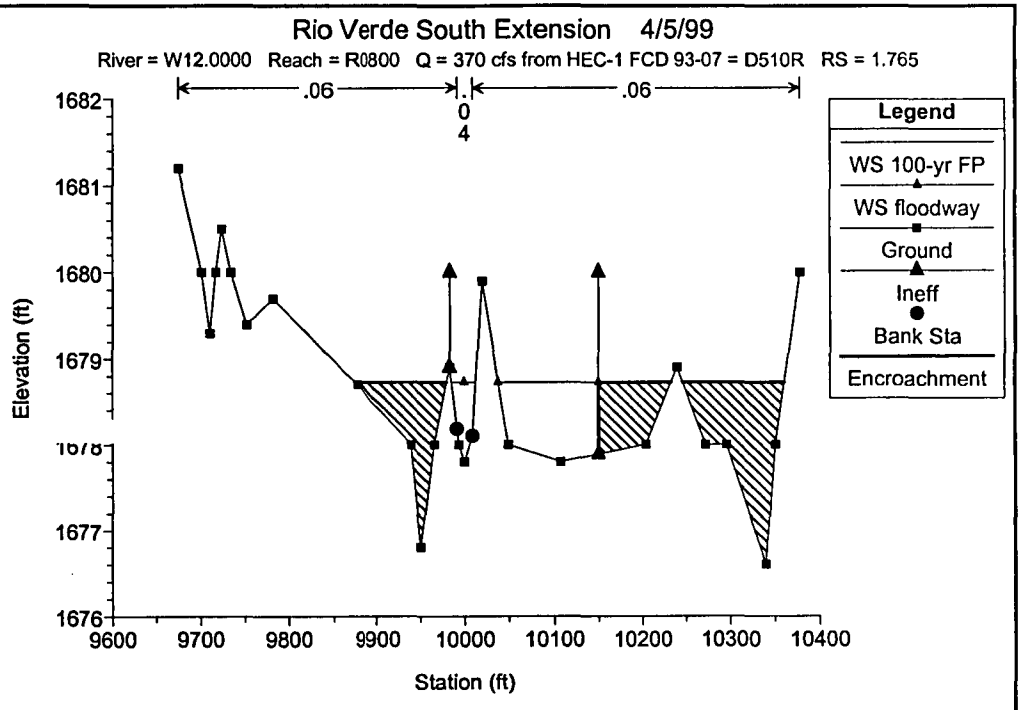

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0700 RS = 1.945
.06
.04
.06
Legend
WS 100-yr FP
WS floodway
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

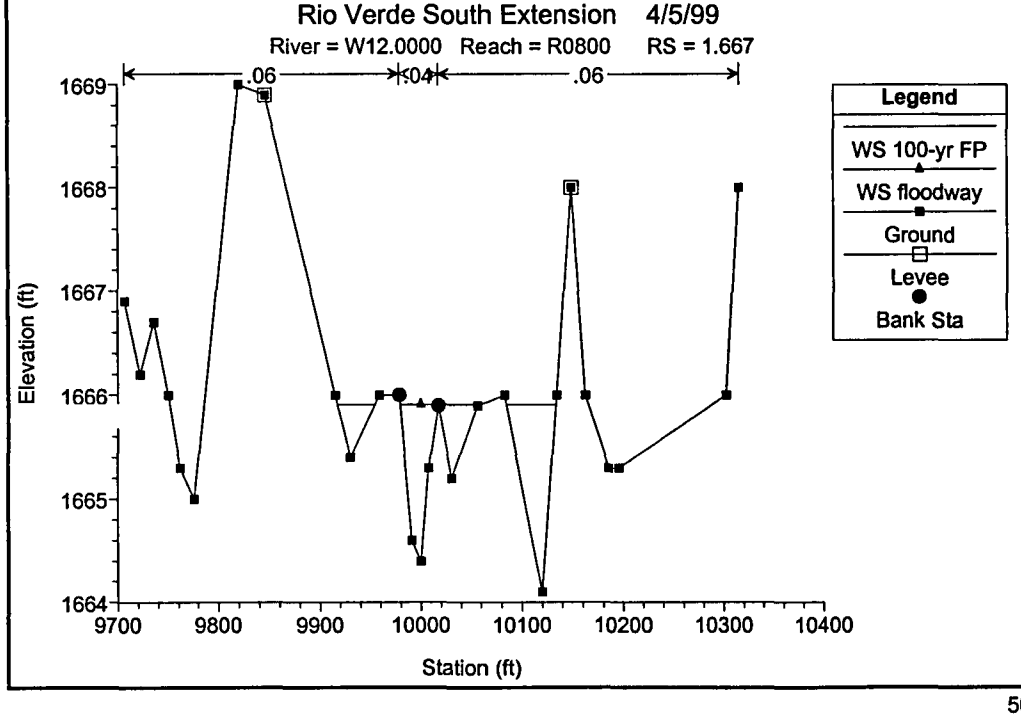

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0700 XS upstream of S12.0600 RS = 1.906
.06
.04
.06
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

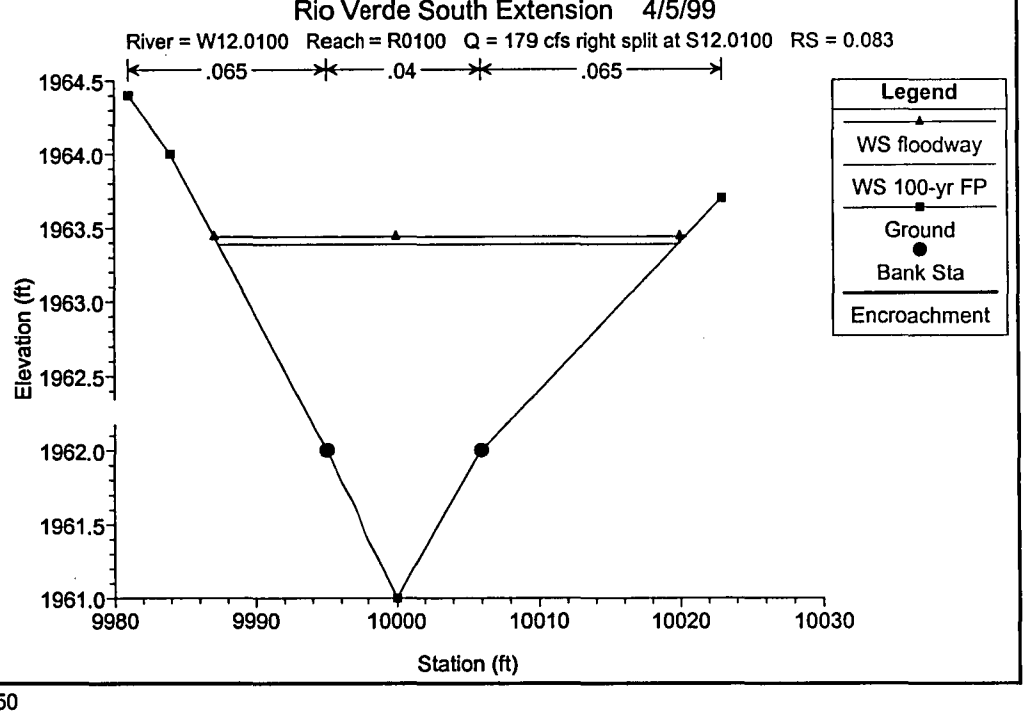

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0800 Q = 151 cfs left split at S12.0600 RS = 1.871
.06
.04
.06
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

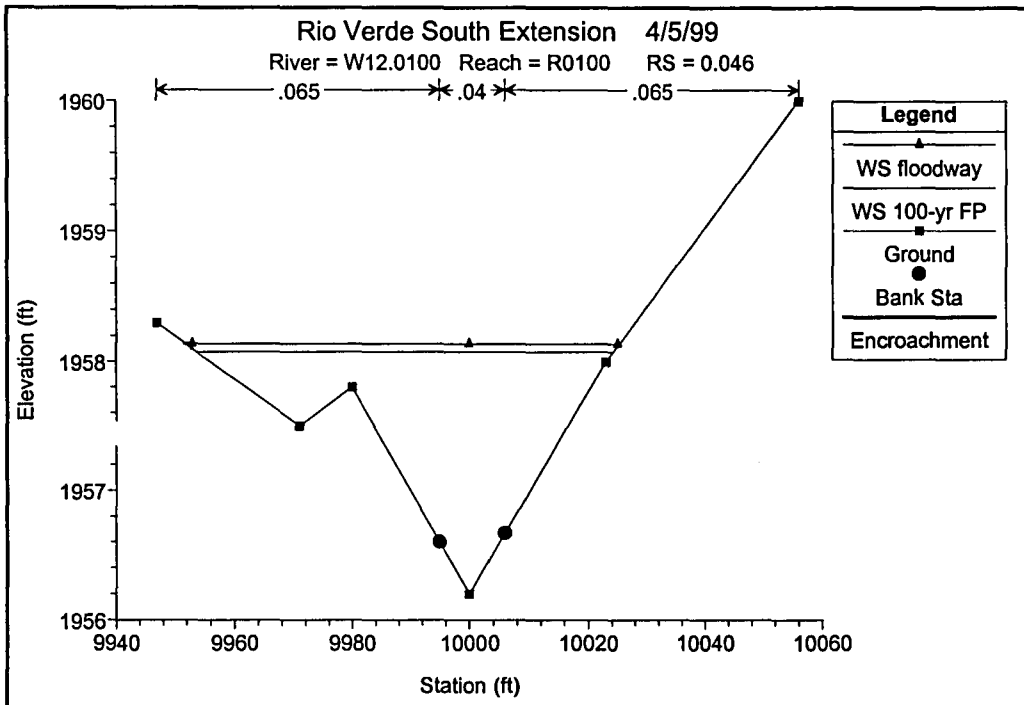

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0800 RS = 1.846
.06
.04
.06
Legend
WS floodway
WS 100-yr FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

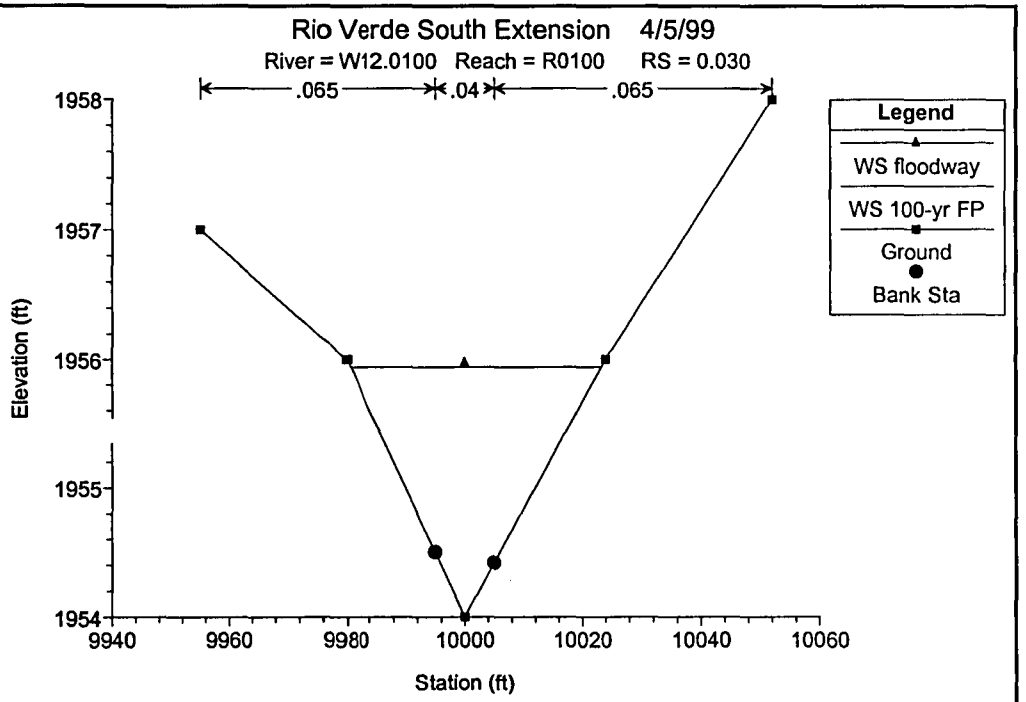

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0800 RS = 1.816
.06
.06
0
4
Elevation (ft)
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Encroachment

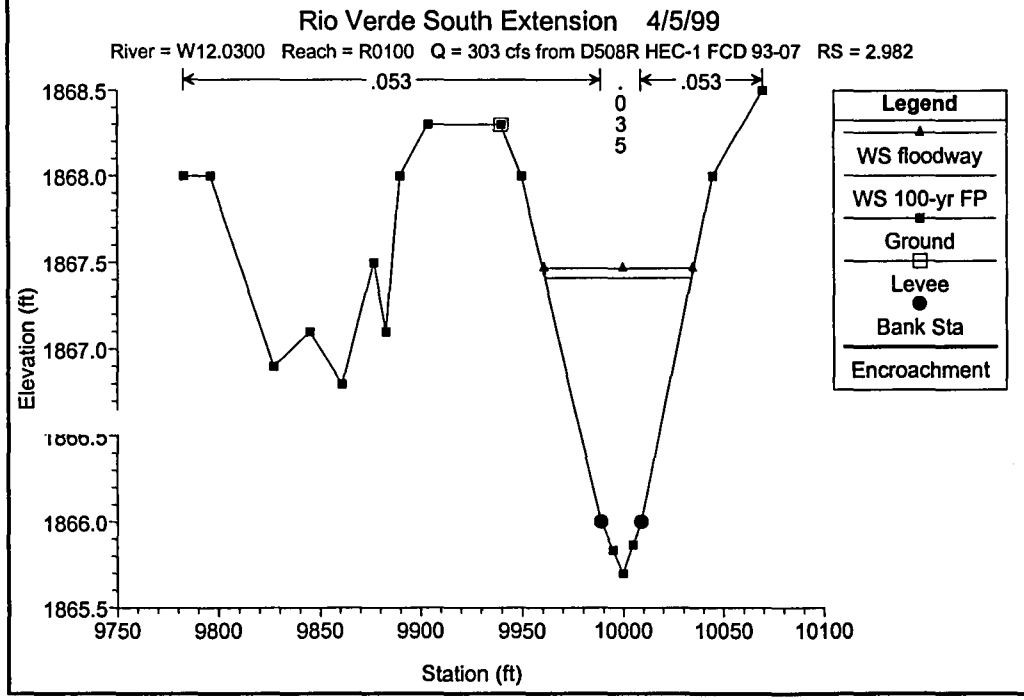

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0800 Q = 370 cfs from HEC-1 FCD 93-07 = D510R RS = 1.765
.06
.06
0
4
Elevation (ft)
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Ineff
Bank Sta
Encroachment

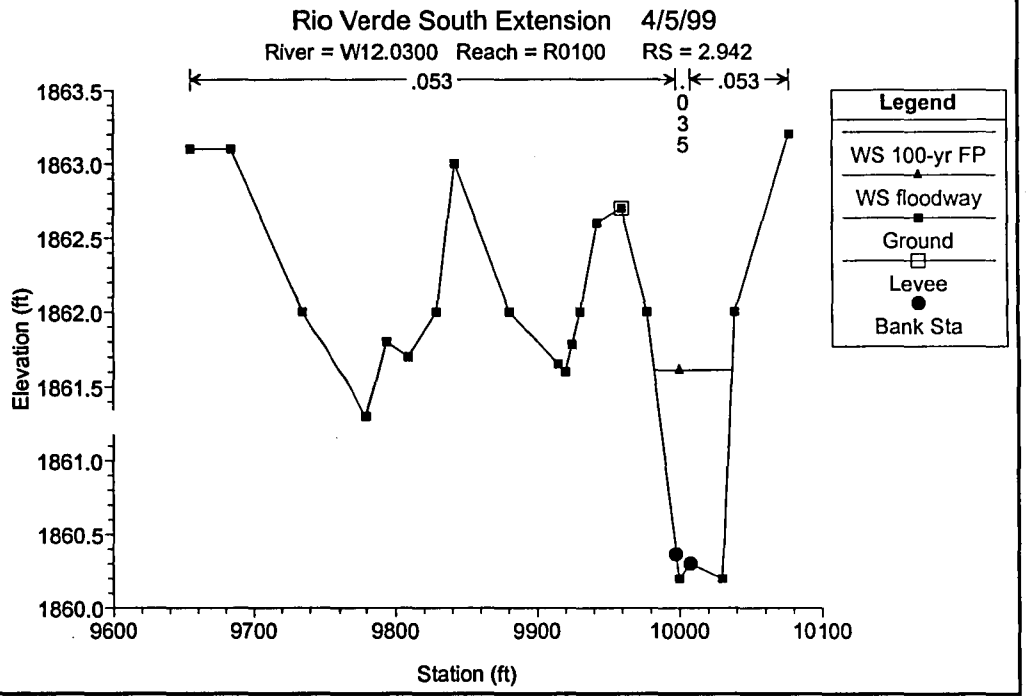

Rio Verde South Extension 4/5/99
River = W12.0000 Reach = R0800 RS = 1.667
.06
.04
.06
Elevation (ft)
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta

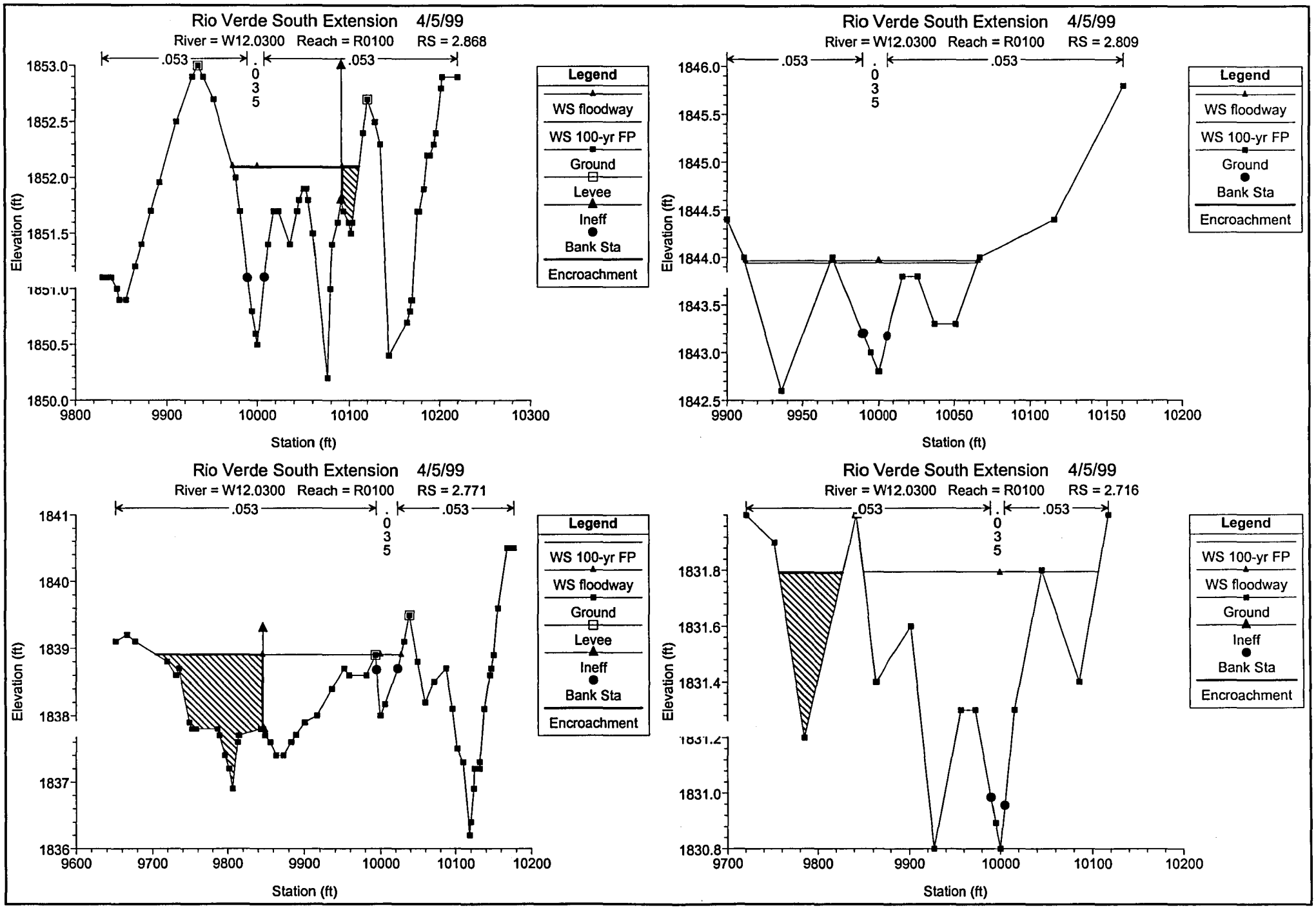

Rio Verde South Extension 4/5/99
River = W12.0100 Reach = R0100 Q = 179 cfs right split at S12.0100 RS = 0.083
.065
.04
.065
Elevation (ft)
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment

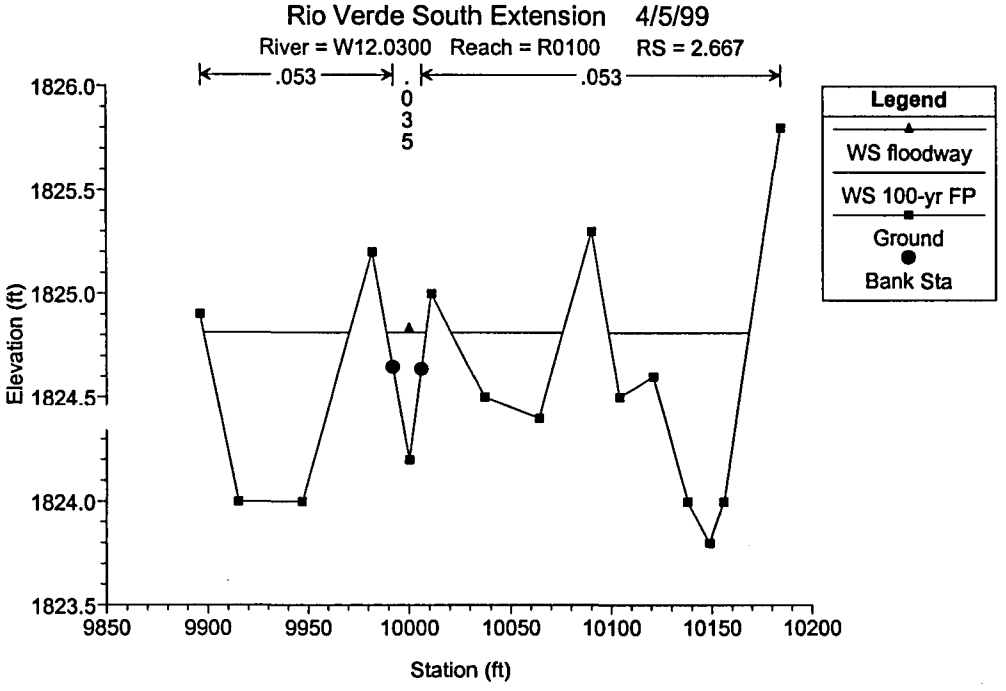

Rio Verde South Extension 4/5/99
River = W12.0100 Reach = R0100 RS = 0.046
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

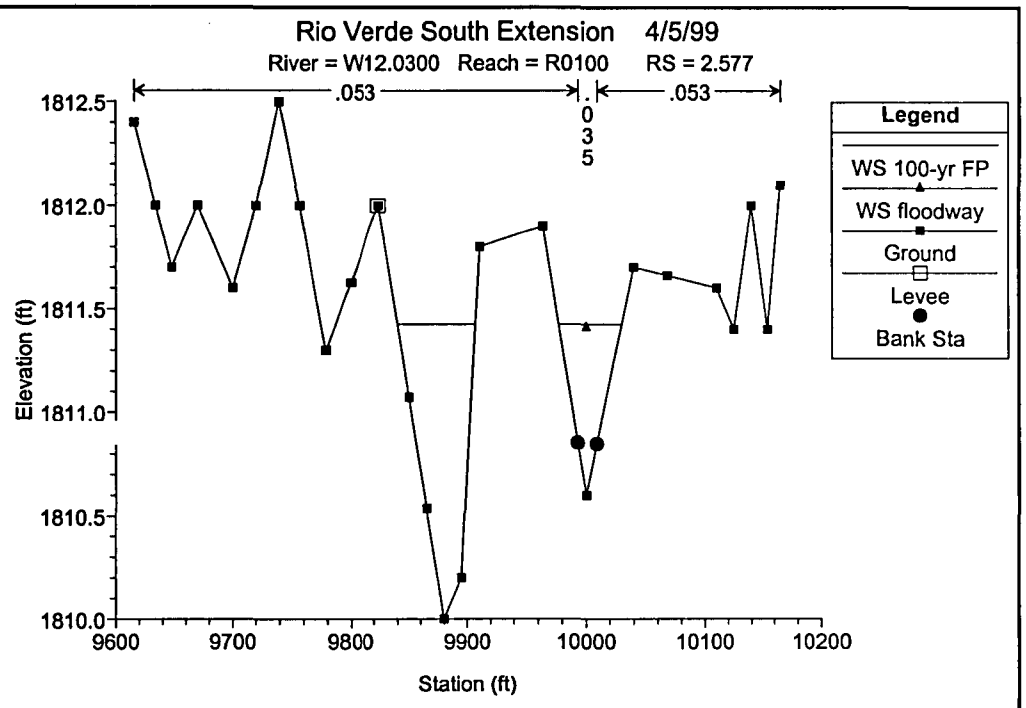

Rio Verde South Extension 4/5/99
River = W12.0100 Reach = R0100 RS = 0.030
.065
.04
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

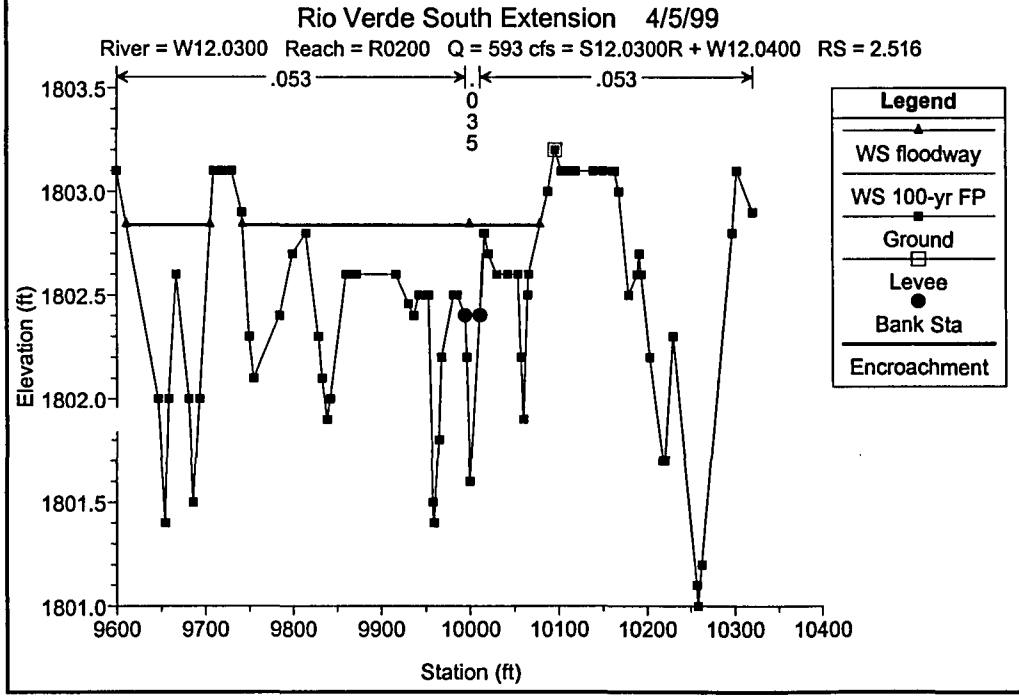

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0100 Q = 303 cfs from D508R HEC-1 FCD 93-07 RS = 2.982
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

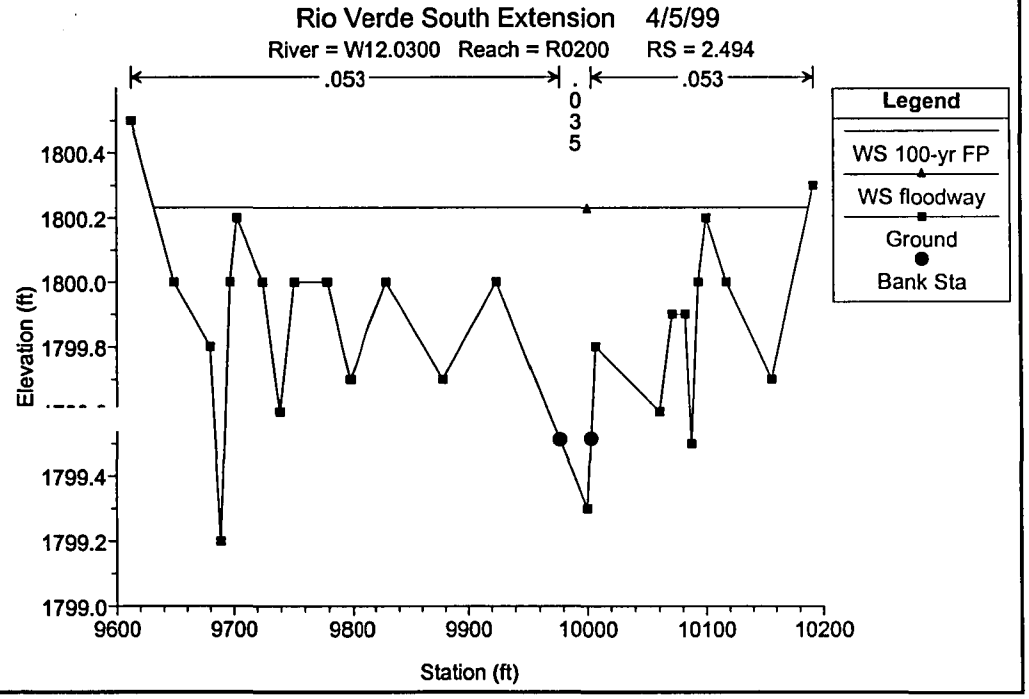

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0100 RS = 2.942
.053
.035
.053
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

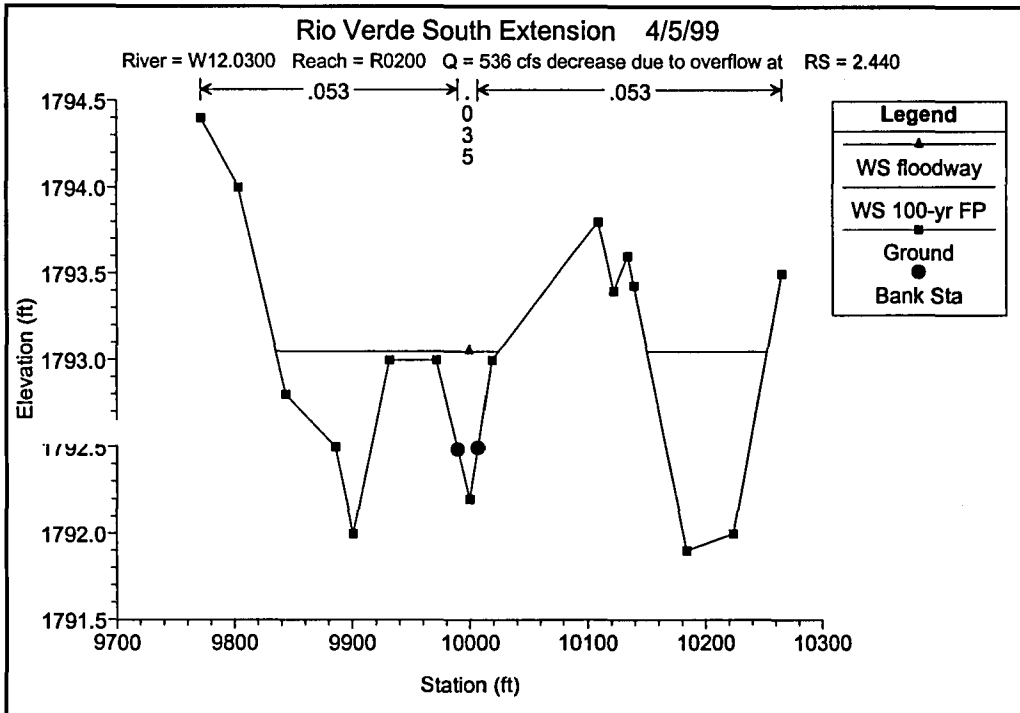

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0100 RS = 2.868
.053
.035
.053
Elevation (ft)
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Encroachment
Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0100 RS = 2.809
.053
.035
.053
Elevation (ft)
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0100 RS = 2.771
.053
.035
.053
Elevation (ft)
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment
Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0100 RS = 2.716
.053
.035
.053
Elevation (ft)
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Ineff
Bank Sta
Encroachment

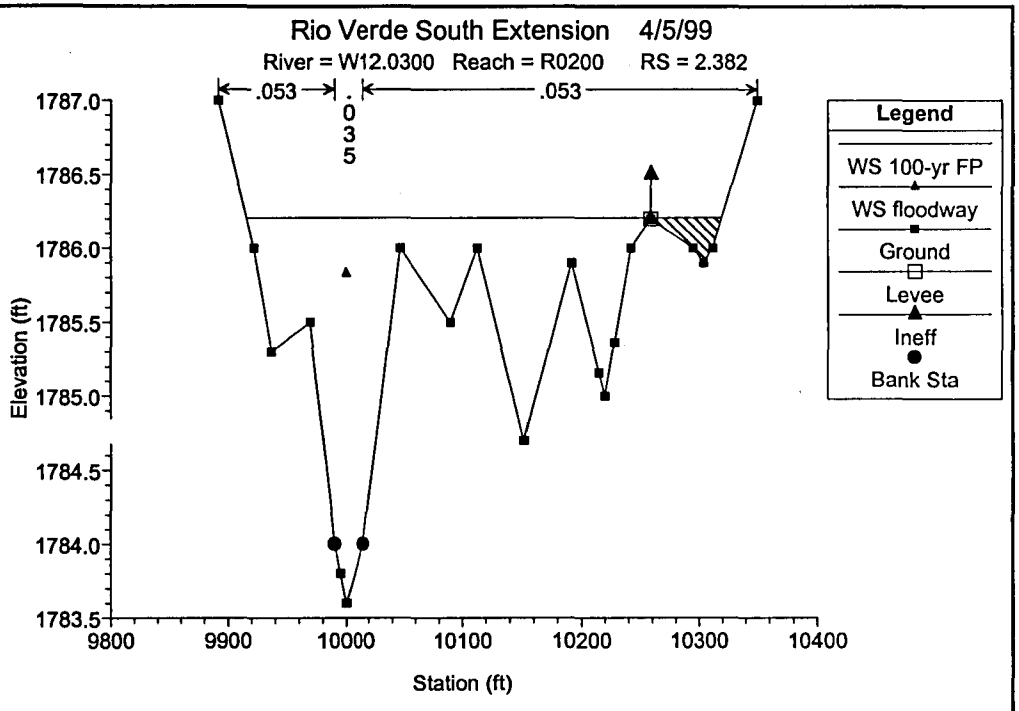

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0100 RS = 2.667
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

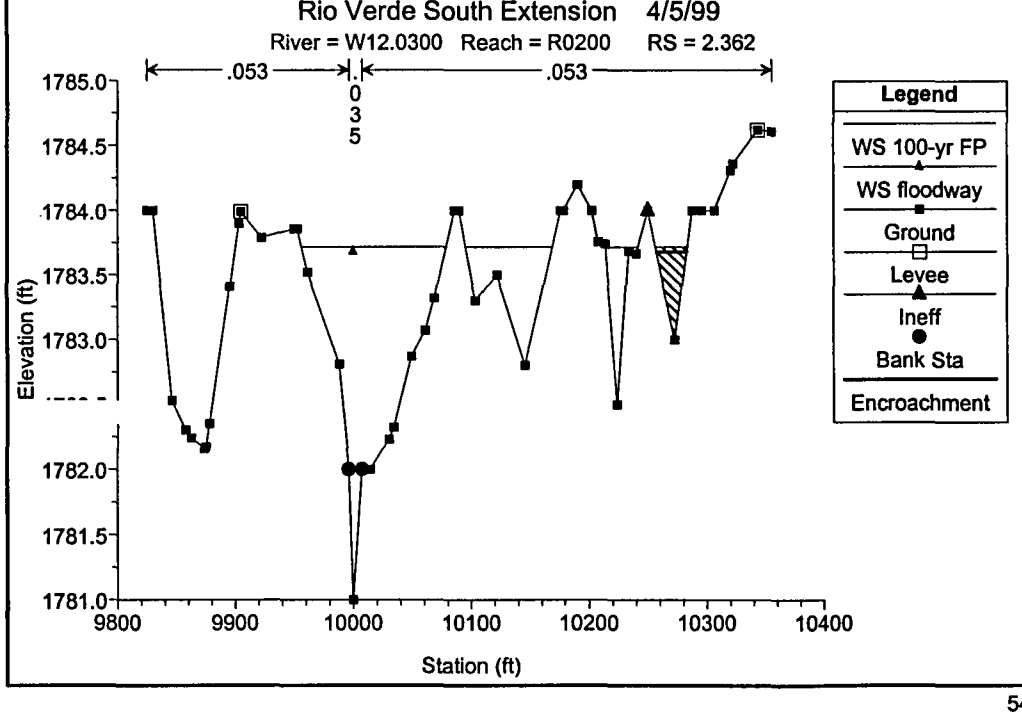

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0100 RS = 2.577
.053
.035
.053
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

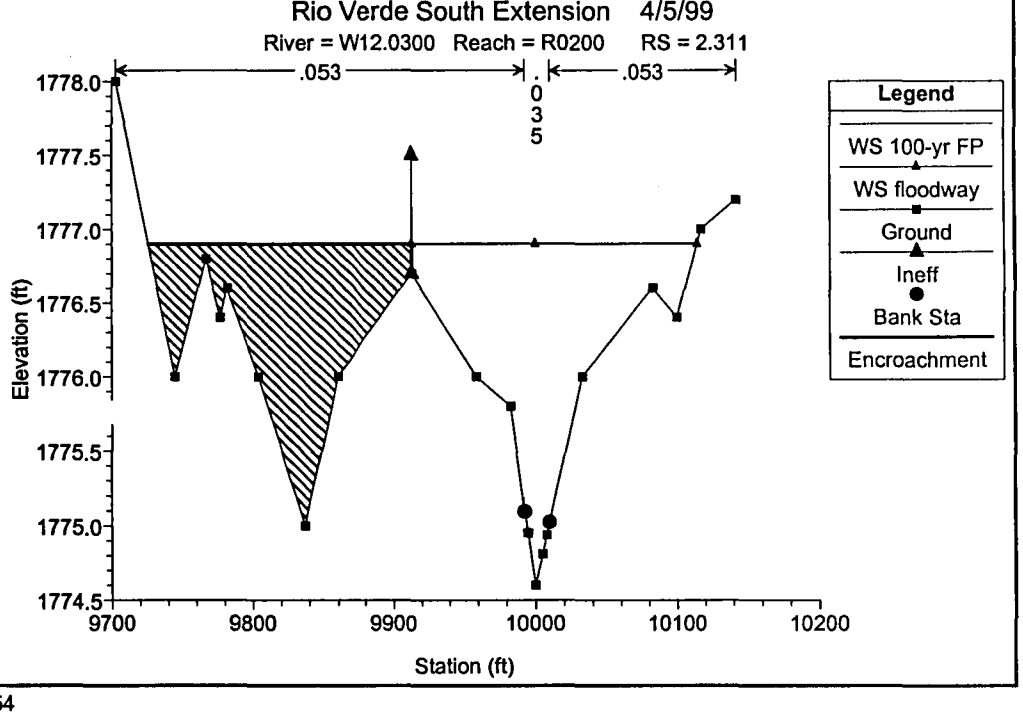

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0200 Q = 593 cfs = S12.0300R + W12.0400 RS = 2.516
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

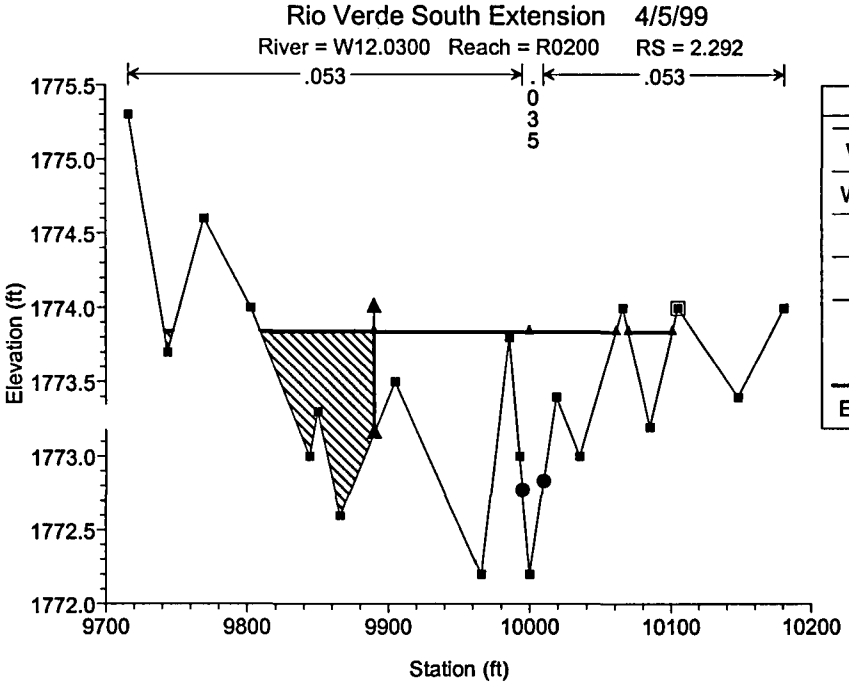

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0200 RS = 2.494
.053
.035
.053
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Elevation (ft)
Station (ft)

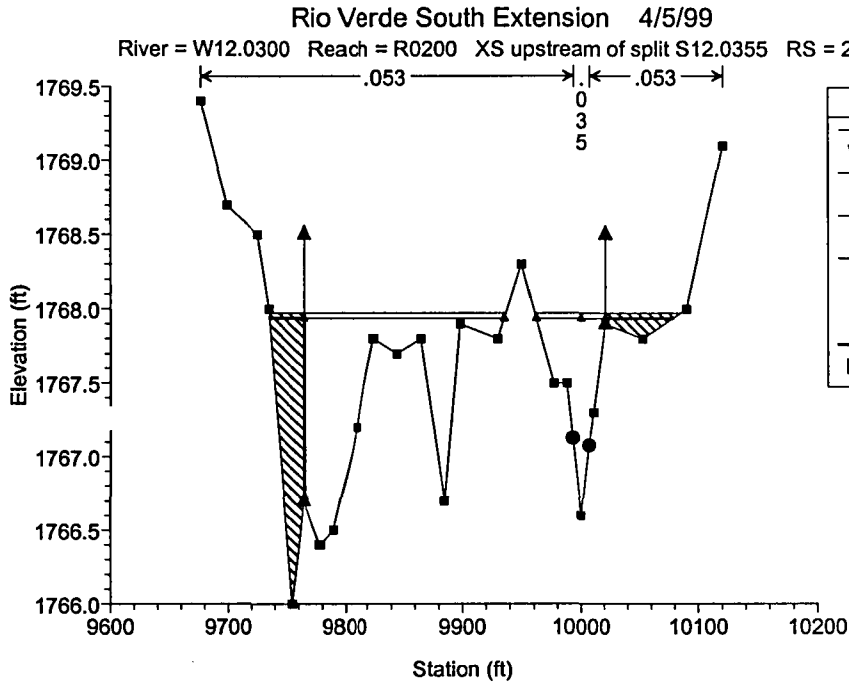

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0200 Q = 536 cfs decrease due to overflow at RS = 2.440
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

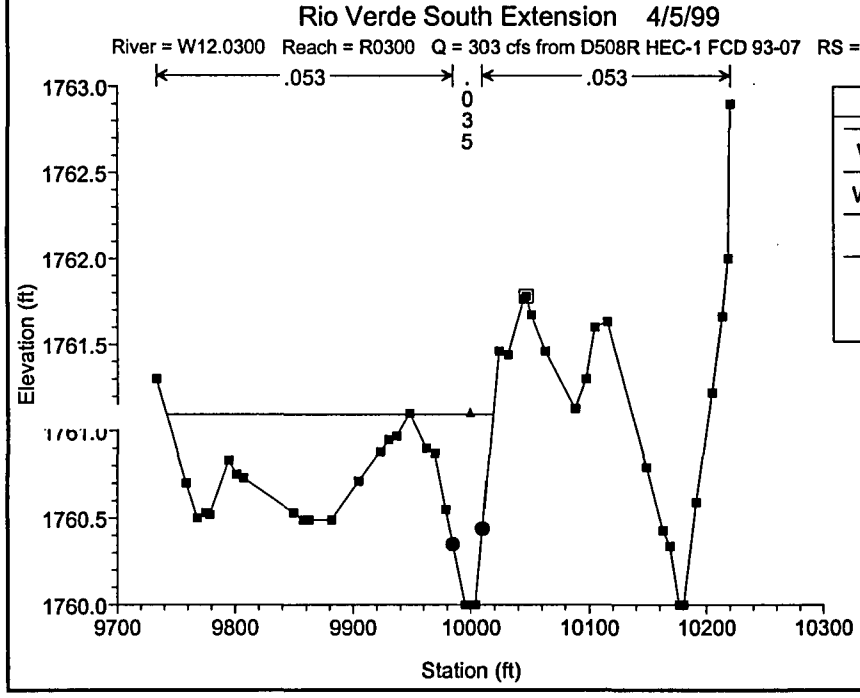

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0200 RS = 2.382
.053
.035
.053
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

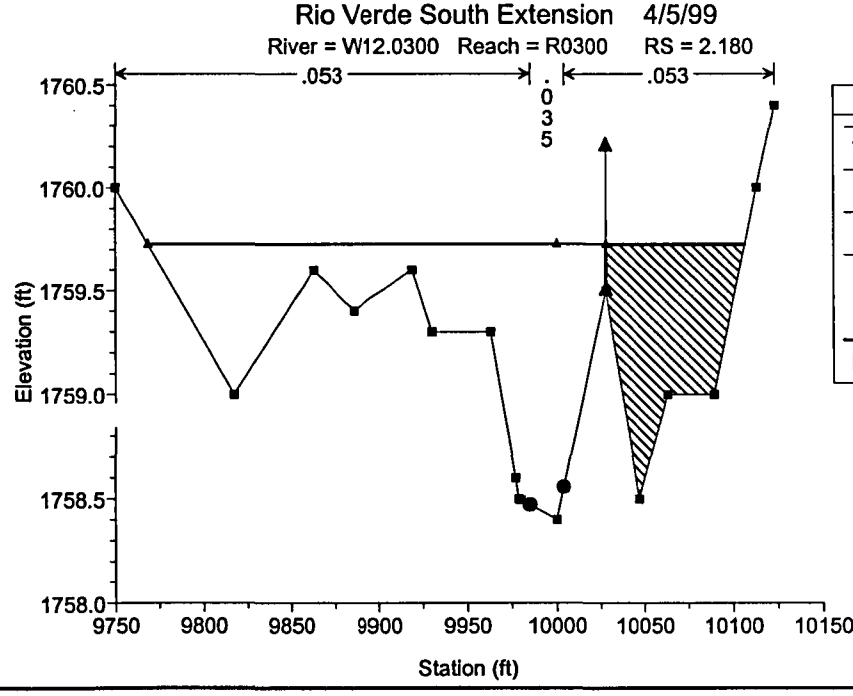

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0200 RS = 2.362
.053
.035
.053
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

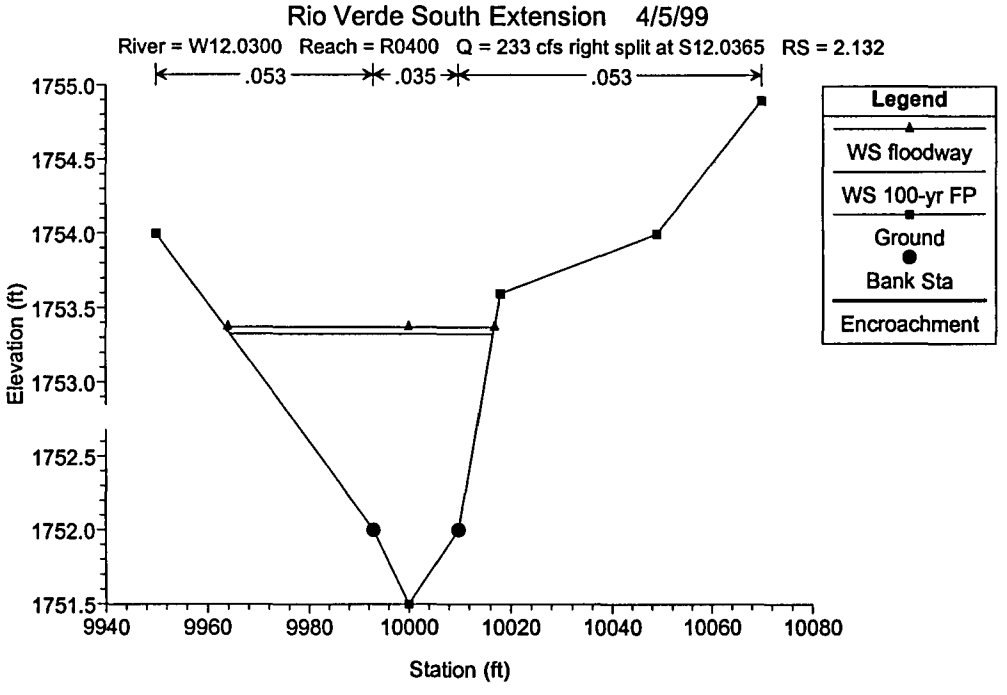

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0200 RS = 2.311
.053
.035
.053
Legend
WS 100-yr FP
WS floodway
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

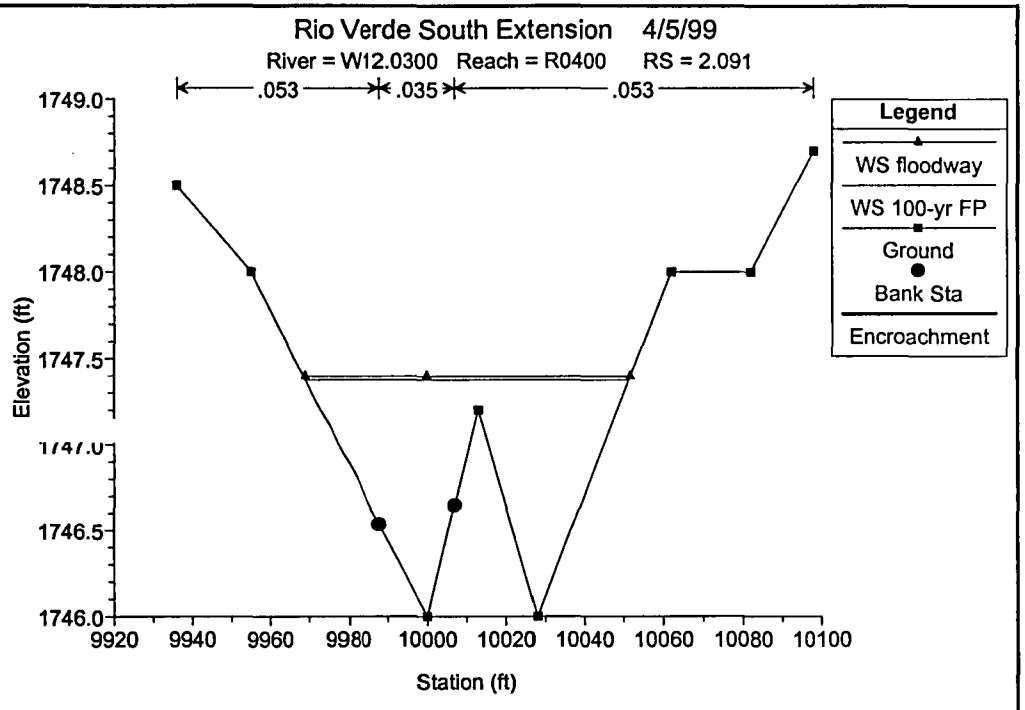

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0200 RS = 2.292
.053
.035
.053
Elevation (ft)
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Encroachment

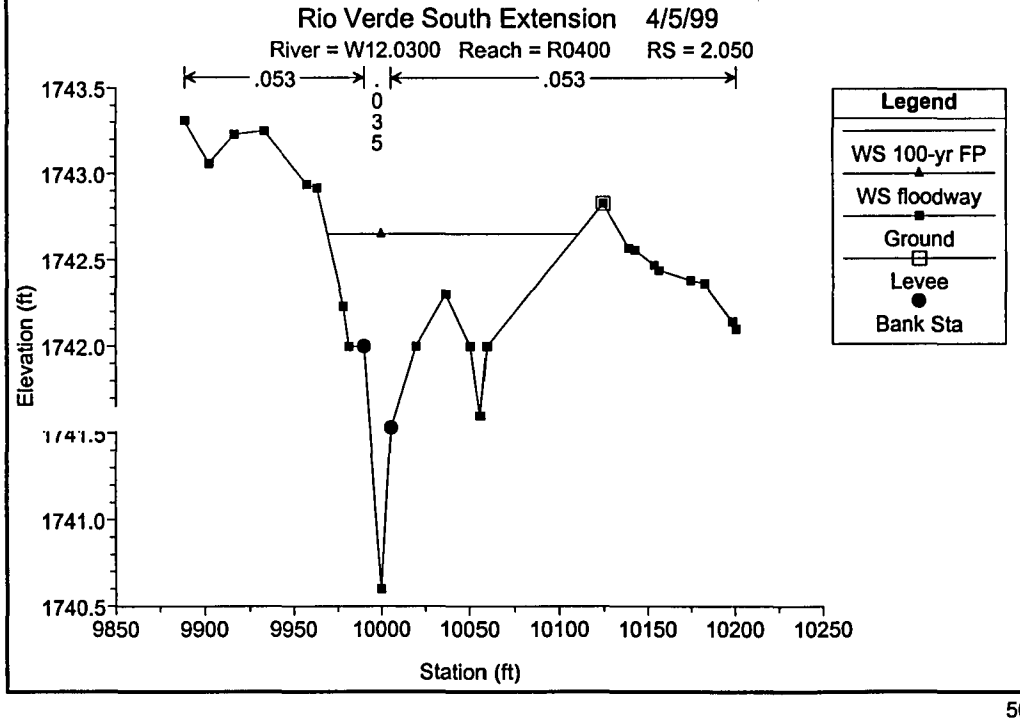

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0200 XS upstream of split S12.0355 RS = 2.246
.053
.035
.053
Elevation (ft)
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Ineff
Bank Sta
Encroachment

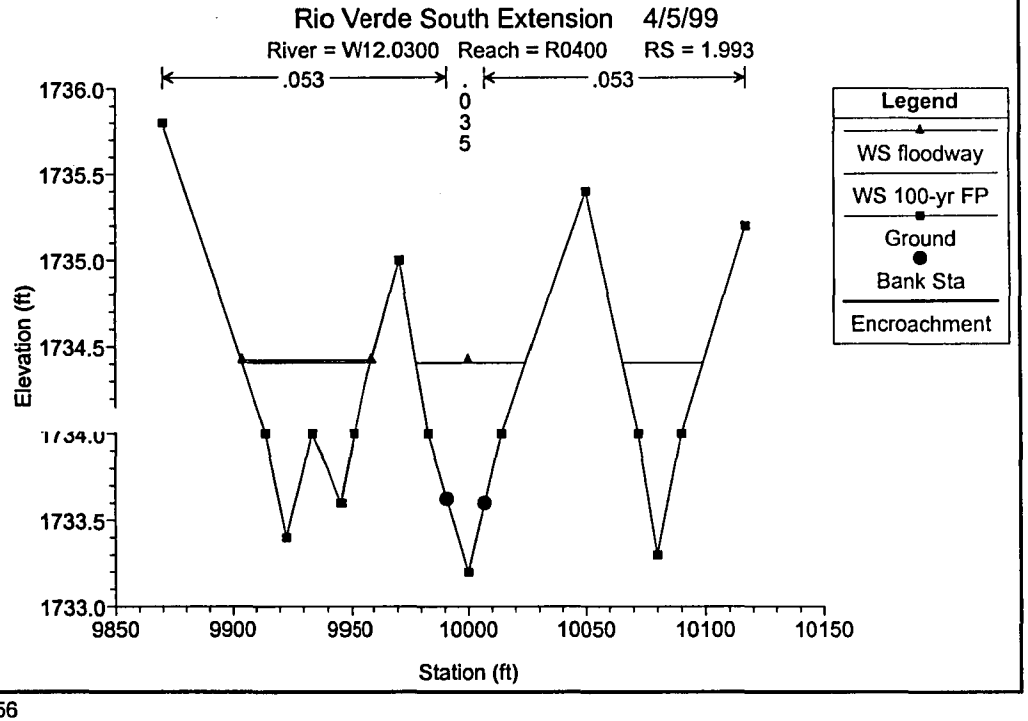

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0300 Q = 303 cfs from D508R HEC-1 FCD 93-07 RS = 2.191
.053
.035
.053
Elevation (ft)
Station (ft)
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta

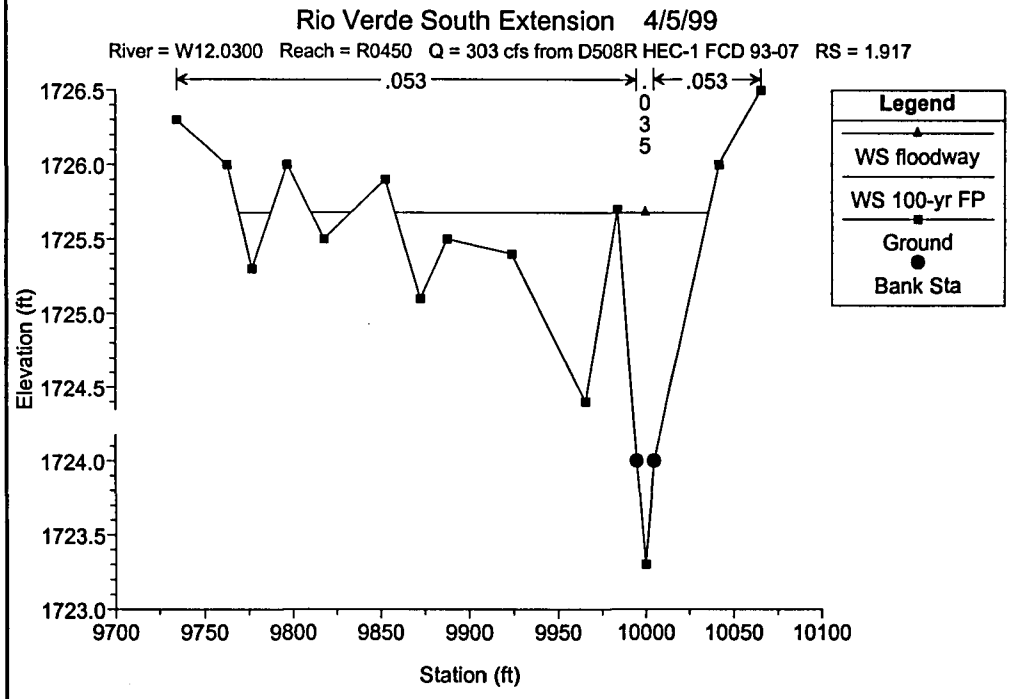

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0300 RS = 2.180
.053
.035
.053
Elevation (ft)
Station (ft)
Legend
WS 100-yr FP
WS floodway
Ground
Ineff
Bank Sta
Encroachment

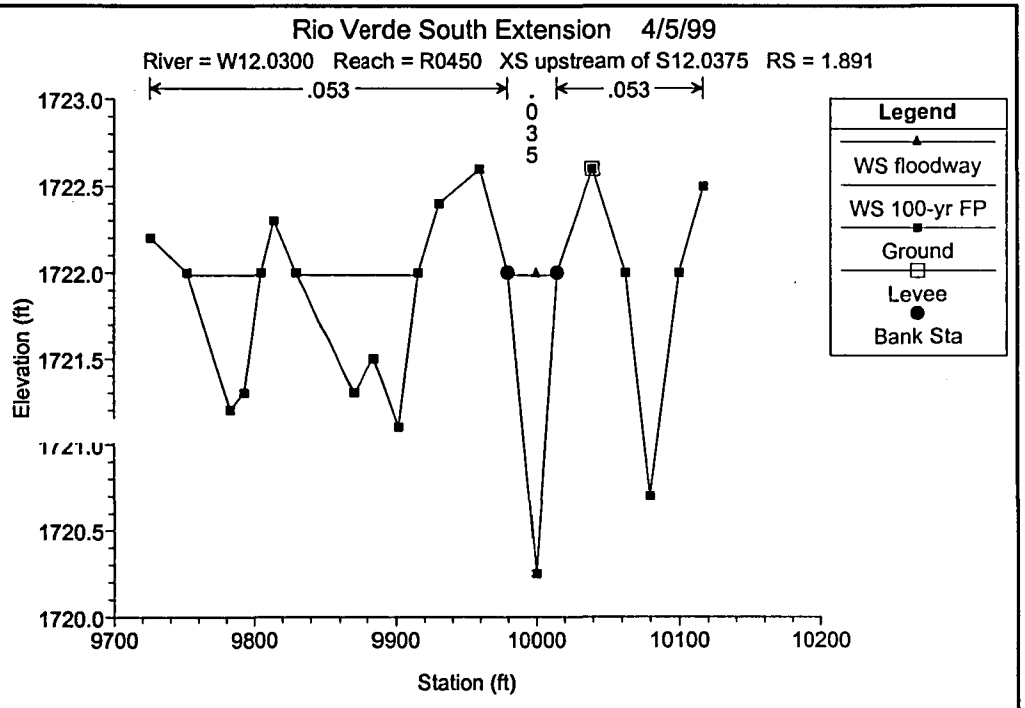

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0400 Q = 233 cfs right split at S12.0365 RS = 2.132
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

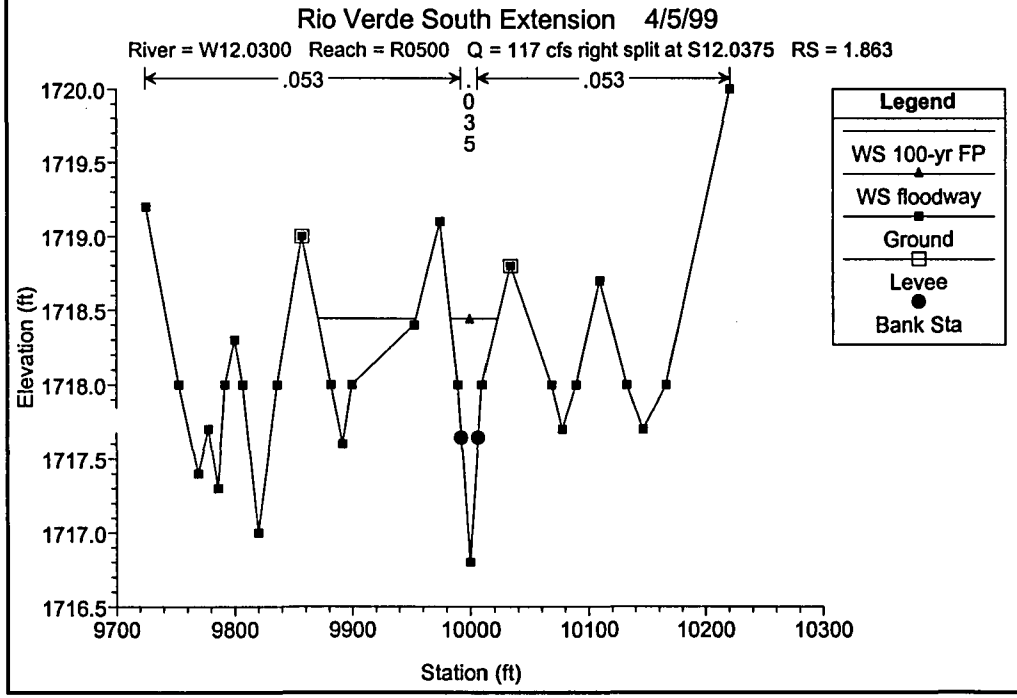

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0400 RS = 2.091
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

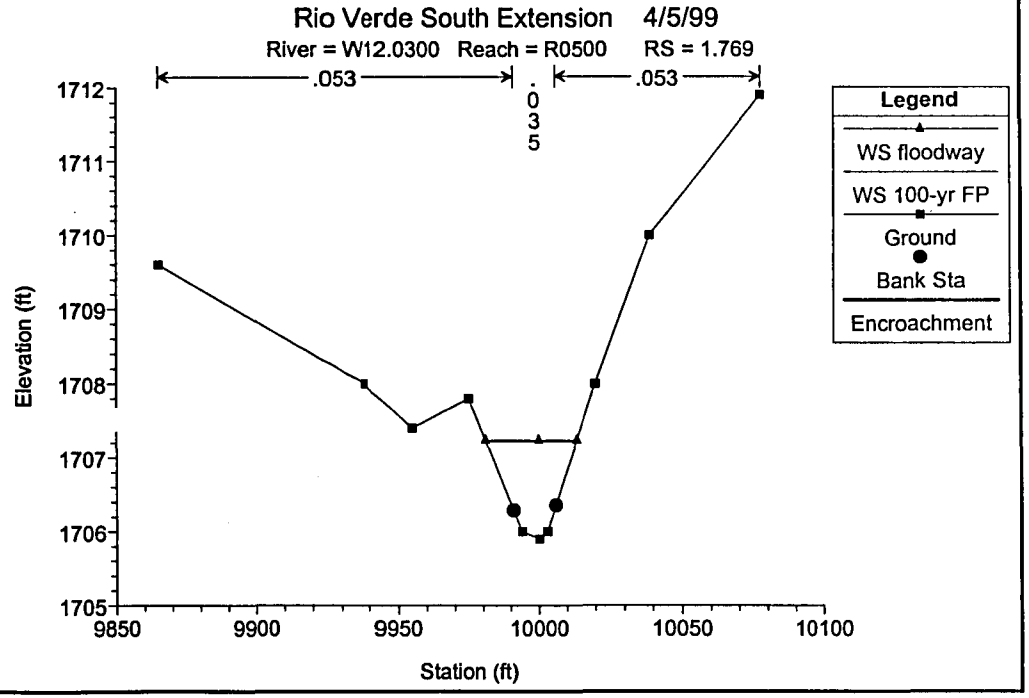

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0400 RS = 2.050
.053
.035
.053
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

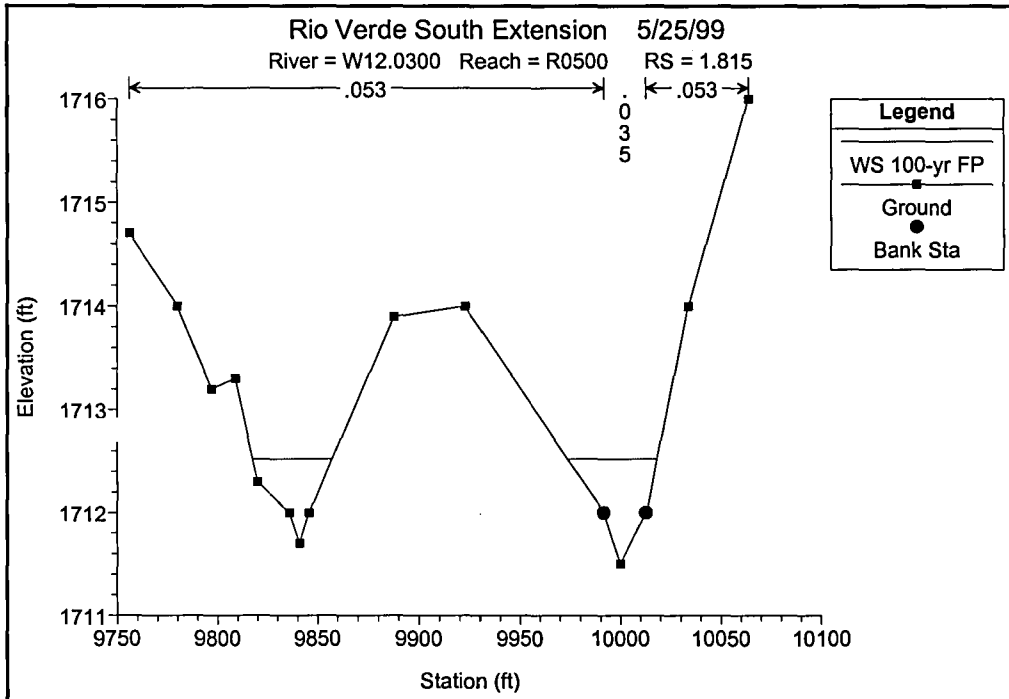

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0400 RS = 1.993
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

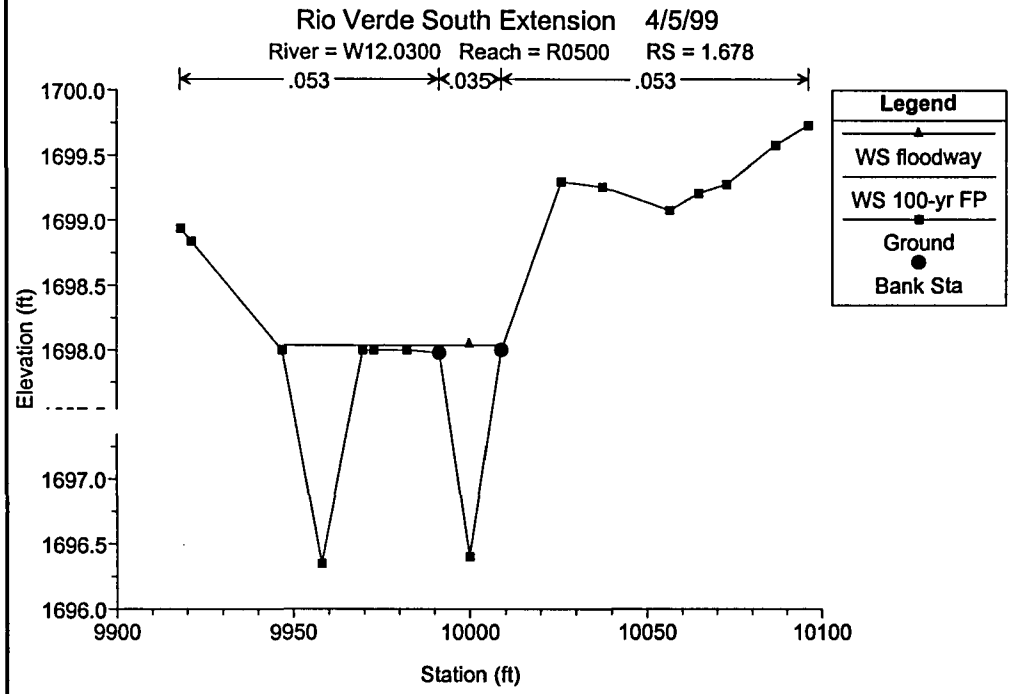

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0450 Q = 303 cfs from D508R HEC-1 FCD 93-07 RS = 1.917
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

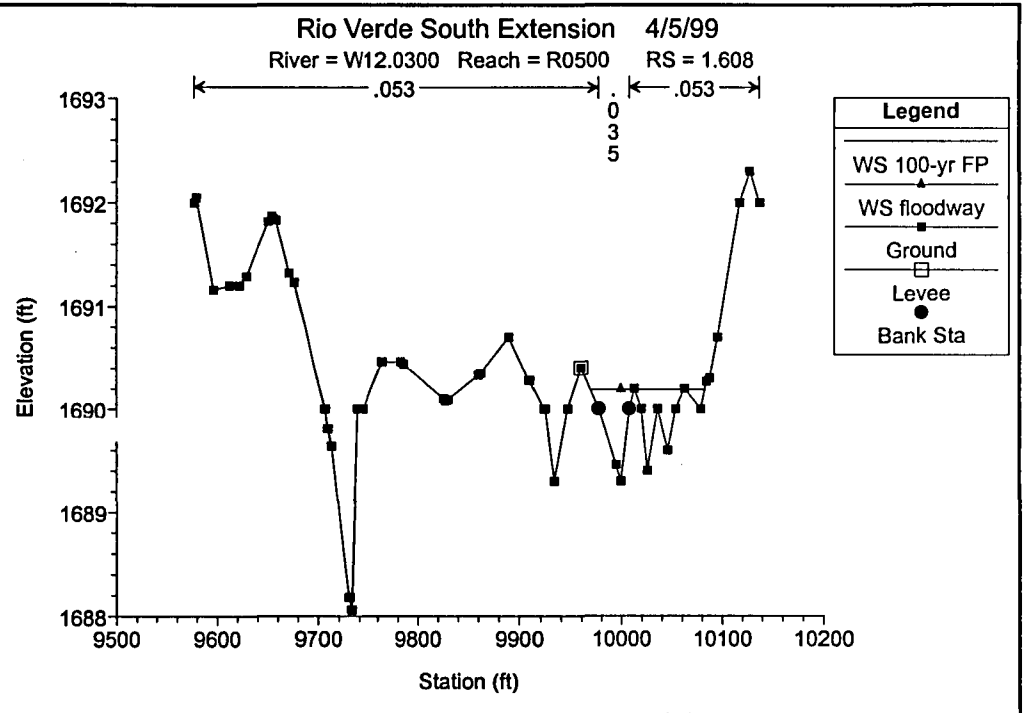

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0450 XS upstream of S12.0375 RS = 1.891
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

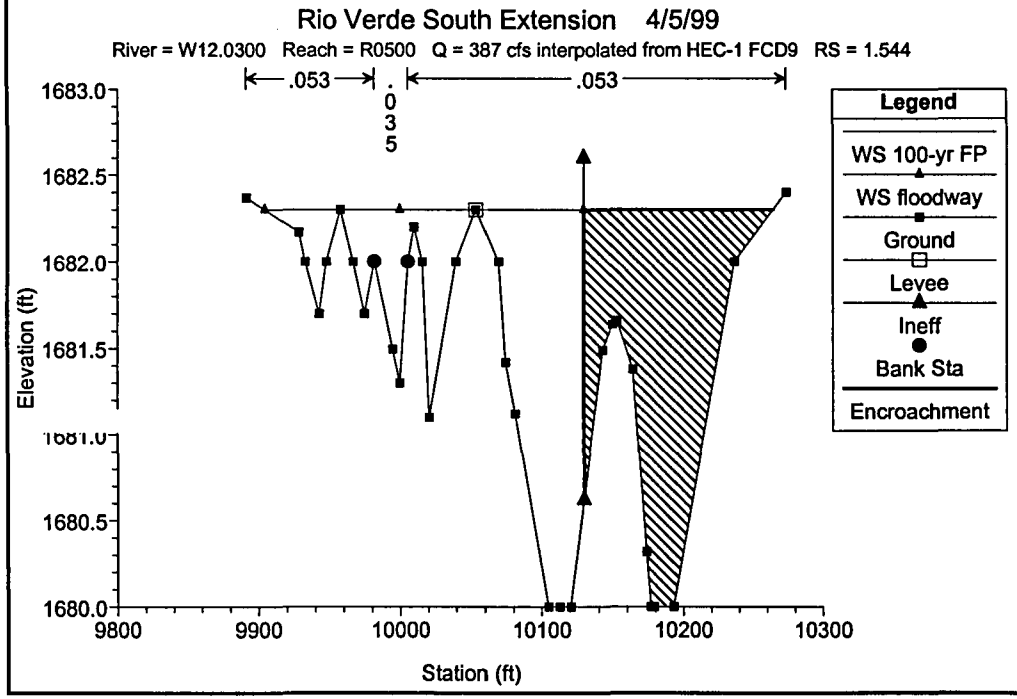

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0500 Q = 117 cfs right split at S12.0375 RS = 1.863
.053
.035
.053
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

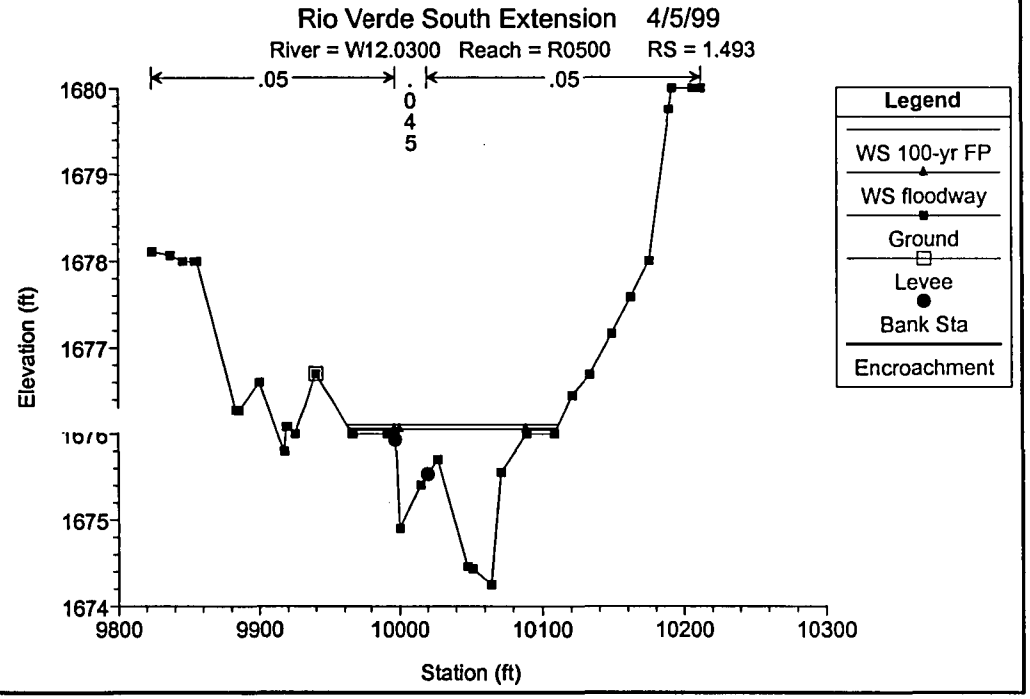

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0500 RS = 1.769
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

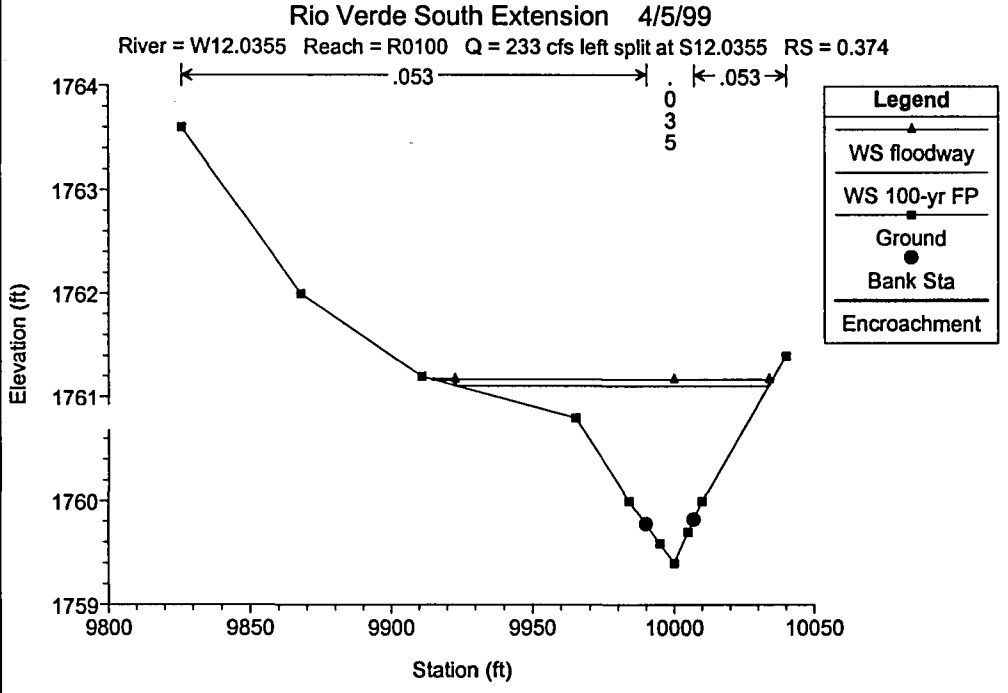

Rio Verde South Extension 5/25/99
River = W12.0300 Reach = R0500 RS = 1.815
.053
.035
.053
Legend
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
1716
1715
1714
1713
1712
1711
9750
9800
9850
9900
9950
10000
10050
10100
Station (ft)

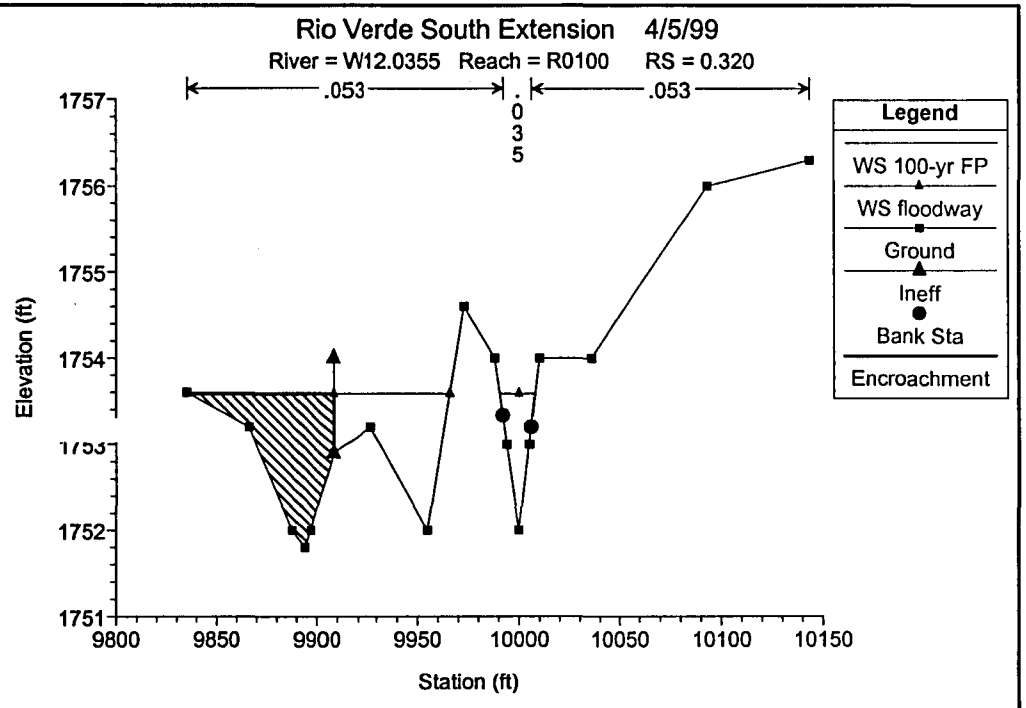

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0500 RS = 1.678
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

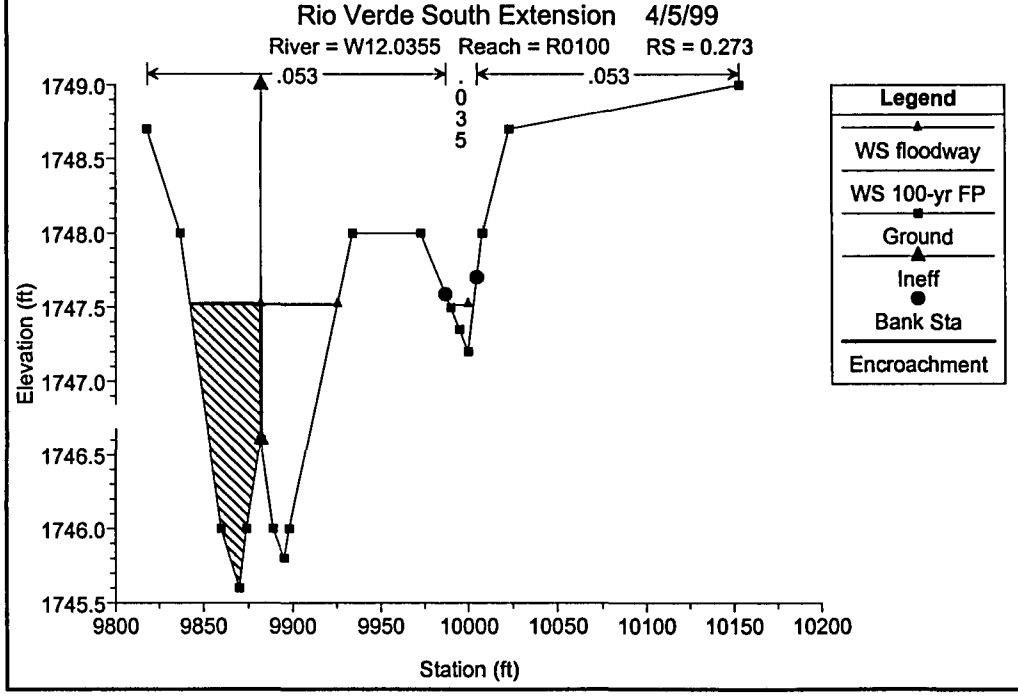

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0500 RS = 1.608
.053
.035
.053
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

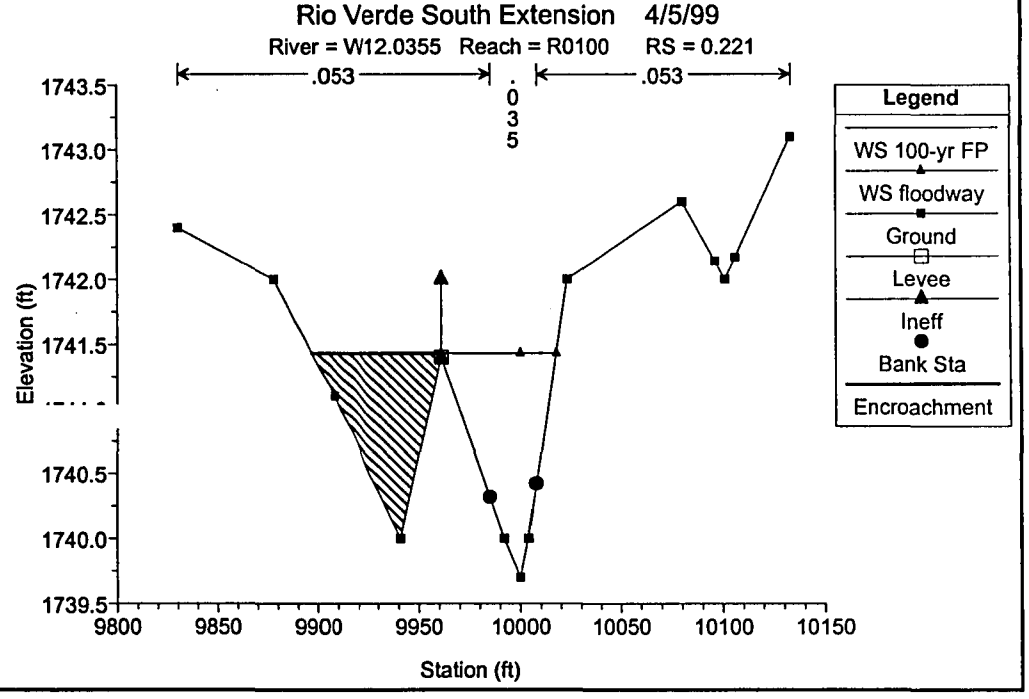

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0500 Q = 387 cfs interpolated from HEC-1 FCD9 RS = 1.544
.053
.035
.053
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

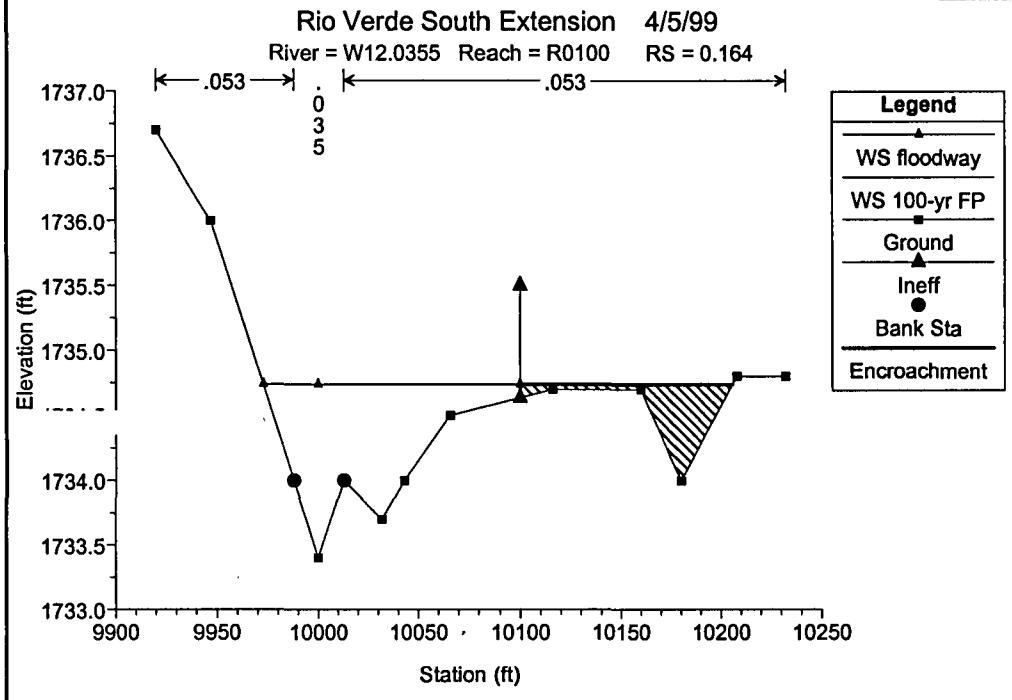

Rio Verde South Extension 4/5/99
River = W12.0300 Reach = R0500 RS = 1.493
.05
.045
.05
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

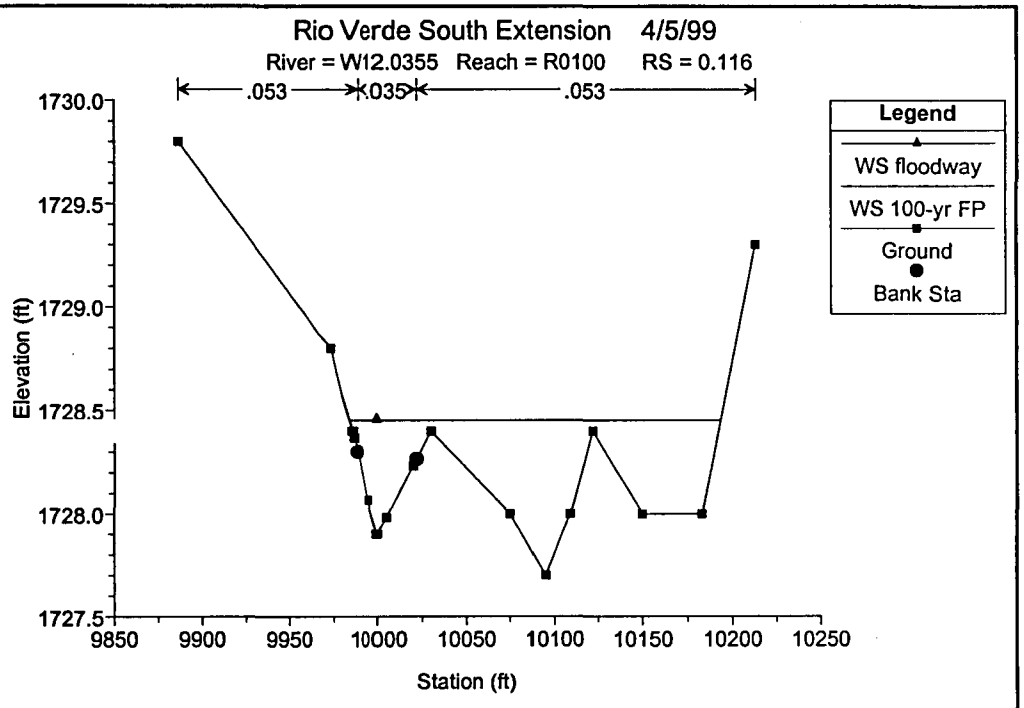

Rio Verde South Extension 4/5/99
River = W12.0355 Reach = R0100 Q = 233 cfs left split at S12.0355 RS = 0.374
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

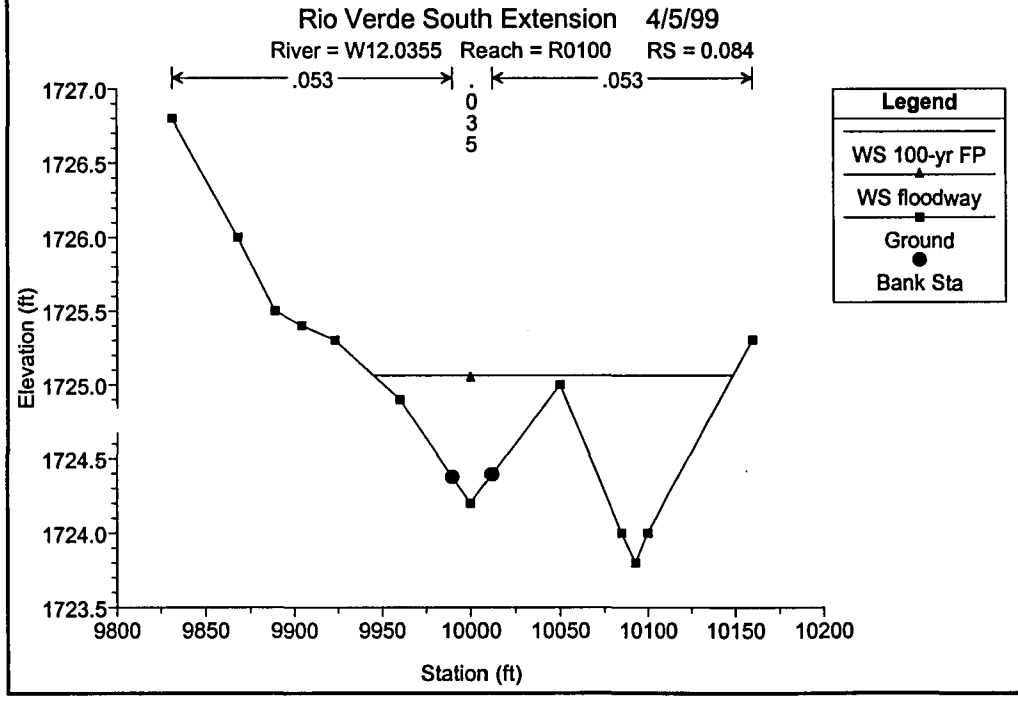

Rio Verde South Extension 4/5/99
River = W12.0355 Reach = R0100 RS = 0.320
.053
.035
.053
Legend
WS 100-yr FP
WS floodway
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

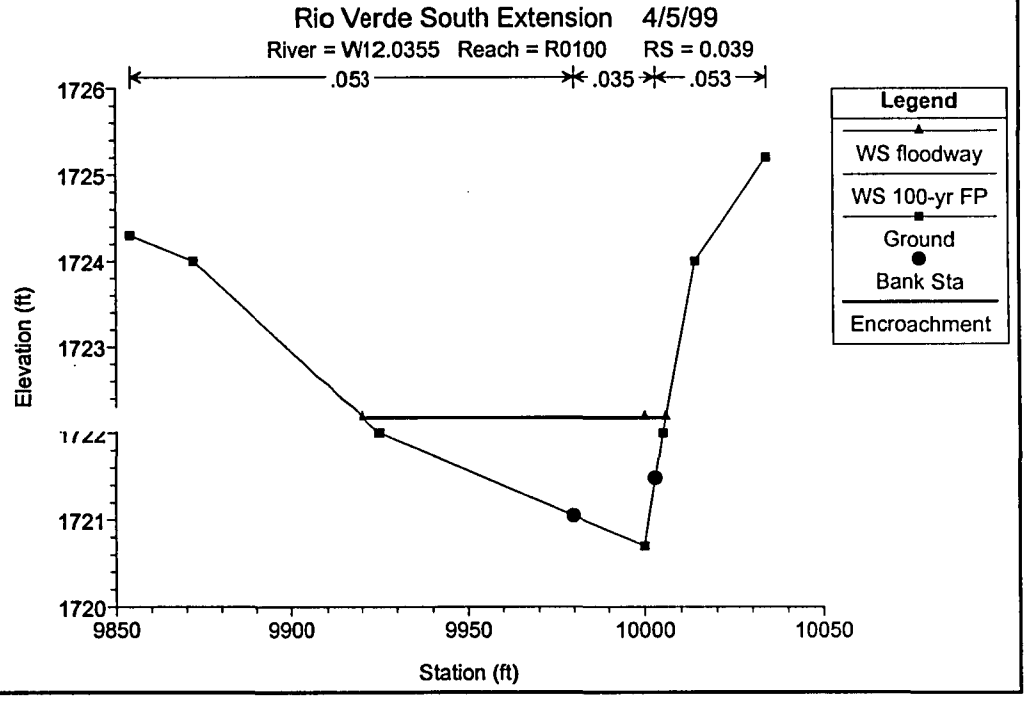

Rio Verde South Extension 4/5/99
River = W12.0355 Reach = R0100 RS = 0.273
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

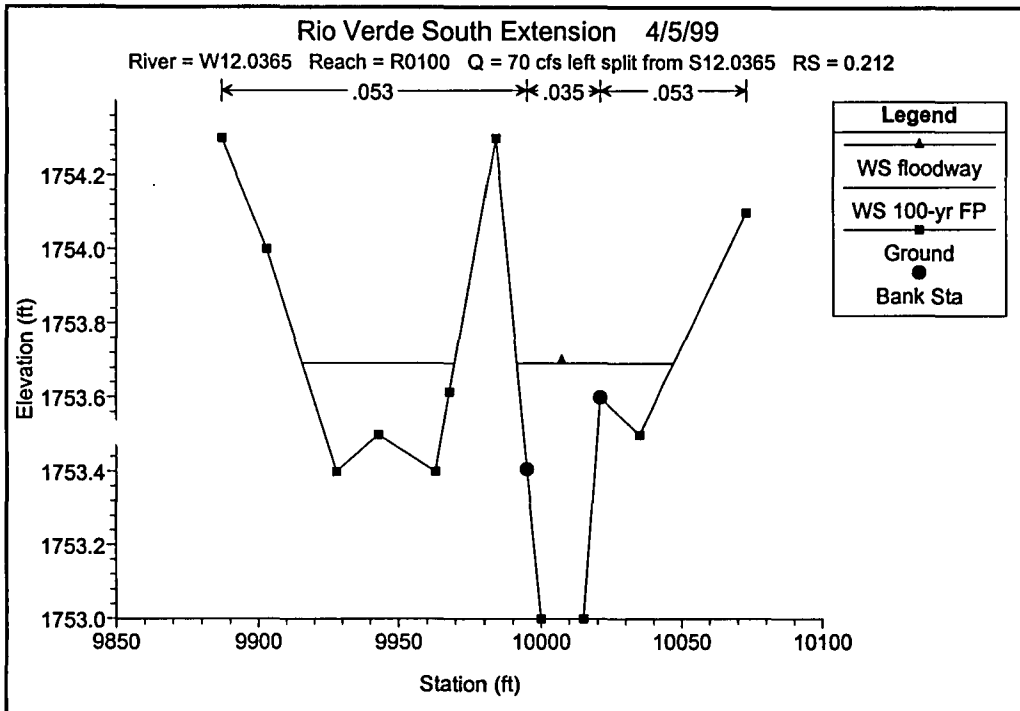

Rio Verde South Extension 4/5/99
River = W12.0355 Reach = R0100 RS = 0.221
.053
.035
.053
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

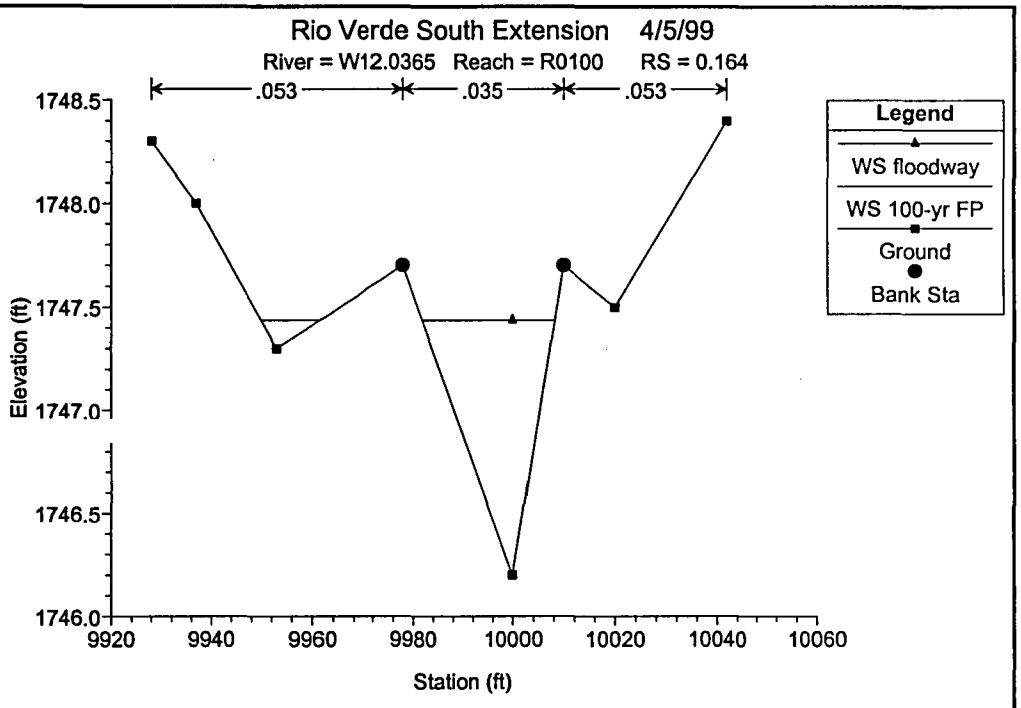

Rio Verde South Extension 4/5/99
River = W12.0355 Reach = R0100 RS = 0.164
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

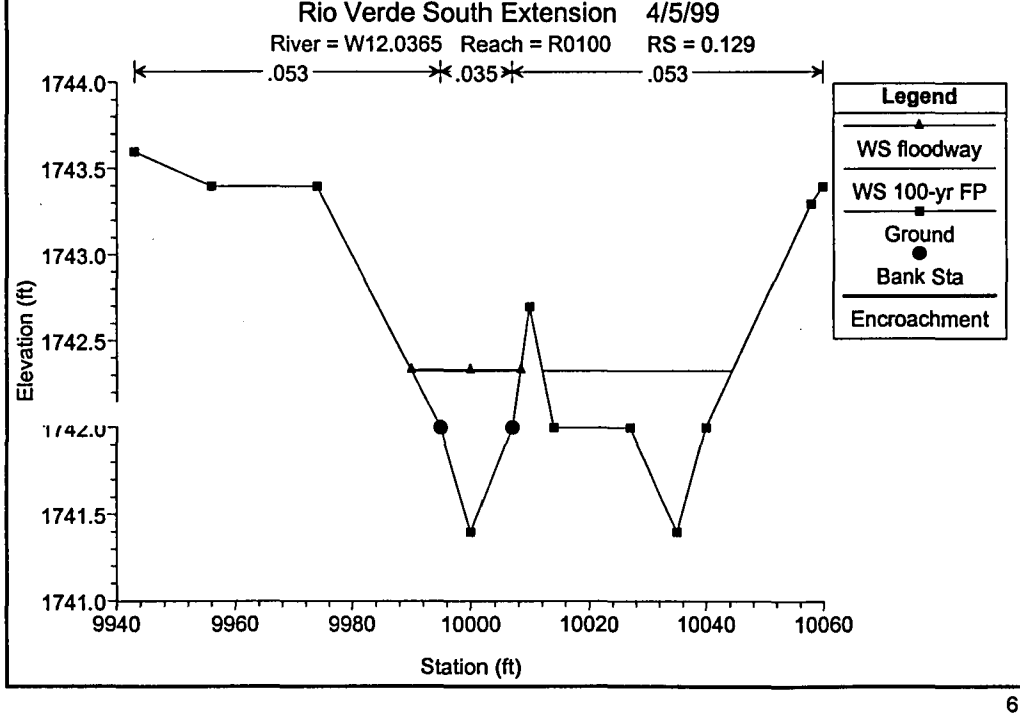

Rio Verde South Extension 4/5/99
River = W12.0355 Reach = R0100 RS = 0.116
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

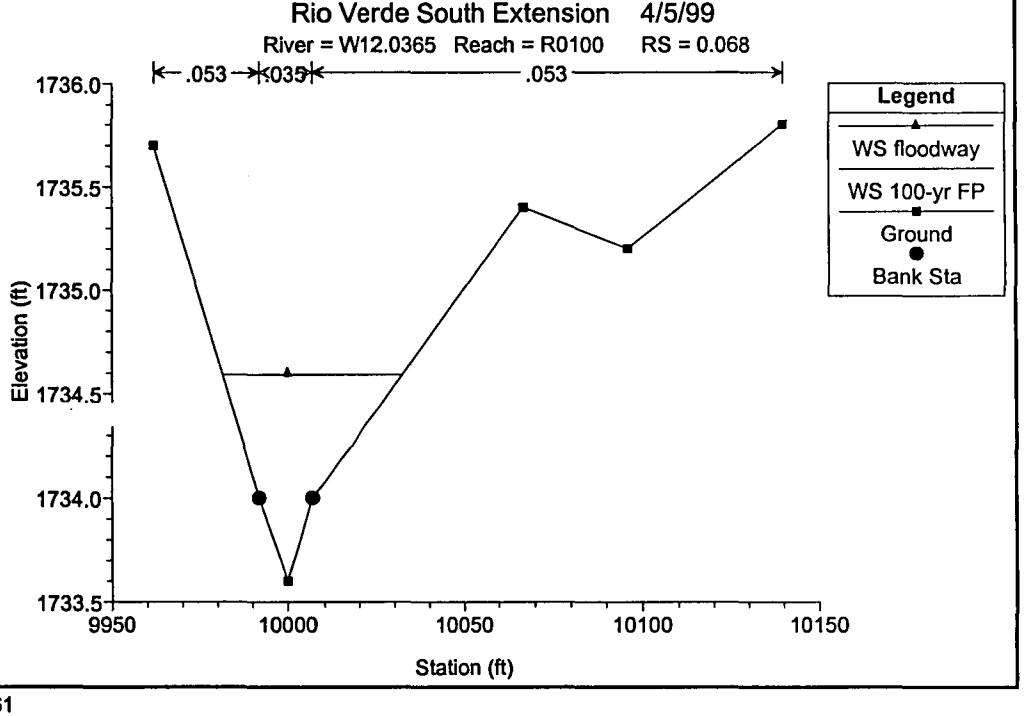

Rio Verde South Extension 4/5/99
River = W12.0355 Reach = R0100 RS = 0.084
.053
.035
.053
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Elevation (ft)
Station (ft)

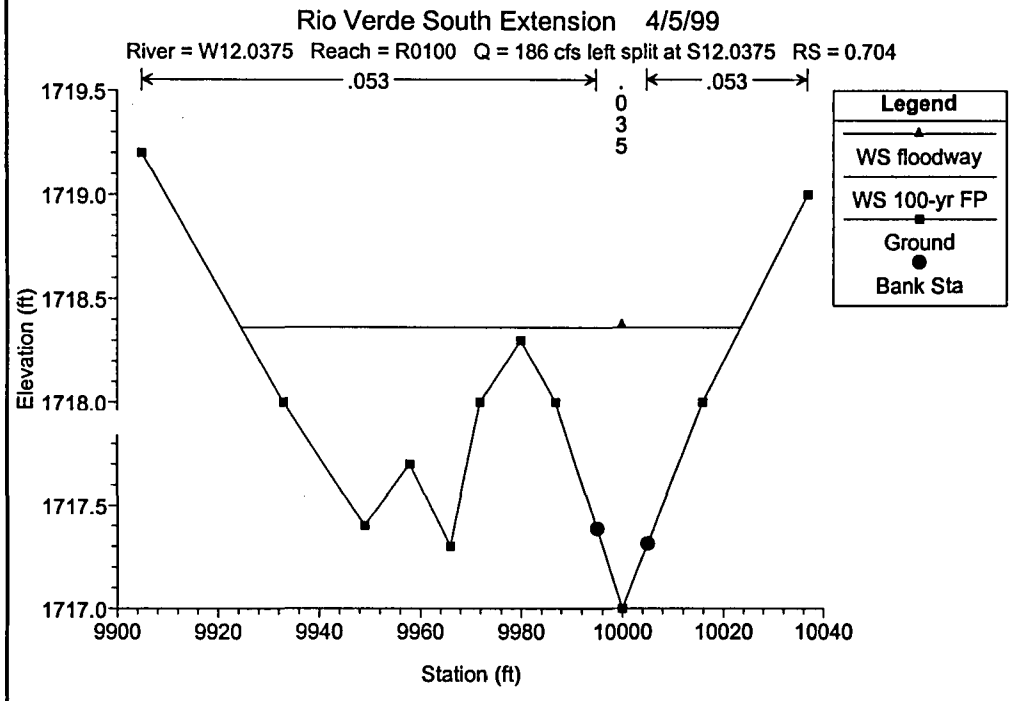

Rio Verde South Extension 4/5/99
River = W12.0355 Reach = R0100 RS = 0.039
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

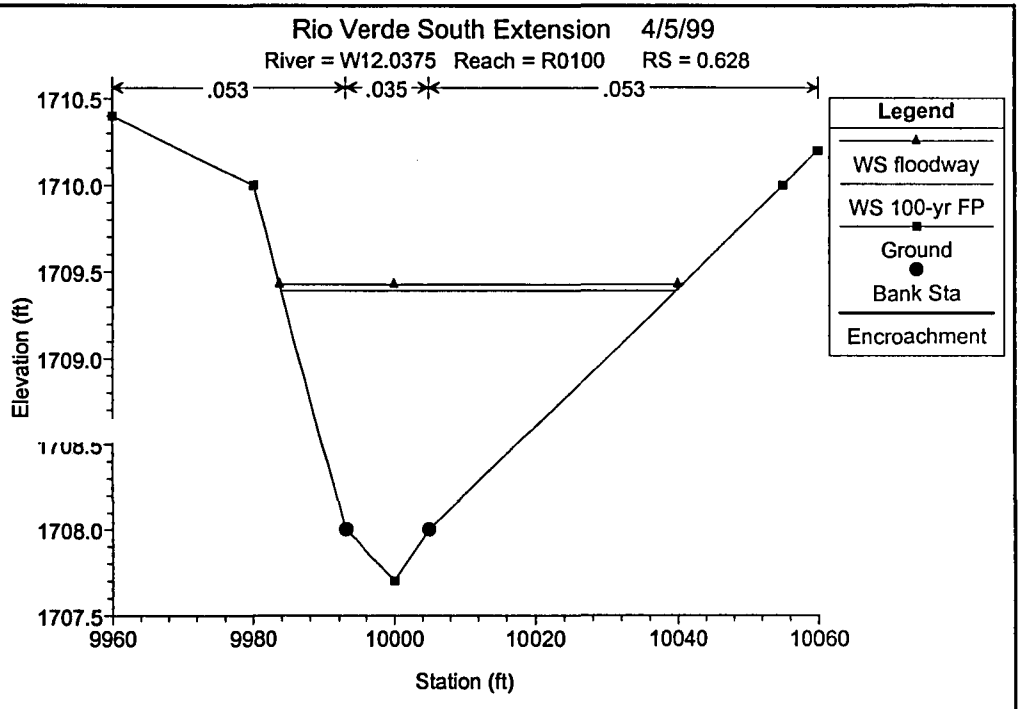

Rio Verde South Extension 4/5/99
River = W12.0365 Reach = R0100 Q = 70 cfs left split from S12.0365 RS = 0.212
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
1754.2
1754.0
1753.8
1753.6
1753.4
1753.2
1753.0
9850
9900
9950
10000
10050
10100
Station (ft)

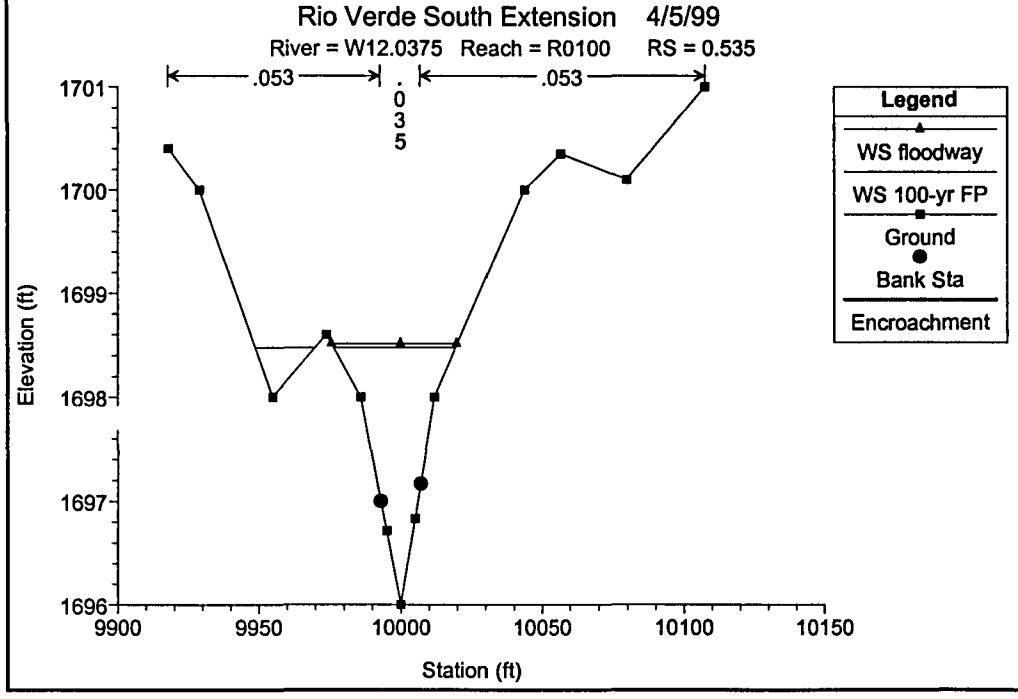

Rio Verde South Extension 4/5/99
River = W12.0365 Reach = R0100 RS = 0.164
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
1748.5
1748.0
1747.5
1747.0
1746.5
1746.0
9920
9940
9960
9980
10000
10020
10040
10060
Station (ft)

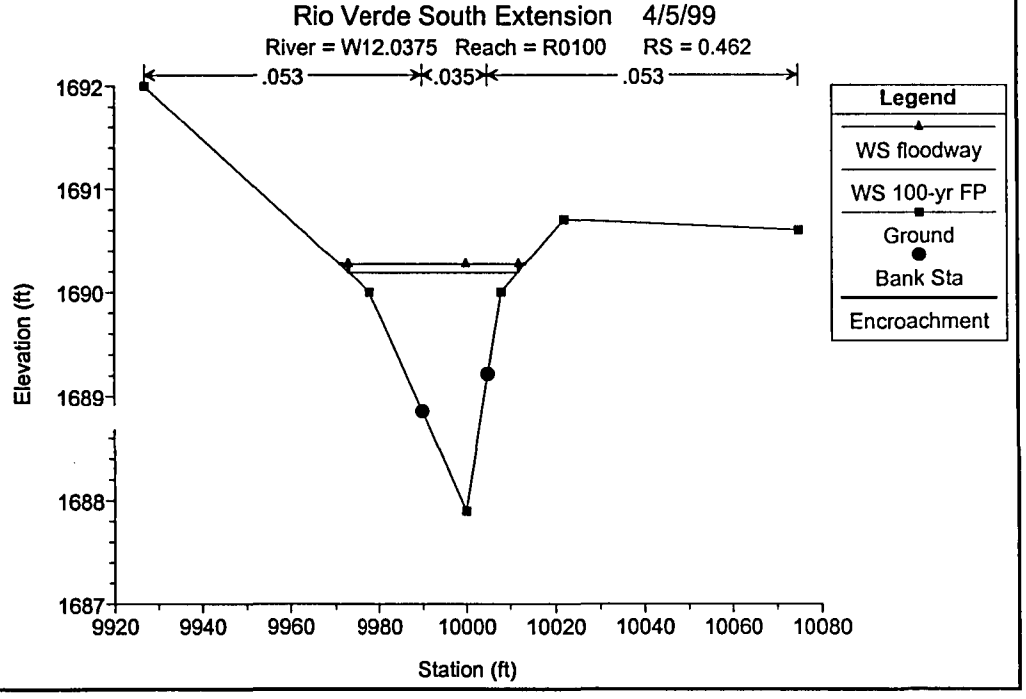

Rio Verde South Extension 4/5/99
River = W12.0365 Reach = R0100 RS = 0.129
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
1744.0
1743.5
1743.0
1742.5
1742.0
1741.5
1741.0
9940
9960
9980
10000
10020
10040
10060
Station (ft)

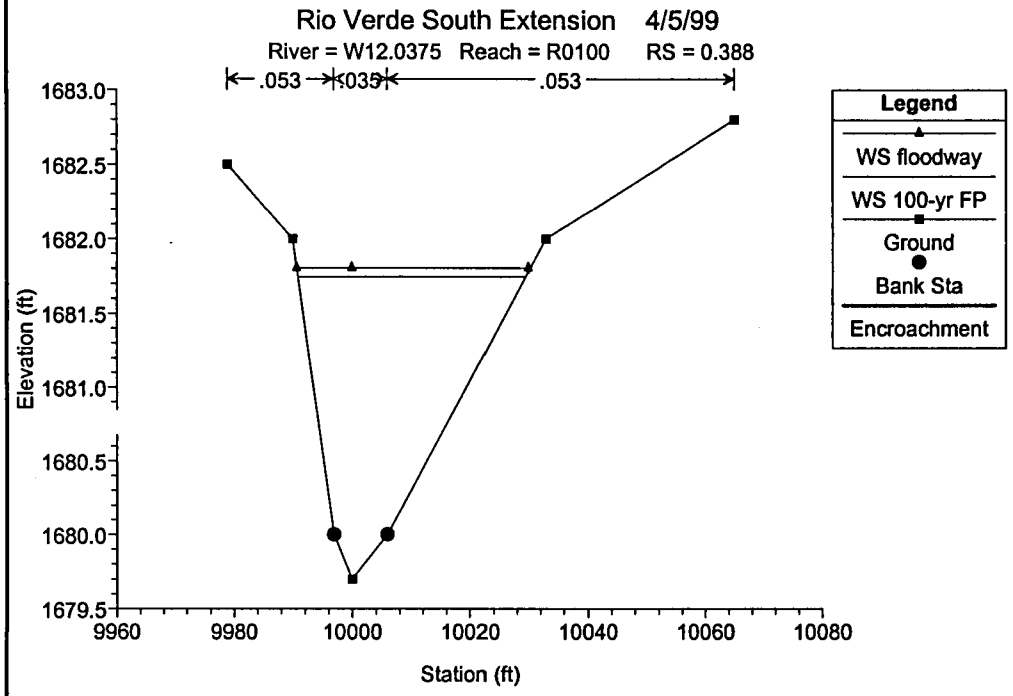

Rio Verde South Extension 4/5/99
River = W12.0365 Reach = R0100 RS = 0.068
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
1736.0
1735.5
1735.0
1734.5
1734.0
1733.5
9950
10000
10050
10100
10150
Station (ft)

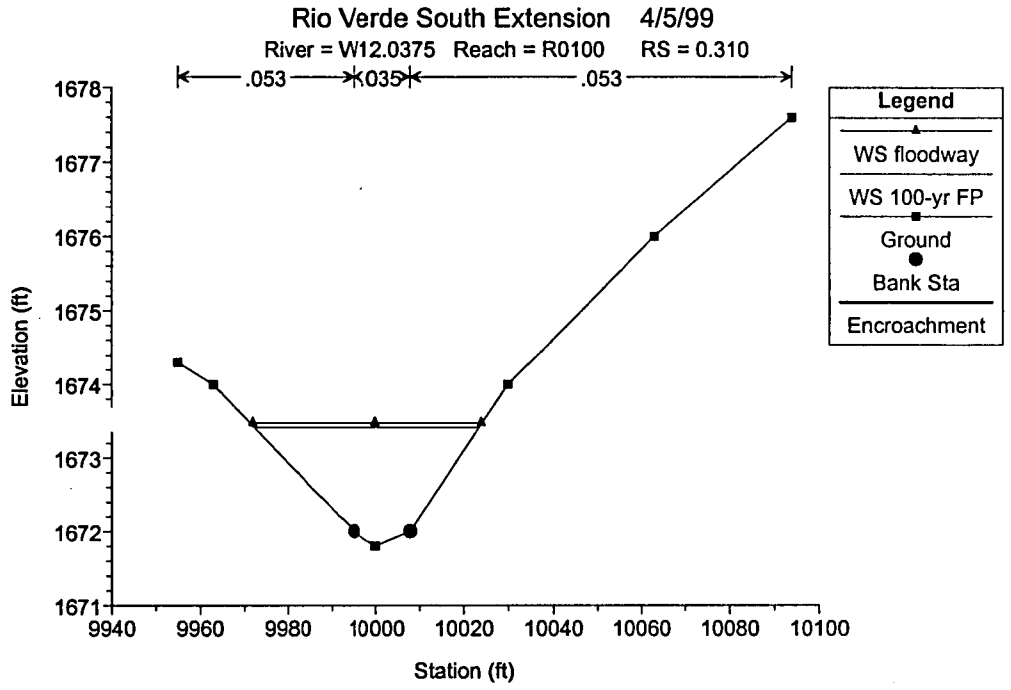

Rio Verde South Extension 4/5/99
River = W12.0375 Reach = R0100 Q = 186 cfs left split at S12.0375 RS = 0.704
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

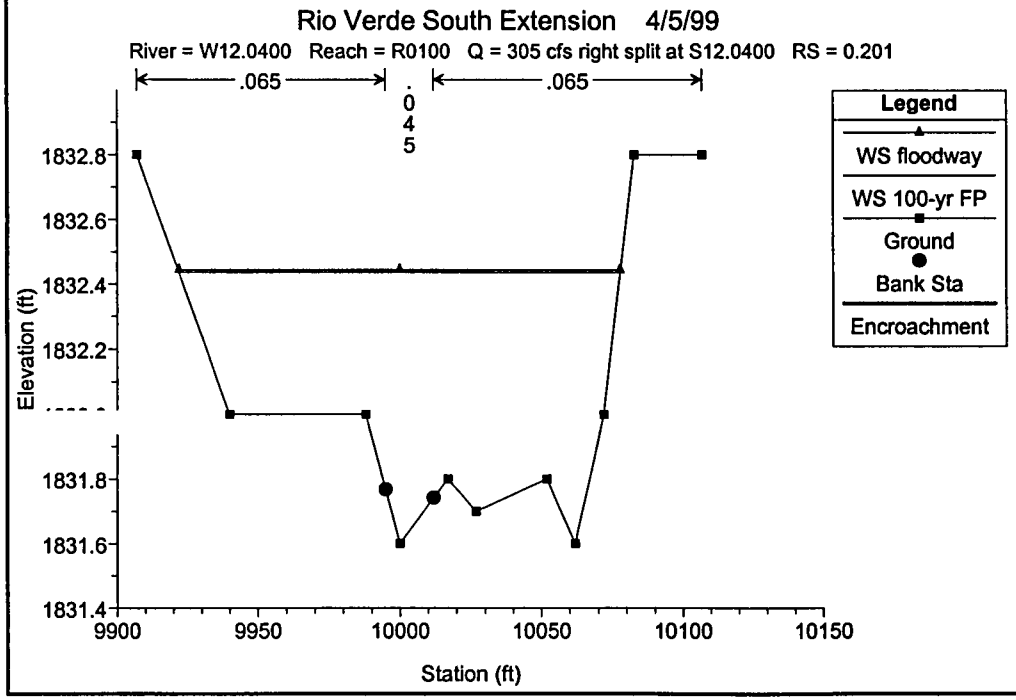

Rio Verde South Extension 4/5/99
River = W12.0375 Reach = R0100 RS = 0.628
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

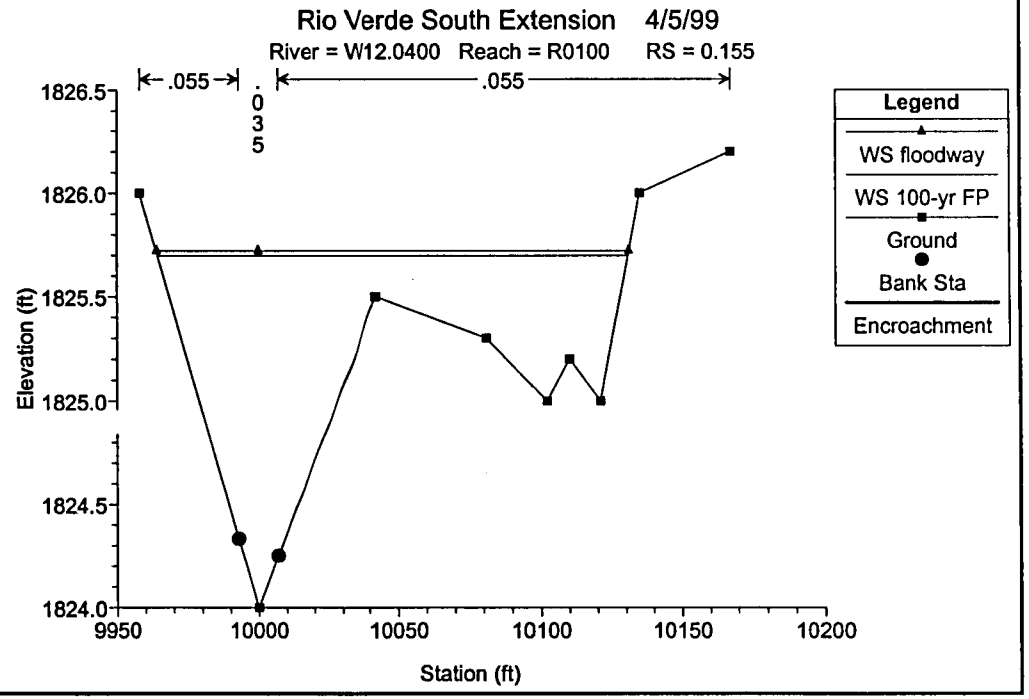

Rio Verde South Extension 4/5/99
River = W12.0375 Reach = R0100 RS = 0.535
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

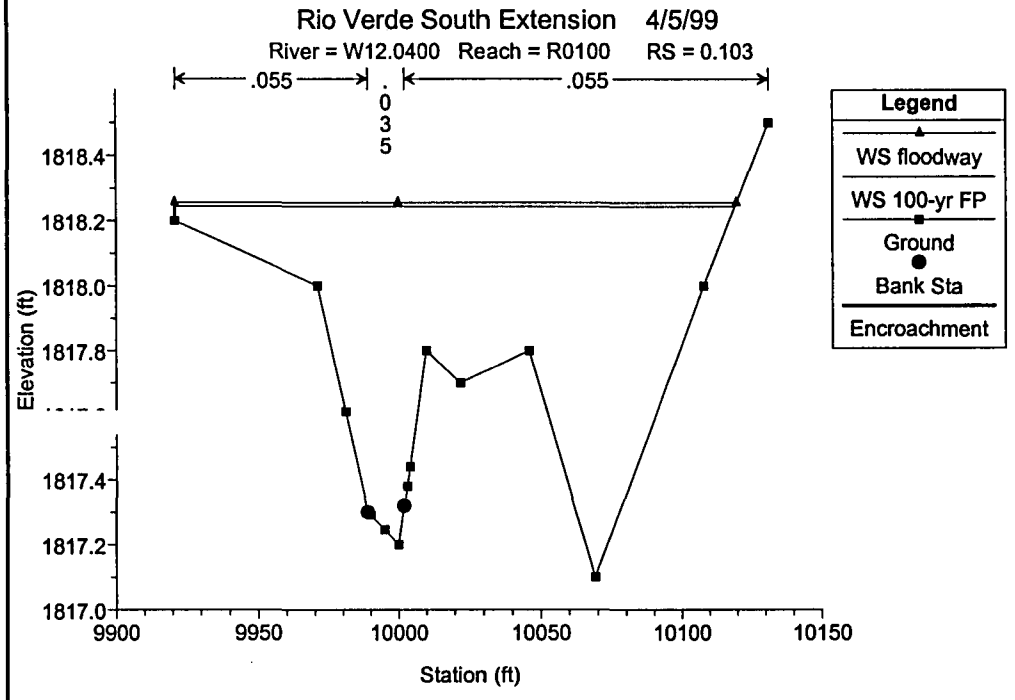

Rio Verde South Extension 4/5/99
River = W12.0375 Reach = R0100 RS = 0.462
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

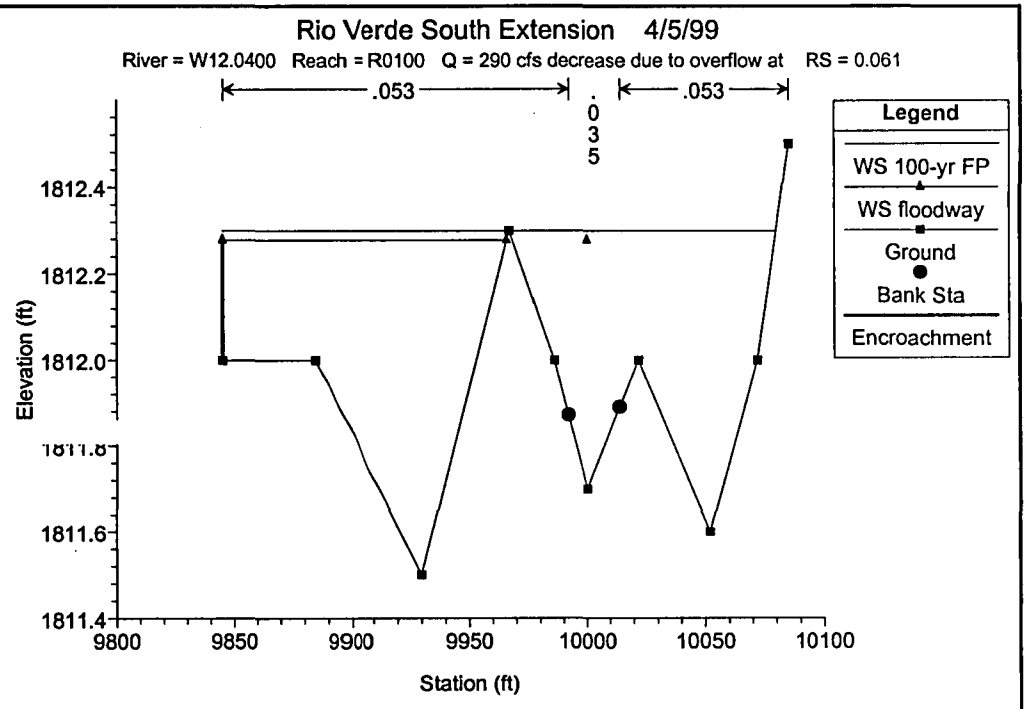

Rio Verde South Extension 4/5/99
River = W12.0375 Reach = R0100 RS = 0.388
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

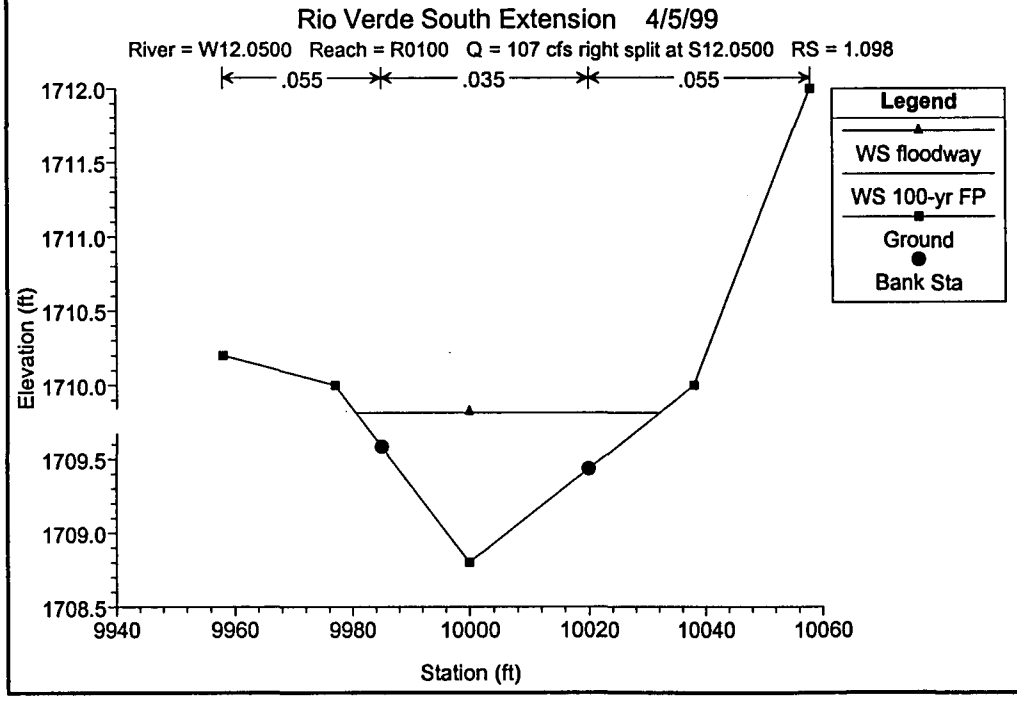

Rio Verde South Extension 4/5/99
River = W12.0375 Reach = R0100 RS = 0.310
.053
.035
.053
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

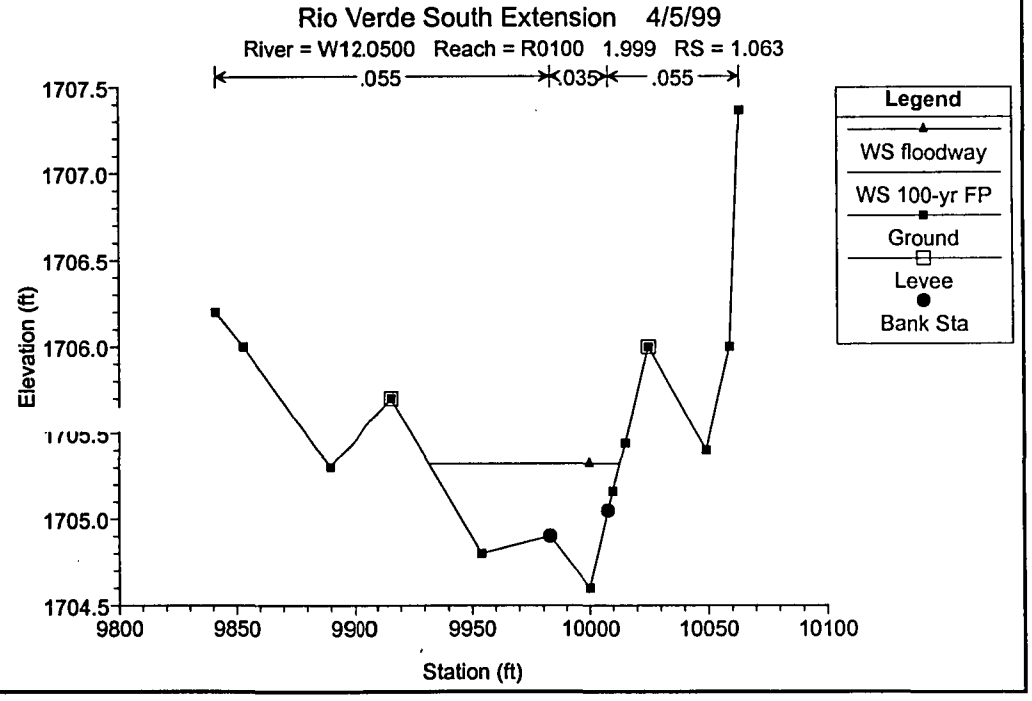

Rio Verde South Extension 4/5/99
River = W12.0400 Reach = R0100 Q = 305 cfs right split at S12.0400 RS = 0.201
.065
.045
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

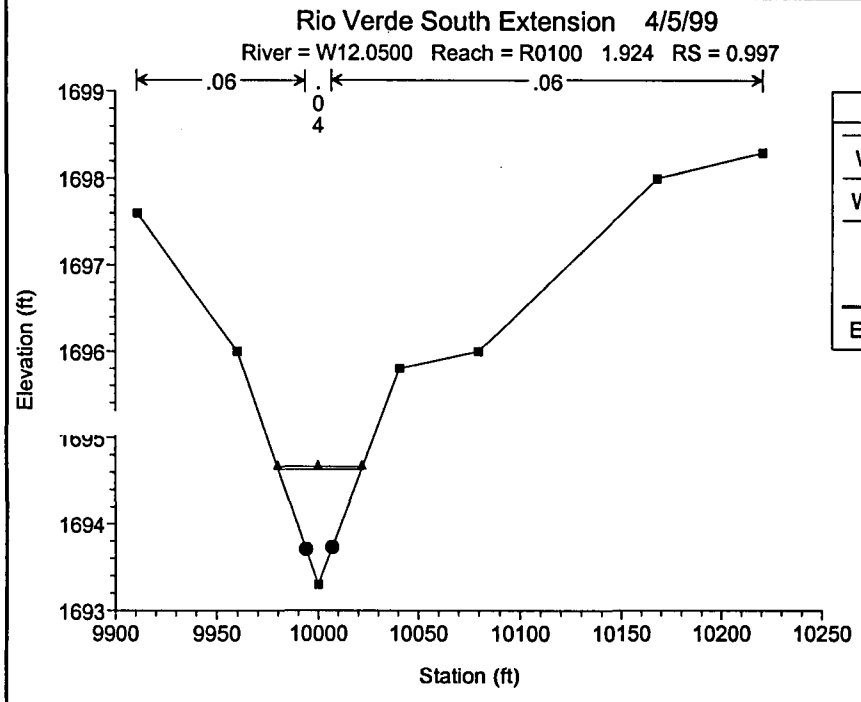

Rio Verde South Extension 4/5/99
River = W12.0400 Reach = R0100 RS = 0.155
.055
.035
.055
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

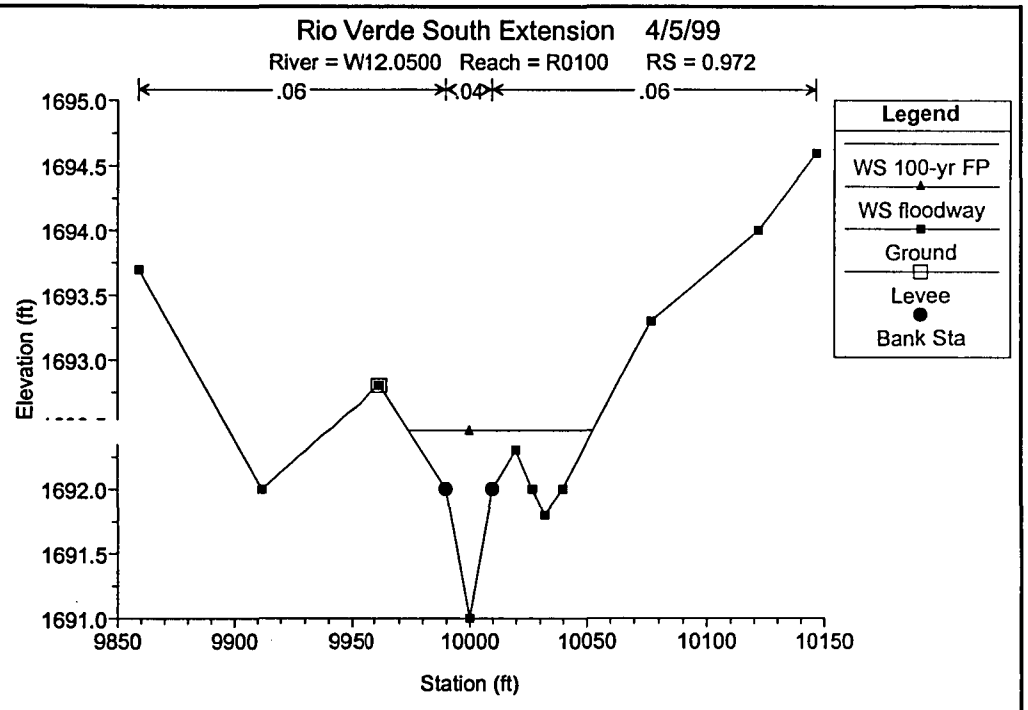

Rio Verde South Extension 4/5/99
River = W12.0400 Reach = R0100 RS = 0.103
.055
.035
.055
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

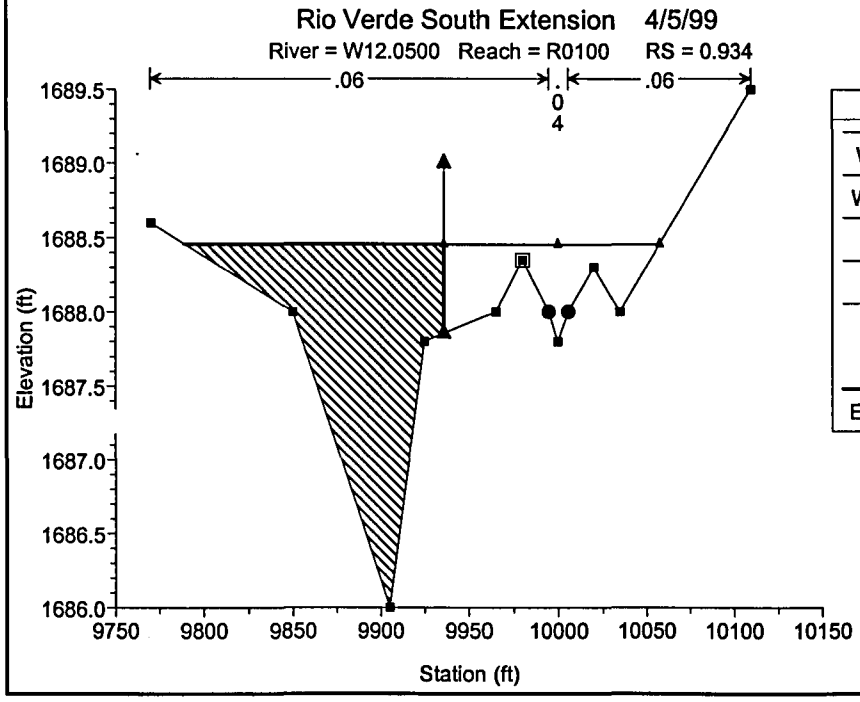

Rio Verde South Extension 4/5/99
River = W12.0400 Reach = R0100 Q = 290 cfs decrease due to overflow at RS = 0.061
.053
.035
.053
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

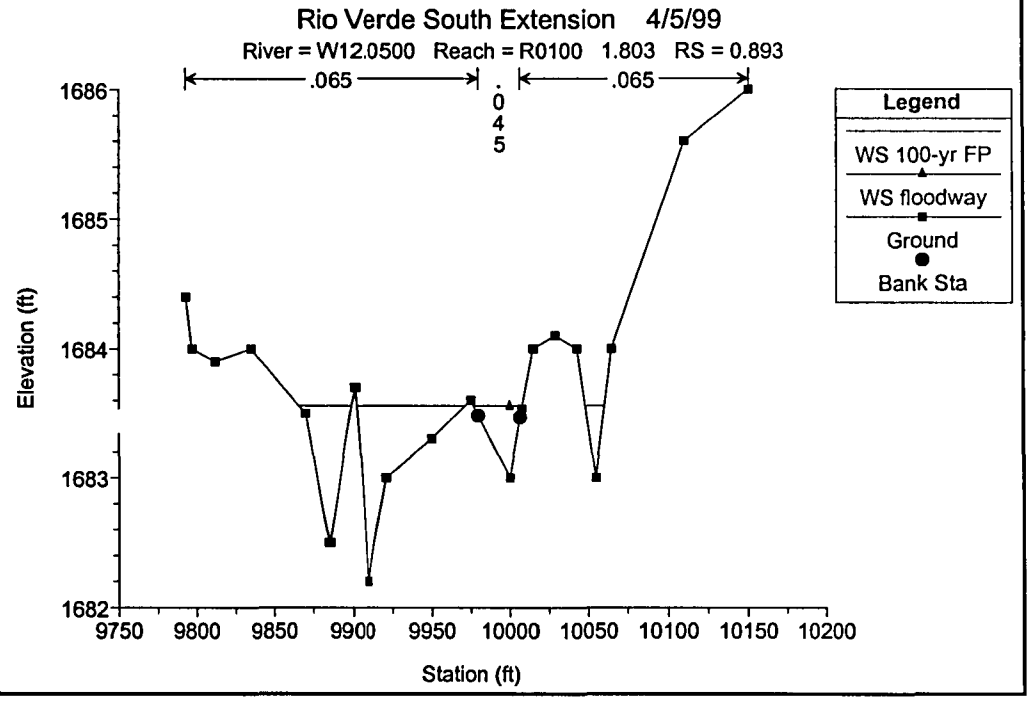

Rio Verde South Extension 4/5/99
River = W12.0500 Reach = R0100 Q = 107 cfs right split at S12.0500 RS = 1.098
.055
.035
.055
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Elevation (ft)
Station (ft)

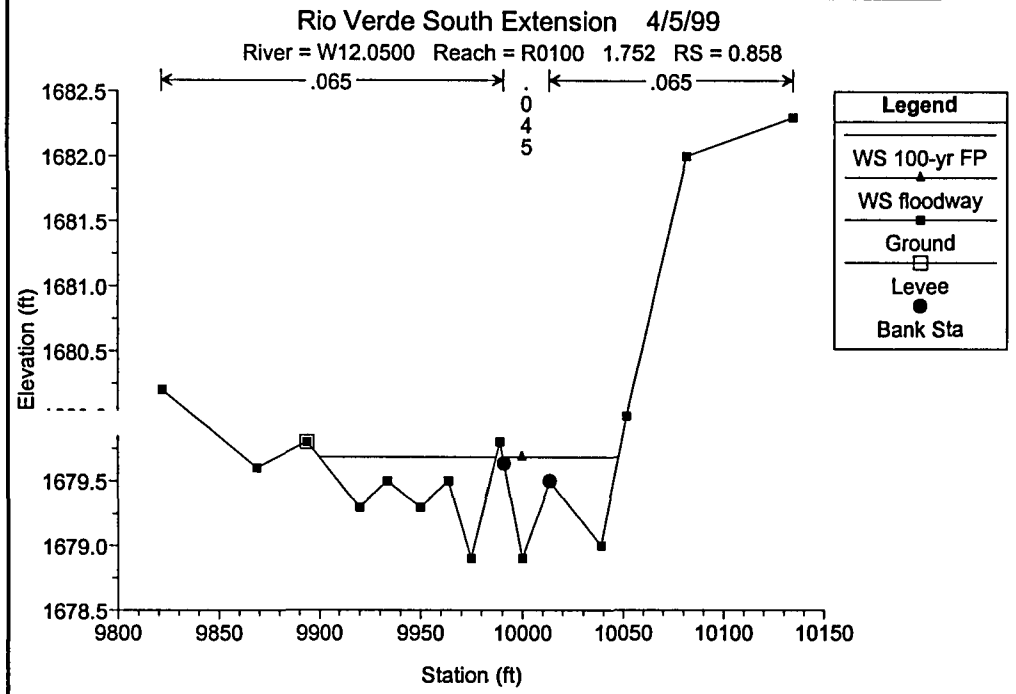

Rio Verde South Extension 4/5/99
River = W12.0500 Reach = R0100 1.999 RS = 1.063
.055
.035
.055
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

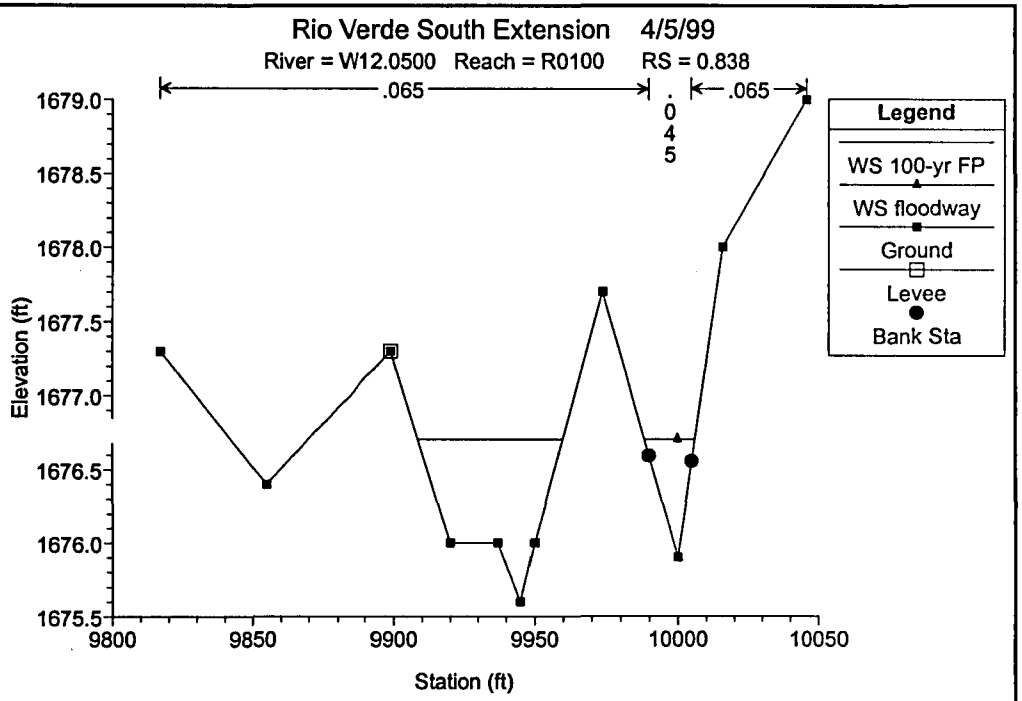

Rio Verde South Extension 4/5/99
River = W12.0500 Reach = R0100 1.924 RS = 0.997
.06
.04
.06
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

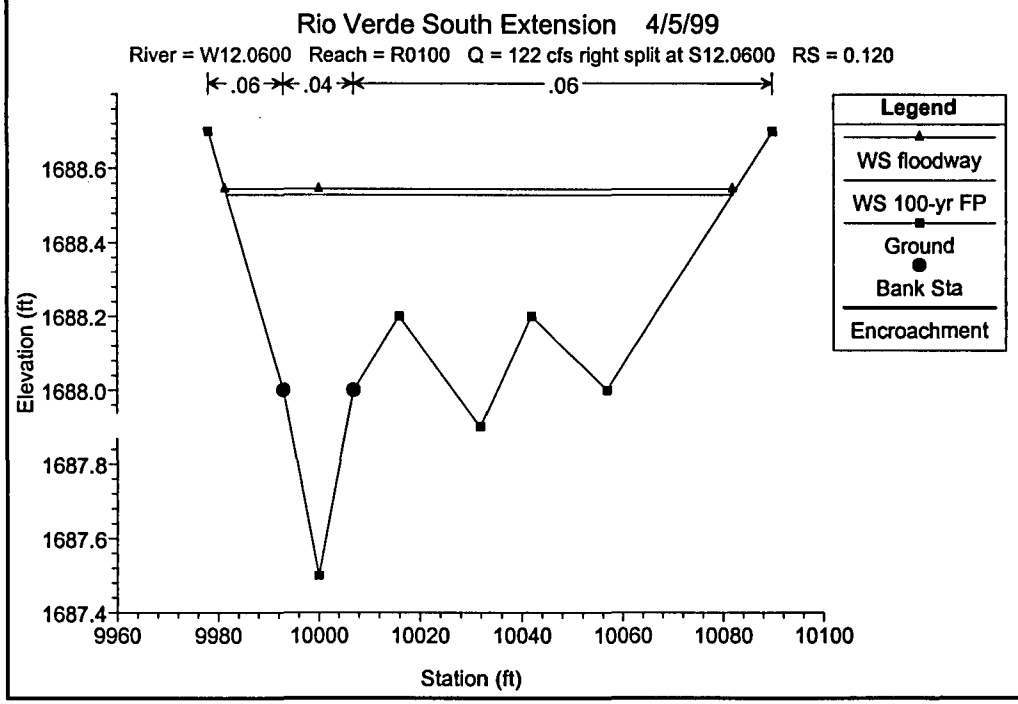

Rio Verde South Extension 4/5/99
River = W12.0500 Reach = R0100 RS = 0.972
.06
.04
.06
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

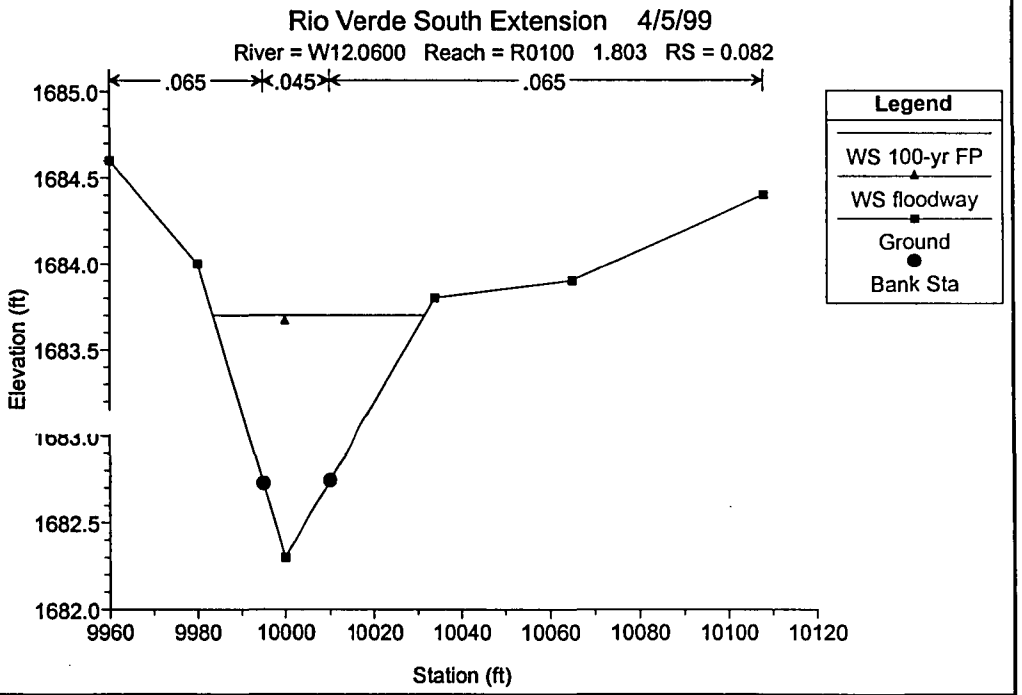

Rio Verde South Extension 4/5/99
River = W12.0500 Reach = R0100 RS = 0.934
.06
.04
.06
Legend
WS floodway
WS 100-yr FP
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

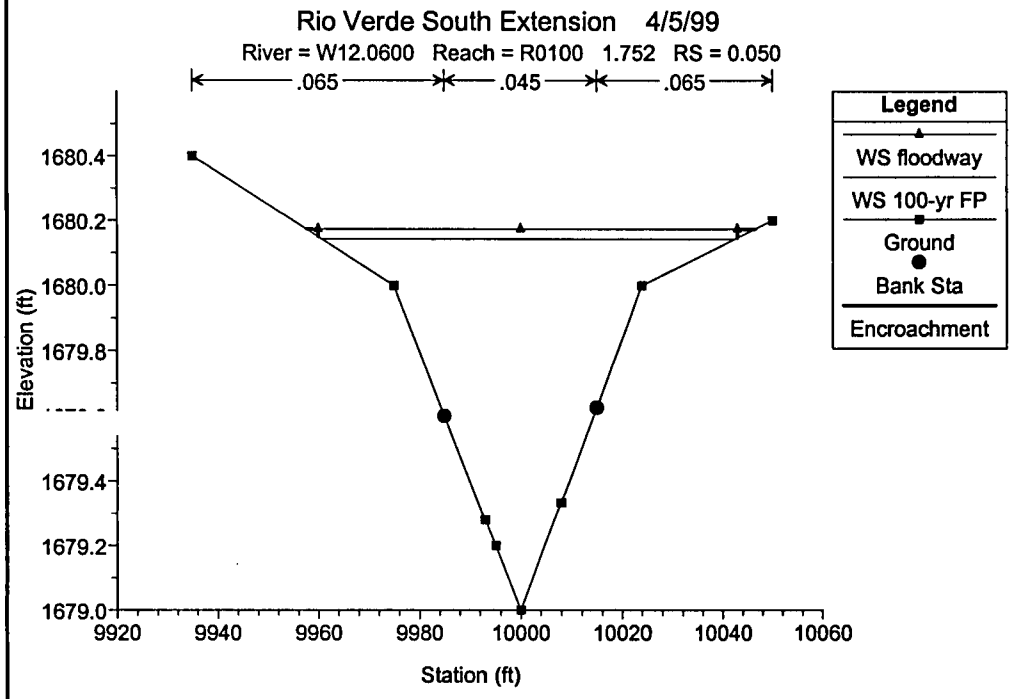

Rio Verde South Extension 4/5/99
River = W12.0500 Reach = R0100 1.803 RS = 0.893
.065
.045
.065
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Elevation (ft)
Station (ft)

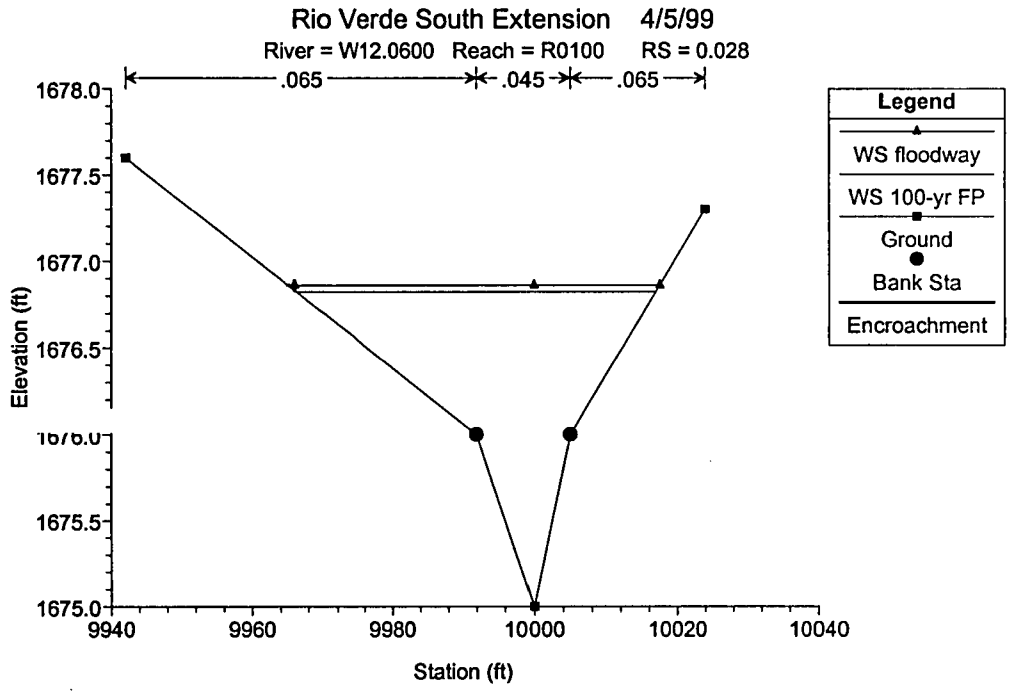

Rio Verde South Extension 4/5/99
River = W12.0500 Reach = R0100 1.752 RS = 0.858
.065
.045
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


Rio Verde South Extension 4/5/99
River = W12.0500 Reach = R0100 RS = 0.838
.065
.045
.065
Legend
WS 100-yr FP
WS floodway
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


Rio Verde South Extension 4/5/99
River = W12.0600 Reach = R0100 Q = 122 cfs right split at S12.0600 RS = 0.120
.06
.04
.06
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


Rio Verde South Extension 4/5/99
River = W12.0600 Reach = R0100 1.803 RS = 0.082
.065
.045
.065
Legend
WS 100-yr FP
WS floodway
Ground
Bank Sta
Elevation (ft)
Station (ft)


Rio Verde South Extension 4/5/99
River = W12.0600 Reach = R0100 1.752 RS = 0.050
.065
.045
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
1680.4
1680.2
1680.0
1679.8
1679.4
1679.2
1679.0
9920
9940
9960
9980
10000
10020
10040
10060
Station (ft)


Rio Verde South Extension 4/5/99
River = W12.0600 Reach = R0100 RS = 0.028
.065
.045
.065
Legend
WS floodway
WS 100-yr FP
Ground
Bank Sta
Encroachment
Elevation (ft)
1678.0
1677.5
1677.0
1676.5
1675.5
1675.0
9940
9960
9980
10000
10020
10040
Station (ft)

E.3 Expansion and Contraction Coefficients

No special data were gathered or calibration performed to estimate expansion and contraction coefficients.

E.4 Analysis of Structures

No separate hydraulic modeling was performed for structures

E.5 Hydraulic Calculations

E.5.1 Flow Distributions/HEC-2 Analysis/and Hydraulic Analyses to Characterize Splits/Overflows Which Were Not Mapped.

The following analyses are in support of the **"explanation of water surface higher than the endpoints of cross sections"** notes accompanying Section 4 of the FEMA Riverine Hydraulic Analysis forms for Washes 10, 11 and 12.

HEC2 S/N: 1363001324 HMVersion: 6.52 Data File: split8.hc2

```
*******************************************
*  HEC-2 WATER SURFACE PROFILES           *
*                                         *
*  Version   4.6.2;  May 1991             *
*                                         *
*  RUN DATE     7APR99    TIME   17:36:15 *
*******************************************
```

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

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

```
:::::::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::::::
:::                                       :::
:::   FULL MICRO-COMPUTER IMPLEMENTATION   :::
:::                                       :::
:::::::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::::::
```

```
============================
H A E S T A D   M E T H O D S
============================
```

37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

THIS RUN EXECUTED 7APR99 17:36:15

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

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


SPLIT FLOW BEING PERFORMED


SF


TW  WEIR BETWEEN 4.113 & 4.080
WS     4   4.080   4.113      -1       3
WC     0  1925.9      66    1928     150    1930     167  1930.7

TW  WEIR BETWEEN 4.080 & 4.053
WS     4   4.053   4.080      -1       3
WC     0  1921.7      13    1922     104    1924     171  1925.9

TW  WEIR BETWEEN 4.053 & 4.010
WS     4   4.010   4.053      -1       3
WC     0  1917.2      44    1918     193    1920     244  1921.7
```

```
T1Split flow on W11.0000, R0500 from xsecs 4.010 to 4.113
T2Rio Verde South FDS Extension, JEF, Inc., 4/7/98, Split8.hc2
T3      Rio Verde Splits

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

                2                           .0267                                   1915

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

                                                                                                15


QT        1       586
NC    0.065     0.045     0.065       0.1       0.3
X1     4.01        47    9959.9   10011.9         0         0         0
GR   1917.1    9895.9    1916.8    9900.2    1915.7    9927.4    1915.6    9931.1    1915.4    9935.3
GR     1915      9940    1914.6    9947.8    1914.6    9949.2    1914.7    9954.2    1914.4    9958.3
GR   1914.3    9959.9    1914.1    9961.6    1913.4      9969    1913.6    9970.5    1914.7    9986.5
GR   1914.3    9991.4    1913.6    9995.7    1914.1    9999.3    1914.2     10000    1914.1   10000.6
GR   1914.2   10005.9    1914.3   10010.9    1914.3   10011.9    1915.1   10020.9    1914.8     10032
GR   1914.6   10045.8    1914.6   10051.9    1914.5   10053.5    1914.9   10059.4    1915.2   10063.4
GR     1915   10072.3      1915   10075.2    1914.9     10080    1914.7   10084.7    1914.5   10086.2
GR   1914.8   10090.3    1915.2   10105.1    1915.3   10115.6    1915.1   10118.8    1914.3   10132.6
GR   1914.3   10133.8    1914.5   10136.8    1914.9   10142.9    1914.4   10153.6    1913.9   10170.7
GR     1916   10197.5    1917.2   10213.1

X1    4.053        13   9989.16   10011.3       226       226       226
GR   1922.4      9888      1921      9945    1921.1      9980   1920.63   9989.16   1920.35      9995
GR   1920.1     10000  1920.236     10005    1920.4   10011.3      1921     10033    1920.8     10044
GR   1921.5     10055    1920.7     10089    1921.7     10126

X1    4.080         7      9995     10029       144       144       144
GR   1926.8      9924    1925.7      9946    1926.5      9973  1924.752      9995    1924.4     10000
GR   1924.7     10029    1925.9     10079

X1    4.113         9      9982     10014       173       173       173
GR   1931.8      9923      1930      9943    1929.4      9982    1928.1     10000  1928.991     10014
GR   1929.5     10022    1929.5     10033      1930     10038    1930.7     10052
```

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

*PROF 1

CCHV= 0.100 CEHV= 0.300
*SECNO 4.010

3265 DIVIDED FLOW

4.010	1.74	1915.14	0.00	1915.00	1915.36	0.22	0.00	0.00	1914.30
508.0	23.2	213.7	271.2	9.8	55.1	72.4	0.0	0.0	1914.30
0.00	2.38	3.87	3.75	0.065	0.065	0.045	0.000	1913.40	9938.30
0.026718	0.	0.	0.	0	0	6	0.00	230.04	10186.58

FLOW DISTRIBUTION FOR SECNO= 4.01 CWSEL= 1915.14

STA=	9938.	9958.	9960.	10012.	10032.	10046.	10054.	10085.	10133.	10143.	10154.	10171.	10187.
PER Q=	3.8	0.8	42.1	3.2	3.8	3.1	3.1	6.4	4.6	3.5	18.0	7.6	
AREA=	8.5	1.3	55.1	6.2	6.1	4.3	6.5	11.2	6.0	5.3	17.0	9.9	
VEL=	2.3	3.2	3.9	2.7	3.1	3.6	2.4	2.9	3.9	3.4	5.4	3.9	
DEPTH=	0.4	0.8	1.1	0.3	0.4	0.6	0.2	0.2	0.6	0.5	1.0	0.6	

*SECNO 4.053

4.053	1.52	1921.62	0.00	0.00	1921.89	0.28	6.51	0.02	1920.63
517.8	92.5	140.0	285.3	34.6	29.0	66.2	0.7	1.1	1920.40
0.02	2.67	4.83	4.31	0.065	0.065	0.045	0.000	1920.10	9919.81
0.031137	226.	226.	226.	6	0	0	0.00	203.18	10122.99

FLOW DISTRIBUTION FOR SECNO= 4.05 CWSEL= 1921.62

STA=	9920.	9945.	9980.	9989.	10011.	10033.	10044.	10055.	10089.	10123.
PER Q=	2.8	10.6	4.5	27.0	21.2	7.1	3.5	12.8	10.5	
AREA=	7.8	19.9	6.9	29.0	19.9	7.9	5.2	17.6	15.6	
VEL=	1.8	2.8	3.3	4.8	5.5	4.7	3.5	3.8	3.5	
DEPTH=	0.3	0.6	0.8	1.3	0.9	0.7	0.5	0.5	0.5	

*SECNO 4.080

3265 DIVIDED FLOW

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

3280 CROSS SECTION 4.08 EXTENDED 0.24 FEET

4.080	1.74	1926.14	1926.10	0.00	1926.58	0.44	4.64	0.05	1924.75
573.3	46.9	304.1	222.3	17.2	53.8	41.8	1.1	1.7	1924.70
0.02	2.73	5.65	5.32	0.065	0.065	0.045	0.000	1924.40	9937.29
0.033199	144.	144.	144.	8	8	0	0.00	124.84	10079.00

FLOW DISTRIBUTION FOR SECNO= 4.08 CWSEL= 1926.14

STA=	9937.	9946.	9961.	9995.	10029.	10079.
PER Q=	0.5	0.8	6.8	53.0	38.8	
AREA=	1.9	3.2	12.1	53.8	41.8	
VEL=	1.5	1.5	3.3	5.7	5.3	
DEPTH=	0.2	0.2	0.4	1.6	0.8	

*SECNO 4.113

4.113	2.53	1930.63	0.00	0.00	1930.97	0.34	4.38	0.01	1929.40
586.0	114.0	318.6	153.4	38.2	62.9	31.7	1.6	2.1	1928.99
0.03	2.98	5.07	4.84	0.065	0.065	0.045	0.000	1928.10	9936.06
0.020042	173.	173.	173.	3	0	0	0.00	114.44	10050.50

FLOW DISTRIBUTION FOR SECNO= 4.11 CWSEL= 1930.63

STA=	9936.	9943.	9982.	10014.	10022.	10033.	10038.	10050.
PER Q=	0.5	18.9	54.4	10.9	10.7	3.2	1.4	
AREA=	2.2	36.1	62.9	11.0	12.4	4.4	3.9	
VEL=	1.5	3.1	5.1	5.8	5.1	4.3	2.2	
DEPTH=	0.3	0.9	2.0	1.4	1.1	0.9	0.3	

TW WEIR BETWEEN 4.113 & 4.080

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
12.68	12.69	0.12	12.68	12.69	0.12	7	1926.137	1930.632	4.080	4.113

TW WEIR BETWEEN 4.080 & 4.053

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
55.49	55.44	0.10	68.17	68.13	0.06	7	1921.618	1926.137	4.053	4.080

TW WEIR BETWEEN 4.053 & 4.010

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
9.78	9.67	1.19	77.95	77.80	0.20	7	1915.145	1921.618	4.010	4.053

THIS RUN EXECUTED 7APR99 17:36:15

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

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

Rio Verde Splits

SUMMARY PRINTOUT TABLE 150

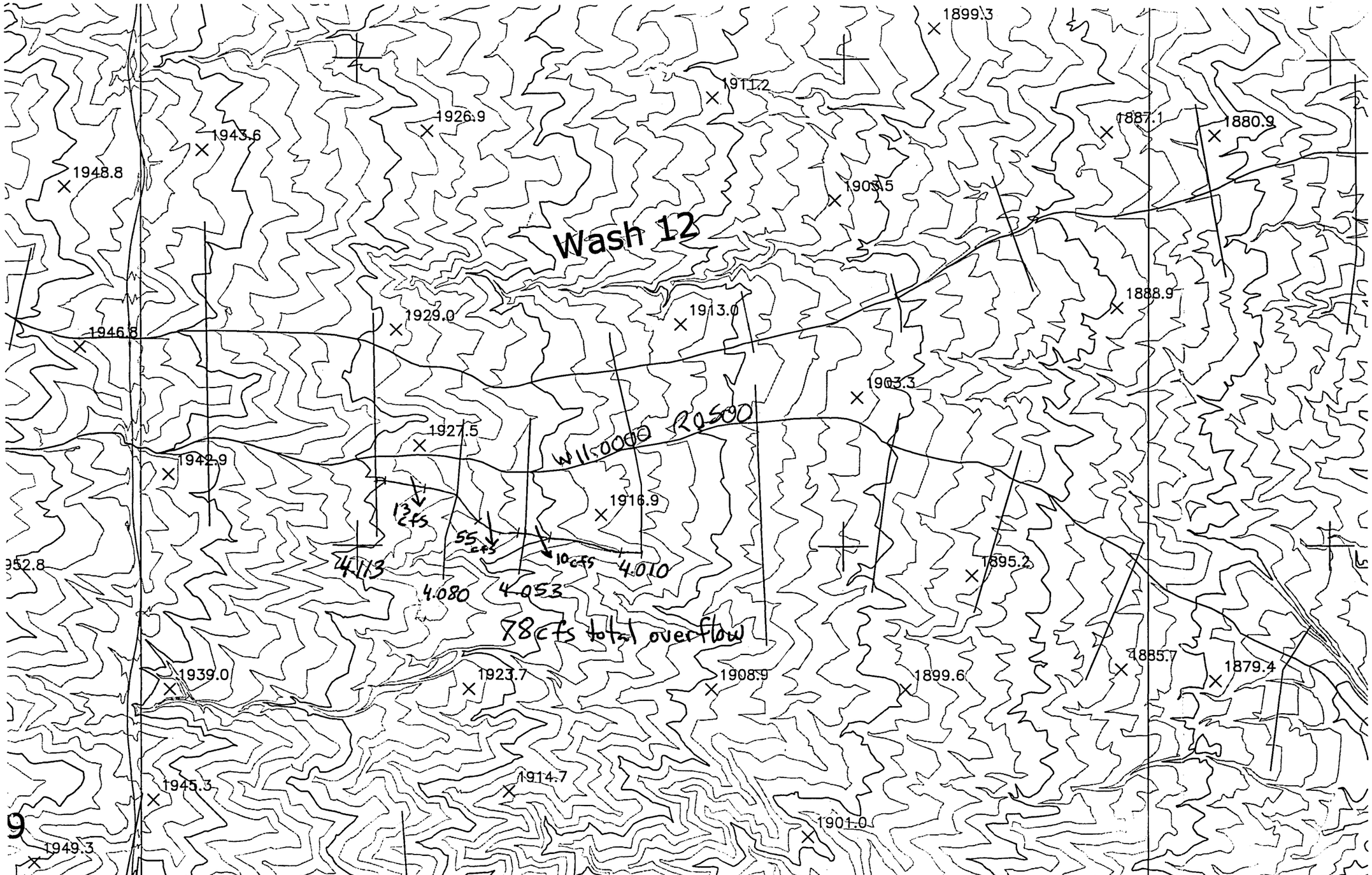
SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
4.010	0.00	0.00	0.00	1913.40	508.05	1915.14	0.00	1915.36	267.18	3.87	137.25	31.08
4.053	226.00	0.00	0.00	1920.10	517.83	1921.62	0.00	1921.89	311.37	4.83	129.85	29.35
4.080	144.00	0.00	0.00	1924.40	573.32	1926.14	1926.10	1926.58	331.99	5.65	112.73	31.47
4.113	173.00	0.00	0.00	1928.10	586.00	1930.63	0.00	1930.97	200.42	5.07	132.77	41.39

Rio Verde Splits

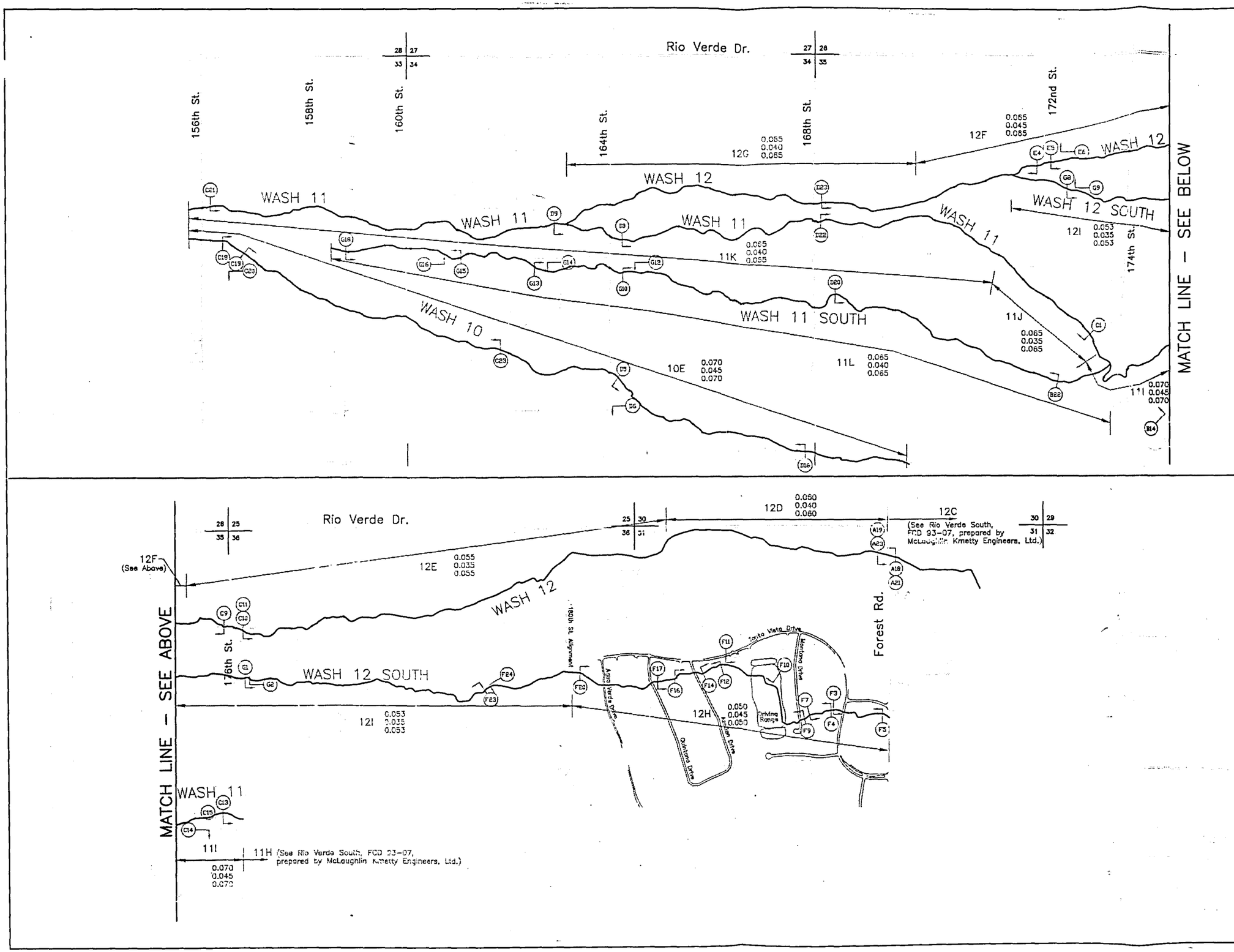
SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
4.010	508.05	1915.14	0.00	0.00	0.14	230.04	0.00
4.053	517.83	1921.62	0.00	6.47	0.00	203.18	226.00
4.080	573.32	1926.14	0.00	4.52	0.00	124.84	144.00
4.113	586.00	1930.63	0.00	4.49	0.00	114.44	173.00

SUMMARY OF ERRORS AND SPECIAL NOTES



Overflow on Wash 11, Reach 0500.



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FLOOD DELINEATION STUDY OF RIO VERDE SOUTH Extension

F.C.D. CONTRACT NO. FCD 97-13

December 1998

LEGEND

REACH LABEL	12D
PHOTO LOCATION AND DIRECTION	(2)
HYDRAULIC BASE LINE	
LEFT OVERBANK n VALUE	.065
MAIN CHANNEL n VALUE	.040
RIGHT OVERBANK n VALUE	.055

NOTES

1. This map prepared from sheets 7 and 8 (FCD 93-07) and sheets 9 through 12 (FCD 97-13) 1"=200', 2' C.I. maps.

INDEX MAP

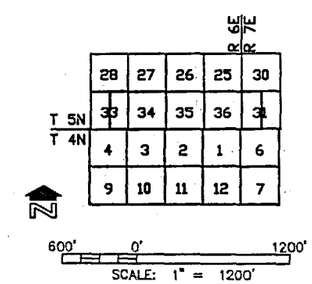


FIGURE 6.7.1
MANNING'S n VALUE MAP

JE Fuller
Hydrology & Geomorphology, Inc.
in association with
DIBBLE & ASSOCIATES

	BY	DATE
DESIGN		
DESIGN CHK.		
PLANS		
PLANS CHK.		
SUBMITTED BY:		DATE

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
RECOMMENDED BY: DATE
APPROVED BY: DATE
CHIEF ENGINEER AND GENERAL MANAGER
SHEET OF

Plan: FCD 97-13 River: W10.0000 Reach:R0200 Riv Sta: 4.266 Profile: 100-yr FP

Left Sta	Right Sta	Flow	Area	W.P.	% Conv.	Hydr D.	Velocity
(ft)	(ft)	(cfs)	(sq ft)	(ft)		(ft)	(ft/s)
9701.46	9774.22	46.00	16.64	23.89	5.00	0.70	2.76
9774.22	9846.98	28.37	16.48	48.18	3.08	0.34	1.72
9846.98	9919.74	312.14	82.05	73.00	33.89	1.13	3.80
9919.74	9992.50	66.80	32.50	72.83	7.25	0.45	2.06
LB 9992.50	9998.92	26.37	5.15	6.44	2.86	0.80	5.12
9998.92	10005.34	42.42	6.84	6.43	4.61	1.07	6.20
10005.34	10011.76	30.09	5.57	6.42	3.27	0.87	5.41
10011.76	10018.18	19.02	4.23	6.42	2.06	0.66	4.50
10018.18	RB 10024.60	10.07	2.89	6.42	1.09	0.45	3.49
10024.60	10051.74	9.43	6.14	23.20	1.02	0.26	1.54
10051.74	10078.88	28.90	12.79	27.15	3.14	0.47	2.26
10078.88	10106.02	122.41	30.41	27.15	13.29	1.12	4.03
10106.02	10133.16	77.32	23.09	27.16	8.39	0.85	3.35
10133.16	10160.30	52.12	18.22	27.15	5.66	0.67	2.86
10160.30	10187.44	49.41	17.65	27.16	5.37	0.65	2.80
10187.44	10214.58	0.13	0.22	3.63	0.01	0.06	0.58

46cfs

STAGE-DISCHARGE DATA FOR CROSS-SECTION FILE 4266.DAT
CROSS-SECTION NUMBER 1
D ? OF CROSS-SECTION MEASUREMENT: 990409

CHANNEL SLOPE RANGE: 0.0360 to 0.0360

VELOCITY FORMULA: User Supplied Mannings n
D84 = 1.000 (ft)

cross-section treated as one sectionWash 10.0000, R0200, River Station 4.266

STAGE ft	#SEC	AREA ft^2	PERIM ft	WIDTH ft	R ft	DAVG ft	SLOPE	n	VAVG ft/s	Q cfs
0.10	1	2.1	22.9	22.9	0.1	0.1	0.0360	0.059	1.0	2.11
0.20	1	4.6	25.7	25.7	0.2	0.2	0.0360	0.058	1.5	6.99
0.30	1	7.3	28.6	28.6	0.3	0.3	0.0360	0.058	2.0	14.36
0.40	1	10.3	31.4	31.4	0.3	0.3	0.0360	0.057	2.4	24.25
0.50	1	13.6	34.3	34.3	0.4	0.4	0.0360	0.056	2.7	36.80
0.60	1	17.2	37.2	37.1	0.5	0.5	0.0360	0.055	3.0	52.19
0.70	1	21.0	40.0	40.0	0.5	0.5	0.0360	0.055	3.4	70.61
.80	1	25.2	42.9	42.8	0.6	0.6	0.0360	0.054	3.7	92.29
0.90	1	29.6	45.7	45.7	0.6	0.6	0.0360	0.053	4.0	117.48
1.00	1	34.3	48.6	48.5	0.7	0.7	0.0360	0.052	4.3	146.42
1.10	1	39.3	51.5	51.4	0.8	0.8	0.0360	0.052	4.6	179.39
1.20	1	44.6	54.3	54.2	0.8	0.8	0.0360	0.051	4.9	216.69
1.30	1	50.2	57.2	57.1	0.9	0.9	0.0360	0.050	5.2	258.62
1.40	1	56.0	60.0	59.9	0.9	0.9	0.0360	0.049	5.5	305.50
1.50	1	62.2	62.9	62.8	1.0	1.0	0.0360	0.049	5.8	357.68
1.60	1	68.6	65.8	65.6	1.0	1.0	0.0360	0.048	6.1	415.52
1.70	1	75.3	68.6	68.5	1.1	1.1	0.0360	0.047	6.4	479.42
1.80	1	82.3	71.5	71.4	1.2	1.2	0.0360	0.046	6.7	549.78
1.90	1	89.6	74.3	74.2	1.2	1.2	0.0360	0.046	7.0	627.04
2.00	1	97.0	77.1	77.0	1.3	1.3	0.0360	0.045	7.3	709.94

DISCHARGE-TO-RADIUS RELATIONSHIP: Q = aR^b
a = 353.137, b = 2.294
r^2 = 0.9941, n = 20

Plan: FCD 97-13 River: W10.0555 Reach:R0200 Riv Sta: 0.670 Profile: 100-yr FP

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9980.00	9984.00	0.03	0.07	1.51	0.02	0.05	0.41
9984.00	9988.00	0.98	0.85	4.01	0.54	0.21	1.15
9988.00	9992.00	3.49	1.82	4.01	1.91	0.46	1.91
LB 9992.00	9995.00	8.85	2.01	3.01	4.84	0.67	4.42
9995.00	9998.00	13.23	2.55	3.01	7.23	0.85	5.18
9998.00	10001.00	17.77	3.05	3.00	9.71	1.02	5.84
10001.00	10004.00	15.98	2.86	3.00	8.73	0.95	5.59
10004.00	RB 10007.00	12.43	2.46	3.00	6.79	0.82	5.06
10007.00	10021.90	11.74	6.47	14.91	6.42	0.43	1.81
10021.90	10036.80	2.17	2.35	14.90	1.19	0.16	0.92
10036.80	10051.70	13.27	6.97	14.91	7.25	0.47	1.90
10051.70	10066.60	17.53	8.24	14.94	9.58	0.55	2.13
10066.60	10081.50	1.81	2.11	14.94	0.99	0.14	0.86
10081.50	10096.40	1.64	1.99	14.90	0.90	0.13	0.83
10096.40	10111.30	28.48	11.03	14.95	15.56	0.74	2.58
10111.30	10126.20	29.82	11.33	14.91	16.30	0.76	2.63
10126.20	10141.10	3.77	3.08	12.83	2.06	0.24	1.22

64 cfs

STAGE-DISCHARGE DATA FOR CROSS-SECTION FILE 0670.DAT
CROSS-SECTION NUMBER 1
DATE OF CROSS-SECTION MEASUREMENT: 990409

CHANNEL SLOPE RANGE: 0.0260 to 0.0260

VELOCITY FORMULA: User Supplied Mannings n
D84 = 1.000 (ft)

cross-section treated as one sectionWash 10.0555, R0200, River Station 0.670

STAGE ft	#SEC	AREA ft^2	PERIM ft	WIDTH ft	R ft	DAVG ft	SLOPE	n	VAVG ft/s	Q cfs
0.10	1	0.3	7.0	7.0	0.0	0.0	0.0260	0.064	0.5	0.18
0.20	1	1.4	13.9	13.9	0.1	0.1	0.0260	0.063	0.8	1.14
0.30	1	3.1	20.9	20.9	0.1	0.1	0.0260	0.062	1.1	3.43
0.40	1	5.6	27.9	27.9	0.2	0.2	0.0260	0.061	1.3	7.51
0.50	1	8.7	34.9	34.9	0.2	0.2	0.0260	0.060	1.6	13.84
0.60	1	12.5	41.8	41.8	0.3	0.3	0.0260	0.059	1.8	22.88
0.70	1	17.1	48.8	48.8	0.3	0.3	0.0260	0.058	2.1	35.11
.80	1	22.3	55.8	55.8	0.4	0.4	0.0260	0.057	2.3	51.00
0.90	1	28.2	62.8	62.7	0.4	0.4	0.0260	0.056	2.5	71.07
1.00	1	34.8	69.7	69.7	0.5	0.5	0.0260	0.055	2.8	95.83
1.10	1	42.2	76.7	76.7	0.5	0.5	0.0260	0.054	3.0	125.85
1.20	1	50.2	83.7	83.6	0.6	0.6	0.0260	0.053	3.2	161.72
1.30	1	58.9	90.7	90.6	0.6	0.6	0.0260	0.052	3.5	204.04
1.40	1	68.3	97.6	97.6	0.7	0.7	0.0260	0.051	3.7	253.50
1.50	1	78.4	104.6	104.6	0.7	0.7	0.0260	0.050	4.0	310.80
1.60	1	89.2	111.6	111.5	0.8	0.8	0.0260	0.049	4.2	376.69
1.70	1	100.7	118.6	118.5	0.8	0.8	0.0260	0.048	4.5	452.01
1.80	1	112.9	125.5	125.5	0.9	0.9	0.0260	0.047	4.8	537.64
1.90	1	125.6	127.9	127.7	1.0	1.0	0.0260	0.046	5.2	647.63*
2.00	1	138.4	130.3	130.0	1.1	1.1	0.0260	0.045	5.6	769.66*

DISCHARGE-TO-RADIUS RELATIONSHIP: Q = aR^b
a = 673.746, b = 2.775
r^2 = 0.9997, n = 20

Plan: FCD 97-13 River: W11.0000 Reach:R0200 Riv Sta: 4.933 Profile: 100-yr FP

Left Sta	Right Sta	Flow	Area	W.P.	% Conv.	Hydr D.	Velocity
(ft)	(ft)	(cfs)	(sq ft)	(ft)		(ft)	(ft/s)
9813.31	9869.67	0.02	0.05	2.42	0.00	0.02	0.31
9869.67	9926.02	143.04	43.70	56.44	18.08	0.78	3.27
9926.02	9982.38	202.53	53.81	56.37	25.60	0.95	3.76
LB 9982.38	9987.48	35.73	5.41	5.11	4.52	1.06	6.60
9987.48	9992.59	47.14	6.39	5.11	5.96	1.25	7.38
9992.59	9997.69	55.74	7.07	5.11	7.05	1.38	7.89
9997.69	10002.80	50.68	6.68	5.12	6.41	1.31	7.59
10002.80	RB 10007.90	27.61	4.65	5.14	3.49	0.91	5.94
10007.90	10022.35	25.86	9.65	14.45	3.27	0.67	2.68
10022.35	10036.80	19.29	8.09	14.45	2.44	0.56	2.38
10036.80	10051.25	12.90	6.36	14.45	1.63	0.44	2.03
10051.25	10065.70	7.69	4.66	14.45	0.97	0.32	1.65
10065.70	10080.15	6.27	4.12	14.45	0.79	0.29	1.52
10080.15	10094.60	6.74	4.30	14.45	0.85	0.30	1.56
10094.60	10109.05	55.59	15.30	14.51	7.03	1.06	3.63
10109.05	10123.50	61.48	16.24	14.49	7.77	1.12	3.79
10123.50	10137.95	14.92	6.95	14.52	1.89	0.48	2.15
10137.95	10152.40	17.78	7.67	14.30	2.25	0.54	2.32

33cfs

STAGE-DISCHARGE DATA FOR CROSS-SECTION FILE 4933.DAT
CROSS-SECTION NUMBER 1
D[illegible] OF CROSS-SECTION MEASUREMENT: 990409

CHANNEL SLOPE RANGE: 0.0330 to 0.0330

VELOCITY FORMULA: User Supplied Mannings n
D84 = 1.000 (ft)

cross-section treated as one sectionWash 11.0000, R0200, River Station 4.933

STAGE ft	#SEC	AREA ft^2	PERIM ft	WIDTH ft	R ft	DAVG ft	SLOPE	n	VAVG ft/s	Q cfs
0.10	1	0.3	5.2	5.2	0.0	0.0	0.0330	0.063	0.6	0.15
0.20	1	1.0	10.4	10.4	0.1	0.1	0.0330	0.061	1.0	0.99
0.30	1	2.3	15.6	15.6	0.1	0.1	0.0330	0.059	1.3	3.03
0.40	1	4.2	20.8	20.8	0.2	0.2	0.0330	0.057	1.6	6.75
0.50	1	6.5	26.0	26.0	0.2	0.2	0.0330	0.055	2.0	12.68
0.60	1	9.4	31.2	31.2	0.3	0.3	0.0330	0.053	2.3	21.40
0.70	1	12.7	36.4	36.4	0.3	0.3	0.0330	0.051	2.6	33.54
.80	1	16.6	41.6	41.6	0.4	0.4	0.0330	0.049	3.0	49.84
0.90	1	21.0	46.8	46.8	0.4	0.4	0.0330	0.047	3.4	71.13
1.00	1	26.0	52.0	52.0	0.5	0.5	0.0330	0.045	3.8	98.39

DISCHARGE-TO-RADIUS RELATIONSHIP: Q = aR^b
a = 650.845, b = 2.811
r^2 = 0.9996, n = 10

Plan: FCD 97-13 River: W11.0000 Reach:R0700 Riv Sta: 3.057 Profile: 100-yr FP

Left Sta	Right Sta	Flow	Area	W.P.	% Conv.	Hydr D.	Velocity
(ft)	(ft)	(cfs)	(sq ft)	(ft)		(ft)	(ft/s)
9923.26	9945.84	5.80	3.51	5.84	0.52	0.60	1.65
9945.84	9968.42	85.93	30.42	22.69	7.76	1.35	2.82
9968.42	9991.00	85.75	30.42	22.75	7.75	1.35	2.82
LB 9991.00	9997.20	139.14	18.48	6.26	12.57	2.98	7.53
9997.20	10003.40	183.25	21.84	6.29	16.55	3.52	8.39
10003.40	10009.60	115.29	16.50	6.26	10.41	2.66	6.99
10009.60	10015.80	113.32	16.28	6.20	10.24	2.63	6.96
10015.80	RB 10022.00	110.75	16.06	6.21	10.00	2.59	6.90
10022.00	10037.29	72.43	26.68	15.36	6.54	1.74	2.71
10037.29	10052.58	6.34	6.18	15.34	0.57	0.40	1.03
10052.58	10067.87	3.14	4.05	15.29	0.28	0.26	0.77
10067.87	10083.16	7.84	7.02	15.29	0.71	0.46	1.12
10083.16	10098.45	13.75	9.83	15.29	1.24	0.64	1.40
10098.45	10113.74	13.80	9.85	15.29	1.25	0.64	1.40
10113.74	10129.03	19.84	12.29	15.43	1.79	0.80	1.61
10129.03	10144.32	112.77	34.93	15.51	10.19	2.28	3.23
10144.32	10159.61	17.87	9.46	9.39	1.61	1.03	1.89

195 cfs

Plan: FCD 97-13 River: W12.0300 Reach:R0100 Riv Sta: 2.577 Profile: 100-yr FP

Left Sta	Right Sta	Flow	Area	W.P.	% Conv.	Hydr D.	Velocity
(ft)	(ft)	(cfs)	(sq ft)	(ft)		(ft)	(ft/s)
9766.20	9841.80	0.02	0.05	1.71	0.01	0.03	0.43
9841.80	9917.40	222.07	55.76	65.54	73.29	0.85	3.98
9917.40	9993.00	8.72	4.53	15.85	2.88	0.29	1.92
LB 9993.00	9996.20	10.05	2.02	3.20	3.32	0.63	4.98
9996.20	9999.40	13.30	2.39	3.20	4.39	0.75	5.58
9999.40	10002.60	14.78	2.54	3.20	4.88	0.79	5.82
10002.60	10005.80	12.26	2.27	3.20	4.05	0.71	5.40
10005.80	RB 10009.00	9.84	1.99	3.20	3.25	0.62	4.94
10009.00	10024.60	11.66	5.67	15.61	3.85	0.36	2.06
10024.60	10040.20	0.29	0.40	5.41	0.09	0.07	0.71
10040.20	10118.20						
10118.20	10133.80	0.01	0.03	2.50	0.00	0.01	0.22
10133.80	10149.40						
10149.40	10165.00	0.00	0.01	0.98	0.00	0.01	0.22

<1

Plan: FCD 97-13 River: W12.0300 Reach:R0200 Riv Sta: 2.362 Profile: 100-yr FP

Left Sta	Right Sta	Flow	Area	W.P.	% Conv.	Hydr D.	Velocity
(ft)	(ft)	(cfs)	(sq ft)	(ft)		(ft)	(ft/s)
9939.34	9958.44	0.02	0.08	2.00	0.00	0.04	0.30
9958.44	9977.55	9.21	7.12	19.12	1.72	0.37	1.29
9977.55	9996.66	48.11	19.21	19.15	8.98	1.01	2.50
LB 9996.66	9998.91	31.51	4.64	2.35	5.88	2.06	6.79
9998.91	10001.17	47.21	5.87	2.31	8.81	2.60	8.04
10001.17	10003.42	42.58	5.48	2.27	7.94	2.43	7.77
10003.42	10005.68	34.61	4.84	2.27	6.46	2.15	7.15
10005.68	RB 10007.93	27.32	4.20	2.27	5.10	1.86	6.51
10007.93	10042.72	184.65	52.94	34.80	34.45	1.52	3.49
10042.72	10077.51	41.40	21.59	34.81	7.72	0.62	1.92
10077.51	10112.30	5.40	4.91	18.25	1.01	0.27	1.10
10112.30	10147.09	28.76	17.35	34.80	5.37	0.50	1.66
10147.09	10181.88	15.19	9.97	22.72	2.83	0.44	1.52
10181.88	10216.67	0.29	0.38	2.50	0.05	0.15	0.76
10216.67	10251.46	19.74	12.18	25.26	3.68	0.48	1.62

20cfs

STAGE-DISCHARGE DATA FOR CROSS-SECTION FILE 2362.DAT
CROSS-SECTION NUMBER 1
D[illegible] OF CROSS-SECTION MEASUREMENT: 990409

[illegible]ANNEL SLOPE RANGE: 0.0290 to 0.0290

VELOCITY FORMULA: User Supplied Mannings n
D84 = 1.000 (ft)

cross-section treated as one sectionWash 12.0300, R0200, River Station 2.362

STAGE ft	#SEC	AREA ft^2	PERIM ft	WIDTH ft	R ft	DAVG ft	SLOPE	n	VAVG ft/s	Q cfs
0.10	1	8.1	86.4	86.4	0.1	0.1	0.0290	0.063	0.8	6.69
0.20	1	17.3	97.9	97.9	0.2	0.2	0.0290	0.061	1.3	22.63
0.30	1	27.6	109.3	109.3	0.3	0.3	0.0290	0.059	1.7	47.52
0.40	1	39.1	120.7	120.7	0.3	0.3	0.0290	0.057	2.1	82.20
0.50	1	51.8	132.1	132.1	0.4	0.4	0.0290	0.055	2.5	127.87
0.60	1	65.6	143.6	143.6	0.5	0.5	0.0290	0.053	2.8	186.07
0.70	1	80.5	155.0	155.0	0.5	0.5	0.0290	0.051	3.2	258.62
.80	1	96.0	155.2	155.0	0.6	0.6	0.0290	0.049	3.8	360.67*
0.90	1	111.5	155.4	155.0	0.7	0.7	0.0290	0.047	4.3	482.14*
1.00	1	127.0	155.6	155.0	0.8	0.8	0.0290	0.045	4.9	625.02*

DISCHARGE-TO-RADIUS RELATIONSHIP: Q = aR^b
a = 973.637, b = 2.138
r^2 = 0.9984, n = 10

Plan: FCD 97-13 River: W12.0300 Reach:R0200 Riv Sta: 2.494 Profile: 100-yr FP

Left Sta	Right Sta	Flow	Area	W.P.	% Conv.	Hydr D.	Velocity
(ft)	(ft)	(cfs)	(sq ft)	(ft)		(ft)	(ft/s)
9612.00	9652.56	2.95	2.85	20.68	0.55	0.14	1.04
9652.56	9693.11	46.02	19.39	40.60	8.58	0.48	2.37
9693.11	9733.67	11.45	8.42	40.58	2.14	0.21	1.36
9733.67	9774.22	25.85	13.71	40.56	4.82	0.34	1.88
9774.22	9814.78	33.11	15.91	40.56	6.18	0.39	2.08
9814.78	9855.33	22.12	12.49	40.56	4.13	0.31	1.77
9855.33	9895.89	44.27	18.94	40.56	8.26	0.47	2.34
9895.89	9936.44	22.68	12.68	40.56	4.23	0.31	1.79
9936.44	9977.00	55.15	21.61	40.56	10.29	0.53	2.55
LB 9977.00	9982.20	19.64	3.87	5.20	3.66	0.74	5.08
9982.20	9987.40	21.80	4.12	5.20	4.07	0.79	5.30
9987.40	9992.60	24.03	4.36	5.20	4.48	0.84	5.51
9992.60	9997.80	26.37	4.61	5.20	4.92	0.89	5.72
9997.80	RB 10003.00	25.26	4.50	5.21	4.71	0.87	5.62
10003.00	10021.90	21.30	9.14	18.91	3.97	0.48	2.33
10021.90	10040.80	24.29	9.89	18.90	4.53	0.52	2.46
10040.80	10059.70	30.06	11.24	18.90	5.61	0.59	2.67
10059.70	10078.60	17.07	8.00	18.90	3.18	0.42	2.13
10078.60	10097.50	15.04	7.43	18.94	2.81	0.39	2.03
10097.50	10116.40	2.08	2.27	18.90	0.39	0.12	0.92
10116.40	10135.30	9.58	5.66	18.90	1.79	0.30	1.69
10135.30	10154.20	18.53	8.41	18.90	3.46	0.44	2.20
10154.20	10173.10	15.64	7.60	18.90	2.92	0.40	2.06
10173.10	10192.00	1.71	1.82	14.79	0.32	0.12	0.94

57 cfs

STAGE-DISCHARGE DATA FOR CROSS-SECTION FILE 2494.DAT
CROSS-SECTION NUMBER 1
DA OF CROSS-SECTION MEASUREMENT: 990409

CHANNEL SLOPE RANGE: 0.0360 to 0.0360

VELOCITY FORMULA: User Supplied Mannings n
D84 = 1.000 (ft)

cross-section treated as one sectionWash 12.0300, R0200, River Station 2.494

STAGE ft	#SEC	AREA ft^2	PERIM ft	WIDTH ft	R ft	DAVG ft	SLOPE	n	VAVG ft/s	Q cfs
0.10	1	0.3	7.0	7.0	0.0	0.0	0.0360	0.063	0.6	0.21
0.20	1	1.4	14.0	14.0	0.1	0.1	0.0360	0.061	1.0	1.40
0.30	1	3.1	21.0	21.0	0.1	0.1	0.0360	0.059	1.4	4.26
0.40	1	5.6	28.0	28.0	0.2	0.2	0.0360	0.057	1.7	9.49
0.50	1	8.7	35.0	35.0	0.2	0.2	0.0360	0.055	2.0	17.83
0.60	1	12.6	42.0	42.0	0.3	0.3	0.0360	0.053	2.4	30.09
0.70	1	17.1	49.0	49.0	0.3	0.3	0.0360	0.051	2.8	47.17
.80	1	22.4	56.0	56.0	0.4	0.4	0.0360	0.049	3.1	70.09
0.90	1	28.3	63.0	63.0	0.4	0.4	0.0360	0.047	3.5	100.04
1.00	1	35.0	70.0	70.0	0.5	0.5	0.0360	0.045	4.0	138.38

DISCHARGE-TO-RADIUS RELATIONSHIP: Q = aR^b
a = 914.414, b = 2.811
r^2 = 0.9996, n = 10

Plan: FCD 97-13 River: W12.0365 Reach:R0100 Riv Sta: 0.212 Profile: 100-yr FP

Left Sta	Right Sta	Flow	Area	W.P.	% Conv.	Hydr D.	Velocity
(ft)	(ft)	(cfs)	(sq ft)	(ft)		(ft)	(ft/s)
9905.00	9923.00	0.39	0.62	7.21	0.56	0.09	0.63
9923.00	9941.00	5.58	4.41	18.00	7.97	0.25	1.26
9941.00	9959.00	4.99	4.13	18.00	7.13	0.23	1.21
9959.00	9977.00	2.33	2.13	10.83	3.32	0.20	1.09
9977.00	9995.00	0.45	0.51	3.54	0.64	0.14	0.88
LB 9995.00	10000.20	7.95	2.59	5.22	11.35	0.50	3.07
10000.20	10005.40	13.82	3.60	5.20	19.74	0.69	3.83
10005.40	10010.60	13.81	3.60	5.20	19.73	0.69	3.83
10010.60	10015.80	13.61	3.57	5.20	19.44	0.69	3.81
10015.80	RB 10021.00	4.48	1.84	5.23	6.39	0.35	2.44
10021.00	10026.20	0.41	0.58	5.20	0.59	0.11	0.71
10026.20	10031.40	0.67	0.77	5.20	0.95	0.15	0.86
10031.40	10036.60	0.92	0.94	5.20	1.31	0.18	0.98
10036.60	10041.80	0.51	0.66	5.20	0.73	0.13	0.78
10041.80	10047.00	0.09	0.23	5.20	0.13	0.04	0.39

14 cfs

STAGE-DISCHARGE DATA FOR CROSS-SECTION FILE 0212.DAT
CROSS-SECTION NUMBER 1
D/ ` OF CROSS-SECTION MEASUREMENT: 990409

C..NNEL SLOPE RANGE: 0.0330 to 0.0330

VELOCITY FORMULA: User Supplied Mannings n
D84 = 1.000 (ft)

cross-section treated as one sectionWash 12.0365, R0100, River Station 0.212

STAGE ft	#SEC	AREA ft^2	PERIM ft	WIDTH ft	R ft	DAVG ft	SLOPE	n	VAVG ft/s	Q cfs
0.10	1	0.3	6.2	6.2	0.0	0.0	0.0330	0.064	0.6	0.18
0.20	1	1.2	12.4	12.4	0.1	0.1	0.0330	0.062	0.9	1.15
0.30	1	2.8	18.5	18.5	0.1	0.1	0.0330	0.061	1.2	3.47
0.40	1	4.9	24.7	24.7	0.2	0.2	0.0330	0.060	1.5	7.64
0.50	1	7.7	30.9	30.9	0.2	0.2	0.0330	0.059	1.8	14.15
0.60	1	11.1	37.1	37.1	0.3	0.3	0.0330	0.057	2.1	23.53
0.70	1	15.1	43.3	43.2	0.3	0.3	0.0330	0.056	2.4	36.31
.80	1	19.8	49.4	49.4	0.4	0.4	0.0330	0.055	2.7	53.06
0.90	1	25.0	55.6	55.6	0.4	0.4	0.0330	0.053	3.0	74.40
1.00	1	30.9	61.8	61.8	0.5	0.5	0.0330	0.052	3.3	100.97
1.10	1	37.4	68.0	67.9	0.5	0.5	0.0330	0.051	3.6	133.49
1.20	1	44.5	74.1	74.1	0.6	0.6	0.0330	0.050	3.9	172.74
1.30	1	52.2	80.3	80.3	0.6	0.6	0.0330	0.048	4.2	219.56
1.40	1	60.5	86.5	86.5	0.7	0.7	0.0330	0.047	4.5	274.89
1.50	1	69.5	92.7	92.6	0.7	0.7	0.0330	0.046	4.9	339.75
1.55	1	74.2	95.8	95.7	0.8	0.8	0.0330	0.045	5.1	376.44

DISCHARGE-TO-RADIUS RELATIONSHIP: Q = aR^b
a = 718.894, b = 2.799
r^2 = 0.9996, n = 16

E.5.2: Flow Data

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

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X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
XXXXXXX  XXXX     X       XXX XXXX     XXXXXX    XXXX
X     X  X        X           X  X     X    X        X
X     X  X        X    X      X   X    X    X        X
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PROJECT DATA
Project Title: Rio Verde South Extension
Project File : rioverde.prj
Run Date and Time: 5/25/99 11:45:26 AM
Project in English units

Project Description:
Rio Verde South Extension Floodplain Delineation Study
FCD Contract No.
93-17

W10.0000 = Wash 10
W11.0000 = Wash 11
W11.0100 = Wash 11
South
W12.0000 = Wash 12
W12.0300 = Wash 12 South

JEF / Hydrology &
Geomorphology, Inc.
May 1999

FLOW DATA

Flow Title: Rio Verde South Extension Flow Data
Flow File : g:\JEF\PROJECTS\FCDMC\RioVerde\RASfiles\rioverde.f01

Flow Data (cfs)

River	Reach	RS	100-yr FP	floodway
W10.0000	R0100	4.971	2337	2337
W10.0000	R0200	4.850	921	921
W10.0000	R0300	3.977	555	555
W10.0000	R0400	3.539	913	913
W10.0000	R0500	3.448	343	343
W11.0000	R0100	5.687	1398	1398
W11.0000	R0200	5.511	791	791
W11.0000	R0300	4.843	586	586
W11.0000	R0400	4.799	506	506
W11.0000	R0500	4.270	586	586
W11.0000	R0600	3.504	586	586
W11.0000	R0700	3.402	1107	1107
W11.0000	R0800	3.004	1107	1107
W11.0000	R0800	2.896	940	940
W11.0205	R0100	0.248	80	80
W12.0000	R0100	4.380	251	251
W12.0000	R0200	4.084	346	346
W12.0000	R0300	3.890	180	180
W12.0000	R0300	3.320	683	683
W12.0000	R0400	3.209	380	380
W12.0000	R0500	2.964	75	75
W12.0000	R0500	2.798	90	90
W12.0000	R0500	2.652	147	147
W12.0000	R0600	2.112	380	380
W12.0000	R0700	2.045	273	273
W12.0000	R0800	1.871	151	151
W12.0000	R0800	1.765	370	370
W12.0400	R0100	0.201	305	305
W12.0400	R0100	0.061	290	290
W12.0300	R0100	2.982	303	303
W12.0300	R0200	2.516	593	593
W12.0300	R0200	2.419	536	536
W12.0300	R0300	2.191	303	303
W12.0300	R0400	2.132	233	233
W12.0300	R0450	1.917	303	303
W12.0300	R0500	1.863	117	117
W12.0300	R0500	1.544	387	387
W12.0365	R0100	0.212	70	70
W12.0355	R0100	0.374	233	233
W10.0555	R0100	1.128	358	358
W10.0555	R0200	0.884	183	183
W10.0558	R0100	0.186	175	175
W12.0100	R0100	0.083	179	179
W11.0100	R0100	2.050	600	600
W11.0100	R0100	1.806	541	541
W11.0100	R0100	1.412	536	536
W11.0100	R0200	0.262	226	226
W11.0100	R0300	0.208	409	409
W11.0155	R0100	0.272	310	310

W11.0405	R0100	0.337	586	586
W10.0600	R0100	3.445	570	570
W12.0500	R0100	1.098	107	107
W12.0600	R0100	0.120	122	122
W12.0375	R0100	0.704	186	186
W12.0375	R0100	0.239	204	204

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
W10.0000	R0500	100-yr FP		Normal S = .0231
W10.0000	R0500	floodway		Normal S = .0231
W11.0000	R0800	100-yr FP		Known WS = 1789.31
W11.0000	R0800	floodway		Known WS = 1789.31
W12.0000	R0800	100-yr FP		Normal S = .025
W12.0000	R0800	floodway		Normal S = .025
W12.0300	R0500	100-yr FP		Normal S = .0267
W12.0300	R0500	floodway		Normal S = .0267
W10.0600	R0100	100-yr FP		Normal S = .0233
W10.0600	R0100	floodway		Normal S = .0233
W12.0500	R0100	100-yr FP		Normal S = .0267
W12.0500	R0100	floodway		Normal S = .0267
W12.0600	R0100	100-yr FP		Normal S = .033
W12.0600	R0100	floodway		Normal S = .033
W12.0375	R0100	100-yr FP		Normal S = .02
W12.0375	R0100	floodway		Normal S = .02

E.5.3: Summary of Manning's 'n' Values, Channel Reach Lengths, Coefficients of Contraction and Expansion

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

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X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X    X    X   X
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PROJECT DATA
Project Title: Rio Verde South Extension
Project File : rioverde.prj
Run Date and Time: 5/25/99 11:45:26 AM
Project in English units

Project Description:
Rio Verde South Extension Floodplain Delineation Study
FCD Contract No.
93-17

W10.0000 = Wash 10
W11.0000 = Wash 11
W11.0100 = Wash 11
South
W12.0000 = Wash 12
W12.0300 = Wash 12 South

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May 1999

SUMMARY OF MANNING'S N VALUES

River:W10.0000

Reach	River Sta.	n1	n2	n3
R0100	4.971	.07	.045	.07
R0100	4.916	.07	.045	.07
R0200	4.850	.07	.045	.07
R0200	4.790	.07	.045	.07
R0200	4.711	.07	.045	.07
R0200	4.640	.07	.045	.07
R0200	4.545	.07	.045	.07
R0200	4.459	.07	.045	.07
R0200	4.406	.07	.045	.07
R0200	4.344	.07	.045	.07
R0200	4.266	.07	.045	.07
R0200	4.197	.07	.045	.07
R0200	4.138	.07	.045	.07
R0200	4.062	.07	.045	.07
R0200	4.017	.07	.045	.07
R0300	3.977	.07	.045	.07
R0300	3.888	.07	.045	.07
R0300	3.842	.07	.045	.07
R0300	3.805	.07	.045	.07
R0300	3.717	.07	.045	.07
R0300	3.638	.07	.045	.07
R0300	3.580	.07	.045	.07
R0400	3.539	.07	.045	.07
R0400	3.491	.07	.045	.07
R0400	3.468	.07	.045	.07
R0500	3.448	.07	.045	.07
R0500	3.359	.07	.045	.07
R0500	3.264	.07	.045	.07
R0500	3.170	.07	.045	.07
R0500	3.074	.07	.045	.07

River:W11.0000

Reach	River Sta.	n1	n2	n3
R0100	5.687	.065	.04	.065
R0100	5.626	.065	.04	.065
R0100	5.551	.065	.04	.065
R0200	5.511	.065	.04	.065
R0200	5.437	.065	.04	.065
R0200	5.347	.065	.04	.065
R0200	5.257	.065	.04	.065
R0200	5.158	.065	.04	.065
R0200	5.122	.065	.04	.065
R0200	5.089	.065	.04	.065
R0200	5.029	.065	.04	.065
R0200	4.933	.065	.04	.065
R0200	4.877	.065	.04	.065
R0300	4.843	.065	.04	.065
R0300	4.821	.065	.04	.065

R0400	4.799	.065	.04	.065
R0400	4.755	.065	.04	.065
R0400	4.674	.065	.04	.065
R0400	4.584	.065	.04	.065
R0400	4.501	.065	.04	.065
R0400	4.427	.065	.04	.065
R0400	4.339	.065	.04	.065
R0400	4.315	.065	.04	.065
R0500	4.270	.065	.04	.065
R0500	4.180	.065	.04	.065
R0500	4.113	.065	.04	.065
R0500	4.080	.065	.04	.065
R0500	4.053	.065	.04	.065
R0500	4.010	.065	.04	.065
R0500	3.961	.065	.04	.065
R0500	3.905	.065	.04	.065
R0500	3.855	.065	.04	.065
R0500	3.797	.07	.045	.07
R0500	3.724	.065	.035	.065
R0500	3.638	.065	.035	.065
R0500	3.576	.065	.035	.065
R0500	3.555	.065	.035	.065
R0600	3.504	.065	.035	.065
R0600	3.451	.065	.035	.065
R0700	3.402	.065	.035	.065
R0700	3.356	.065	.035	.065
R0700	3.266	.065	.035	.065
R0700	3.177	.07	.045	.07
R0700	3.150	.07	.045	.07
R0700	3.057	.07	.045	.07
R0800	3.004	.07	.045	.07
R0800	2.960	.07	.045	.07
R0800	2.896	.07	.045	.07

River:W11.0205

Reach	River Sta.	n1	n2	n3
R0100	0.248	.065	.04	.065
R0100	0.207	.065	.04	.065
R0100	0.129	.065	.04	.065
R0100	0.031	.065	.04	.065

River:W12.0000

Reach	River Sta.	n1	n2	n3
R0100	4.380	.065	.04	.065
R0100	4.288	.065	.04	.065
R0100	4.218	.065	.04	.065
R0100	4.115	.065	.04	.065
R0200	4.084	.065	.04	.065
R0200	4.029	.065	.04	.065
R0200	3.963	.065	.04	.065
R0200	3.909	.065	.04	.065

R0300	3.890	.065	.04	.065
R0300	3.856	.065	.04	.065
R0300	3.807	.065	.04	.065
R0300	3.731	.07	.045	.07
R0300	3.665	.065	.04	.065
R0300	3.614	.065	.04	.065
R0300	3.567	.065	.04	.065
R0300	3.513	.065	.045	.065
R0300	3.453	.065	.045	.065
R0300	3.402	.065	.045	.065
R0300	3.320	.065	.045	.065
R0300	3.261	.065	.045	.065
R0400	3.209	.065	.045	.065
R0400	3.168	.065	.045	.065
R0400	3.098	.065	.045	.065
R0400	3.001	.065	.045	.065
R0500	2.964	.065	.045	.065
R0500	2.912	.055	.035	.055
R0500	2.862	.055	.035	.055
R0500	2.798	.055	.035	.055
R0500	2.750	.055	.035	.055
R0500	2.652	.065	.045	.065
R0500	2.603	.053	.035	.053
R0500	2.531	.055	.035	.055
R0500	2.476	.055	.035	.055
R0500	2.389	.055	.035	.055
R0500	2.294	.055	.035	.055
R0500	2.241	.053	.035	.053
R0500	2.193	.055	.035	.055
R0500	2.153	.055	.035	.055
R0600	2.112	.055	.035	.055
R0600	2.078	.055	.035	.055
R0700	2.045	.055	.035	.055
R0700	2.007	.055	.035	.055
R0700	1.945	.06	.04	.06
R0700	1.906	.06	.04	.06
R0800	1.871	.06	.04	.06
R0800	1.846	.06	.04	.06
R0800	1.816	.06	.04	.06
R0800	1.765	.06	.04	.06
R0800	1.667	.06	.04	.06

River:W12.0400

Reach	River Sta.	n1	n2	n3
R0100	0.201	.065	.045	.065
R0100	0.155	.055	.035	.055
R0100	0.103	.055	.035	.055
R0100	0.061	.053	.035	.053

River:W12.0300

Reach	River Sta.	n1	n2	n3
R0100	2.982	.053	.035	.053

R0100	2.942	.053	.035	.053
R0100	2.868	.053	.035	.053
R0100	2.809	.053	.035	.053
R0100	2.771	.053	.035	.053
R0100	2.716	.053	.035	.053
R0100	2.667	.053	.035	.053
R0100	2.577	.053	.035	.053
R0200	2.516	.053	.035	.053
R0200	2.494	.053	.035	.053
R0200	2.440	.053	.035	.053
R0200	2.382	.053	.035	.053
R0200	2.362	.053	.035	.053
R0200	2.311	.053	.035	.053
R0200	2.292	.053	.035	.053
R0200	2.246	.053	.035	.053
R0300	2.191	.053	.035	.053
R0300	2.180	.053	.035	.053
R0400	2.132	.053	.035	.053
R0400	2.091	.053	.035	.053
R0400	2.050	.053	.035	.053
R0400	1.993	.053	.035	.053
R0450	1.917	.053	.035	.053
R0450	1.891	.053	.035	.053
R0500	1.863	.053	.035	.053
R0500	1.815	.053	.035	.053
R0500	1.769	.053	.035	.053
R0500	1.678	.053	.035	.053
R0500	1.608	.053	.035	.053
R0500	1.544	.053	.035	.053
R0500	1.493	.05	.045	.05

River:W12.0365

Reach	River Sta.	n1	n2	n3
R0100	0.212	.053	.035	.053
R0100	0.164	.053	.035	.053
R0100	0.129	.053	.035	.053
R0100	0.068	.053	.035	.053

River:W12.0355

Reach	River Sta.	n1	n2	n3
R0100	0.374	.053	.035	.053
R0100	0.320	.053	.035	.053
R0100	0.273	.053	.035	.053
R0100	0.221	.053	.035	.053
R0100	0.164	.053	.035	.053
R0100	0.116	.053	.035	.053
R0100	0.084	.053	.035	.053
R0100	0.039	.053	.035	.053

River:W10.0555

Reach	River Sta.	n1	n2	n3
R0100	1.128	.07	.045	.07
R0100	1.042	.07	.045	.07
R0100	0.995	.07	.045	.07
R0100	0.956	.07	.045	.07
R0100	0.917	.07	.045	.07
R0200	0.884	.07	.045	.07
R0200	0.799	.07	.045	.07
R0200	0.710	.07	.045	.07
R0200	0.670	.07	.045	.07
R0200	0.621	.07	.045	.07
R0200	0.527	.07	.045	.07
R0200	0.432	.07	.045	.07
R0200	0.377	.07	.045	.07
R0200	0.340	.07	.045	.07
R0200	0.242	.07	.045	.07
R0200	0.157	.07	.045	.07
R0200	0.077	.07	.045	.07
R0200	0.021	.065	.035	.065

River:W10.0558

Reach	River Sta.	n1	n2	n3
R0100	0.186	.07	.045	.07
R0100	0.109	.07	.045	.07
R0100	0.050	.07	.045	.07

River:W12.0100

Reach	River Sta.	n1	n2	n3
R0100	0.083	.065	.04	.065
R0100	0.046	.065	.04	.065
R0100	0.030	.065	.04	.065

River:W11.0100

Reach	River Sta.	n1	n2	n3
R0100	2.050	.065	.04	.065
R0100	1.984	.065	.04	.065
R0100	1.897	.065	.04	.065
R0100	1.806	.065	.04	.065
R0100	1.715	.065	.04	.065
R0100	1.681	.065	.04	.065
R0100	1.639	.065	.04	.065
R0100	1.579	.065	.04	.065
R0100	1.475	.065	.04	.065
R0100	1.412	.065	.04	.065
R0100	1.391	.065	.04	.065
R0100	1.316	.065	.04	.065

R0100	1.221	.065	.04	.065
R0100	1.144	.065	.04	.065
R0100	1.050	.065	.04	.065
R0100	0.963	.065	.04	.065
R0100	0.888	.065	.04	.065
R0100	0.871	.065	.04	.065
R0100	0.847	.065	.04	.065
R0100	0.777	.065	.04	.065
R0100	0.701	.065	.04	.065
R0100	0.631	.065	.04	.065
R0100	0.544	.065	.04	.065
R0100	0.511	.065	.04	.065
R0100	0.469	.065	.04	.065
R0100	0.438	.065	.04	.065
R0100	0.356	.07	.045	.07
R0100	0.307	.065	.035	.065
R0200	0.262	.065	.035	.065
R0200	0.228	.065	.035	.065
R0300	0.208	.065	.035	.065
R0300	0.134	.065	.035	.065
R0300	0.044	.065	.035	.065

River:W11.0155

Reach	River Sta.	n1	n2	n3
R0100	0.272	.065	.035	.065
R0100	0.237	.065	.035	.065
R0100	0.219	.065	.035	.065
R0100	0.133	.065	.035	.065
R0100	0.067	.065	.035	.065
R0100	0.049	.065	.035	.065

River:W11.0405

Reach	River Sta.	n1	n2	n3
R0100	0.337	.065	.035	.065
R0100	0.296	.065	.035	.065
R0100	0.262	.065	.035	.065
R0100	0.226	.065	.035	.065
R0100	0.142	.07	.045	.07
R0100	0.056	.07	.045	.07

River:W10.0600

Reach	River Sta.	n1	n2	n3
R0100	3.445	.07	.045	.07
R0100	3.422	.07	.045	.07
R0100	3.351	.07	.045	.07
R0100	3.308	.07	.045	.07

River:W12.0500

Reach	River Sta.	n1	n2	n3
R0100	1.098	.055	.035	.055
R0100	1.063	.055	.035	.055
R0100	0.997	.06	.04	.06
R0100	0.972	.06	.04	.06
R0100	0.934	.06	.04	.06
R0100	0.893	.065	.045	.065
R0100	0.858	.065	.045	.065
R0100	0.838	.065	.045	.065

River:W12.0600

Reach	River Sta.	n1	n2	n3
R0100	0.120	.06	.04	.06
R0100	0.082	.065	.045	.065
R0100	0.050	.065	.045	.065
R0100	0.028	.065	.045	.065

River:W12.0375

Reach	River Sta.	n1	n2	n3
R0100	0.704	.053	.035	.053
R0100	0.628	.053	.035	.053
R0100	0.535	.053	.035	.053
R0100	0.462	.053	.035	.053
R0100	0.388	.053	.035	.053
R0100	0.310	.053	.035	.053

SUMMARY OF REACH LENGTHS

River: W10.0000

Reach	River Sta.	Left	Channel	Right
R0100	4.971	215	289	250
R0100	4.916	0	0	0
R0200	4.850	295	316	295
R0200	4.790	418	418	418
R0200	4.711	378	378	378
R0200	4.640	500	500	500
R0200	4.545	456	456	456
R0200	4.459	280	277	230
R0200	4.406	295	330	330
R0200	4.344	408	408	410
R0200	4.266	370	366	359
R0200	4.197	315	310	300
R0200	4.138	360	405	405

R0200	4.062	220	234	237
R0200	4.017	0	0	0
R0300	3.977	467	470	476
R0300	3.888	245	241	235
R0300	3.842	195	195	195
R0300	3.805	468	468	468
R0300	3.717	413	413	413
R0300	3.638	308	308	308
R0300	3.580	0	0	0
R0400	3.539	249	251	244
R0400	3.491	119	119	119
R0400	3.468	0	0	0
R0500	3.448	470	470	470
R0500	3.359	500	500	500
R0500	3.264	499	499	499
R0500	3.170	506	506	506
R0500	3.074	0	0	0

River: W11.0000

Reach	River Sta.	Left	Channel	Right
R0100	5.687	321	321	321
R0100	5.626	370	395	380
R0100	5.551	0	0	0
R0200	5.511	393	392	365
R0200	5.437	471	471	471
R0200	5.347	450	477	477
R0200	5.257	508	508	460
R0200	5.158	175	203	203
R0200	5.122	150	177	185
R0200	5.089	270	314	314
R0200	5.029	511	511	511
R0200	4.933	292	292	292
R0200	4.877	0	0	0
R0300	4.843	100	118	108
R0300	4.821	0	0	0
R0400	4.799	205	233	205
R0400	4.755	400	429	445
R0400	4.674	478	478	478
R0400	4.584	437	437	437
R0400	4.501	340	388	370
R0400	4.427	464	464	464
R0400	4.339	129	129	129
R0400	4.315	0	0	0
R0500	4.270	474	474	474
R0500	4.180	355	355	355
R0500	4.113	174	174	174
R0500	4.080	144	144	144
R0500	4.053	226	226	226
R0500	4.010	261	261	245
R0500	3.961	290	296	250
R0500	3.905	260	260	230
R0500	3.855	307	307	307
R0500	3.797	385	385	375
R0500	3.724	457	457	457

R0500	3.638	328	328	328
R0500	3.576	107	107	107
R0500	3.555	270	270	270
R0600	3.504	282	282	282
R0600	3.451	0	0	0
R0700	3.402	245	245	245
R0700	3.356	478	478	478
R0700	3.266	467	467	467
R0700	3.177	144	144	144
R0700	3.150	491	491	491
R0700	3.057	279	279	279
R0800	3.004	233	233	233
R0800	2.960	320	338	310
R0800	2.896	0	0	0

River: W11.0205

Reach	River Sta.	Left	Channel	Right
R0100	0.248	218	218	218
R0100	0.207	411	411	411
R0100	0.129	516	516	516
R0100	0.031	0	0	0

River: W12.0000

Reach	River Sta.	Left	Channel	Right
R0100	4.380	482	482	450
R0100	4.288	371	371	380
R0100	4.218	543	543	543
R0100	4.115	0	0	0
R0200	4.084	290	290	265
R0200	4.029	346	346	346
R0200	3.963	288	288	288
R0200	3.909	0	0	0
R0300	3.890	177	177	177
R0300	3.856	258	258	258
R0300	3.807	401	401	401
R0300	3.731	348	348	348
R0300	3.665	270	270	270
R0300	3.614	250	250	250
R0300	3.567	287	287	287
R0300	3.513	313	313	313
R0300	3.453	271	271	271
R0300	3.402	430	430	430
R0300	3.320	312	312	290
R0300	3.261	0	0	0
R0400	3.209	216	216	216
R0400	3.168	370	372	360
R0400	3.098	500	511	500
R0400	3.001	0	0	0
R0500	2.964	260	271	255
R0500	2.912	255	263	263
R0500	2.862	341	341	341
R0500	2.798	245	253	245

R0500	2.750	515	515	515
R0500	2.652	258	258	258
R0500	2.603	380	385	380
R0500	2.531	284	288	280
R0500	2.476	461	461	461
R0500	2.389	490	499	499
R0500	2.294	281	281	281
R0500	2.241	252	252	252
R0500	2.193	208	214	208
R0500	2.153	0	0	0
R0600	2.112	181	181	181
R0600	2.078	0	0	0
R0700	2.045	203	203	203
R0700	2.007	335	327	327
R0700	1.945	210	205	205
R0700	1.906	0	0	0
R0800	1.871	132	132	132
R0800	1.846	162	162	162
R0800	1.816	270	269	250
R0800	1.765	515	517	525
R0800	1.667	2240	2337	2275

River: W12.0400

Reach	River Sta.	Left	Channel	Right
R0100	0.201	247	244	240
R0100	0.155	270	276	280
R0100	0.103	222	222	222
R0100	0.061	0	0	0

River: W12.0300

Reach	River Sta.	Left	Channel	Right
R0100	2.982	206	206	206
R0100	2.942	395	395	395
R0100	2.868	308	308	308
R0100	2.809	193	203	193
R0100	2.771	250	290	250
R0100	2.716	233	256	238
R0100	2.667	479	479	479
R0100	2.577	0	0	0
R0200	2.516	105	117	105
R0200	2.494	261	283	278
R0200	2.440	260	309	268
R0200	2.382	104	104	104
R0200	2.362	260	271	270
R0200	2.311	97	101	104
R0200	2.292	230	239	210
R0200	2.246	0	0	0
R0300	2.191	54	57	54
R0300	2.180	0	0	0
R0400	2.132	210	216	220
R0400	2.091	210	218	208

R0400	2.050	290	302	280
R0400	1.993	0	0	0
R0450	1.917	130	140	132
R0450	1.891	0	0	0
R0500	1.863	250	252	252
R0500	1.815	200	242	242
R0500	1.769	480	483	483
R0500	1.678	365	365	365
R0500	1.608	338	338	338
R0500	1.544	285	272	250
R0500	1.493	0	0	0

River: W12.0365

Reach	River Sta.	Left	Channel	Right
R0100	0.212	215	252	237
R0100	0.164	180	184	187
R0100	0.129	322	322	322
R0100	0.068	0	0	0

River: W12.0355

Reach	River Sta.	Left	Channel	Right
R0100	0.374	272	287	287
R0100	0.320	232	247	247
R0100	0.273	260	272	272
R0100	0.221	290	302	305
R0100	0.164	253	253	253
R0100	0.116	165	171	171
R0100	0.084	185	234	268
R0100	0.039	0	0	0

River: W10.0555

Reach	River Sta.	Left	Channel	Right
R0100	1.128	454	451	449
R0100	1.042	251	251	251
R0100	0.995	208	204	200
R0100	0.956	206	206	206
R0100	0.917	0	0	0
R0200	0.884	451	451	451
R0200	0.799	473	473	473
R0200	0.710	207	207	207
R0200	0.670	260	260	260
R0200	0.621	496	496	496
R0200	0.527	502	502	502
R0200	0.432	291	291	291
R0200	0.377	193	193	193
R0200	0.340	517	517	517
R0200	0.242	449	449	449
R0200	0.157	424	424	424
R0200	0.077	303	298	293
R0200	0.021	0	0	0

River: W10.0558

Reach	River Sta.	Left	Channel	Right
R0100	0.186	404	404	404
R0100	0.109	314	309	274
R0100	0.050	0	0	0

River: W12.0100

Reach	River Sta.	Left	Channel	Right
R0100	0.083	195	195	195
R0100	0.046	85	85	85
R0100	0.030	0	0	0

River: W11.0100

Reach	River Sta.	Left	Channel	Right
R0100	2.050	345	344	350
R0100	1.984	463	463	463
R0100	1.897	480	480	480
R0100	1.806	483	483	483
R0100	1.715	180	180	180
R0100	1.681	219	219	219
R0100	1.639	340	317	280
R0100	1.579	549	549	549
R0100	1.475	332	332	332
R0100	1.412	114	114	114
R0100	1.391	395	395	395
R0100	1.316	499	499	499
R0100	1.221	407	407	407
R0100	1.144	496	496	496
R0100	1.050	430	464	420
R0100	0.963	370	394	390
R0100	0.888	91	91	91
R0100	0.871	128	128	128
R0100	0.847	370	369	350
R0100	0.777	398	398	398
R0100	0.701	371	371	371
R0100	0.631	462	462	462
R0100	0.544	171	171	171
R0100	0.511	225	222	215
R0100	0.469	165	165	165
R0100	0.438	390	435	440
R0100	0.356	257	257	257
R0100	0.307	0	0	0
R0200	0.262	182	182	182
R0200	0.228	104	104	104
R0300	0.208	393	393	393
R0300	0.134	420	475	470
R0300	0.044	0	0	0

River: W11.0155

Reach	River Sta.	Left	Channel	Right
R0100	0.272	182	182	182
R0100	0.237	93	93	93
R0100	0.219	456	456	456
R0100	0.133	348	348	348
R0100	0.067	97	97	102
R0100	0.049	0	0	0

River: W11.0405

Reach	River Sta.	Left	Channel	Right
R0100	0.337	210	220	230
R0100	0.296	177	177	177
R0100	0.262	191	191	191
R0100	0.226	444	444	375
R0100	0.142	455	455	455
R0100	0.056	293	293	293

River: W10.0600

Reach	River Sta.	Left	Channel	Right
R0100	3.445	107	121	120
R0100	3.422	383	376	376
R0100	3.351	228	228	228
R0100	3.308	0	0	0

River: W12.0500

Reach	River Sta.	Left	Channel	Right
R0100	1.098	190	189	190
R0100	1.063	344	344	344
R0100	0.997	134	134	134
R0100	0.972	203	203	203
R0100	0.934	213	213	213
R0100	0.893	170	185	176
R0100	0.858	107	107	110
R0100	0.838	0	0	0

River: W12.0600

Reach	River Sta.	Left	Channel	Right
R0100	0.120	200	200	200
R0100	0.082	170	170	170
R0100	0.050	110	115	113

R0100	0.028	0	0	0

River: W12.0375

Reach	River Sta.	Left	Channel	Right
R0100	0.704	395	398	400
R0100	0.628	495	495	495
R0100	0.535	384	384	384
R0100	0.462	390	390	390
R0100	0.388	413	413	413
R0100	0.310	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: W10.0000

Reach	River Sta.	Contr.	Expan.
R0100	4.971	.1	.3
R0100	4.916	.1	.3
R0200	4.850	.1	.3
R0200	4.790	.1	.3
R0200	4.711	.1	.3
R0200	4.640	.1	.3
R0200	4.545	.1	.3
R0200	4.459	.1	.3
R0200	4.406	.1	.3
R0200	4.344	.1	.3
R0200	4.266	.1	.3
R0200	4.197	.1	.3
R0200	4.138	.1	.3
R0200	4.062	.1	.3
R0200	4.017	.1	.3
R0300	3.977	.1	.3
R0300	3.888	.1	.3
R0300	3.842	.1	.3
R0300	3.805	.1	.3
R0300	3.717	.1	.3
R0300	3.638	.1	.3
R0300	3.580	.1	.3
R0400	3.539	.1	.3
R0400	3.491	.1	.3
R0400	3.468	.1	.3
R0500	3.448	.1	.3
R0500	3.359	.1	.3
R0500	3.264	.1	.3
R0500	3.170	.1	.3
R0500	3.074	.1	.3

River: W11.0000

Reach	River Sta.	Contr.	Expan.
R0100	5.687	.1	.3
R0100	5.626	.1	.3
R0100	5.551	.1	.3
R0200	5.511	.1	.3
R0200	5.437	.1	.3
R0200	5.347	.1	.3
R0200	5.257	.1	.3
R0200	5.158	.1	.3
R0200	5.122	.1	.3
R0200	5.089	.1	.3
R0200	5.029	.1	.3
R0200	4.933	.1	.3
R0200	4.877	.1	.3
R0300	4.843	.1	.3
R0300	4.821	.1	.3
R0400	4.799	.1	.3
R0400	4.755	.1	.3
R0400	4.674	.1	.3
R0400	4.584	.1	.3
R0400	4.501	.1	.3
R0400	4.427	.1	.3
R0400	4.339	.1	.3
R0400	4.315	.1	.3
R0500	4.270	.1	.3
R0500	4.180	.1	.3
R0500	4.113	.1	.3
R0500	4.080	.1	.3
R0500	4.053	.1	.3
R0500	4.010	.1	.3
R0500	3.961	.1	.3
R0500	3.905	.1	.3
R0500	3.855	.1	.3
R0500	3.797	.1	.3
R0500	3.724	.1	.3
R0500	3.638	.1	.3
R0500	3.576	.1	.3
R0500	3.555	.1	.3
R0600	3.504	.1	.3
R0600	3.451	.1	.3
R0700	3.402	.1	.3
R0700	3.356	.1	.3
R0700	3.266	.1	.3
R0700	3.177	.1	.3
R0700	3.150	.1	.3
R0700	3.057	.1	.3
R0800	3.004	.1	.3
R0800	2.960	.1	.3
R0800	2.896	.1	.3

River: W11.0205

Reach	River Sta.	Contr.	Expan.
R0100	0.248	.1	.3

R0100	0.207	.1	.3
R0100	0.129	.1	.3
R0100	0.031	.1	.3

River: W12.0000

Reach	River Sta.	Contr.	Expan.
R0100	4.380	.1	.3
R0100	4.288	.1	.3
R0100	4.218	.1	.3
R0100	4.115	.1	.3
R0200	4.084	.1	.3
R0200	4.029	.1	.3
R0200	3.963	.1	.3
R0200	3.909	.1	.3
R0300	3.890	.1	.3
R0300	3.856	.1	.3
R0300	3.807	.1	.3
R0300	3.731	.1	.3
R0300	3.665	.1	.3
R0300	3.614	.1	.3
R0300	3.567	.1	.3
R0300	3.513	.1	.3
R0300	3.453	.1	.3
R0300	3.402	.1	.3
R0300	3.320	.1	.3
R0300	3.261	.1	.3
R0400	3.209	.1	.3
R0400	3.168	.1	.3
R0400	3.098	.1	.3
R0400	3.001	.1	.3
R0500	2.964	.1	.3
R0500	2.912	.1	.3
R0500	2.862	.1	.3
R0500	2.798	.1	.3
R0500	2.750	.1	.3
R0500	2.652	.1	.3
R0500	2.603	.1	.3
R0500	2.531	.1	.3
R0500	2.476	.1	.3
R0500	2.389	.1	.3
R0500	2.294	.1	.3
R0500	2.241	.1	.3
R0500	2.193	.1	.3
R0500	2.153	.1	.3
R0600	2.112	.1	.3
R0600	2.078	.1	.3
R0700	2.045	.1	.3
R0700	2.007	.1	.3
R0700	1.945	.1	.3
R0700	1.906	.1	.3
R0800	1.871	.1	.3
R0800	1.846	.1	.3
R0800	1.816	.1	.3
R0800	1.765	.1	.3
R0800	1.667	.1	.3

River: W12.0400

Reach	River Sta.	Contr.	Expan.
R0100	0.201	.1	.3
R0100	0.155	.1	.3
R0100	0.103	.1	.3
R0100	0.061	.1	.3

River: W12.0300

Reach	River Sta.	Contr.	Expan.
R0100	2.982	.1	.3
R0100	2.942	.1	.3
R0100	2.868	.1	.3
R0100	2.809	.1	.3
R0100	2.771	.1	.3
R0100	2.716	.1	.3
R0100	2.667	.1	.3
R0100	2.577	.1	.3
R0200	2.516	.1	.3
R0200	2.494	.1	.3
R0200	2.440	.1	.3
R0200	2.382	.1	.3
R0200	2.362	.1	.3
R0200	2.311	.1	.3
R0200	2.292	.1	.3
R0200	2.246	.1	.3
R0300	2.191	.1	.3
R0300	2.180	.1	.3
R0400	2.132	.1	.3
R0400	2.091	.1	.3
R0400	2.050	.1	.3
R0400	1.993	.1	.3
R0450	1.917	.1	.3
R0450	1.891	.1	.3
R0500	1.863	.1	.3
R0500	1.815	.1	.3
R0500	1.769	.1	.3
R0500	1.678	.1	.3
R0500	1.608	.1	.3
R0500	1.544	.1	.3
R0500	1.493	.1	.3

River: W12.0365

Reach	River Sta.	Contr.	Expan.
R0100	0.212	.1	.3
R0100	0.164	.1	.3
R0100	0.129	.1	.3
R0100	0.068	.1	.3

River: W12.0355

Reach	River Sta.	Contr.	Expan.
R0100	0.374	.1	.3
R0100	0.320	.1	.3
R0100	0.273	.1	.3
R0100	0.221	.1	.3
R0100	0.164	.1	.3
R0100	0.116	.1	.3
R0100	0.084	.1	.3
R0100	0.039	.1	.3

River: W10.0555

Reach	River Sta.	Contr.	Expan.
R0100	1.128	.1	.3
R0100	1.042	.1	.3
R0100	0.995	.1	.3
R0100	0.956	.1	.3
R0100	0.917	.1	.3
R0200	0.884	.1	.3
R0200	0.799	.1	.3
R0200	0.710	.1	.3
R0200	0.670	.1	.3
R0200	0.621	.1	.3
R0200	0.527	.1	.3
R0200	0.432	.1	.3
R0200	0.377	.1	.3
R0200	0.340	.1	.3
R0200	0.242	.1	.3
R0200	0.157	.1	.3
R0200	0.077	.1	.3
R0200	0.021	.1	.3

River: W10.0558

Reach	River Sta.	Contr.	Expan.
R0100	0.186	.1	.3
R0100	0.109	.1	.3
R0100	0.050	.1	.3

River: W12.0100

Reach	River Sta.	Contr.	Expan.
R0100	0.083	.1	.3
R0100	0.046	.1	.3
R0100	0.030	.1	.3

River: W11.0100

Reach	River Sta.	Contr.	Expan.
R0100	2.050	.1	.3
R0100	1.984	.1	.3
R0100	1.897	.1	.3
R0100	1.806	.1	.3
R0100	1.715	.1	.3
R0100	1.681	.1	.3
R0100	1.639	.1	.3
R0100	1.579	.1	.3
R0100	1.475	.1	.3
R0100	1.412	.1	.3
R0100	1.391	.1	.3
R0100	1.316	.1	.3
R0100	1.221	.1	.3
R0100	1.144	.1	.3
R0100	1.050	.1	.3
R0100	0.963	.1	.3
R0100	0.888	.1	.3
R0100	0.871	.1	.3
R0100	0.847	.1	.3
R0100	0.777	.1	.3
R0100	0.701	.1	.3
R0100	0.631	.1	.3
R0100	0.544	.1	.3
R0100	0.511	.1	.3
R0100	0.469	.1	.3
R0100	0.438	.1	.3
R0100	0.356	.1	.3
R0100	0.307	.1	.3
R0200	0.262	.1	.3
R0200	0.228	.1	.3
R0300	0.208	.1	.3
R0300	0.134	.1	.3
R0300	0.044	.1	.3

River: W11.0155

Reach	River Sta.	Contr.	Expan.
R0100	0.272	.1	.3
R0100	0.237	.1	.3
R0100	0.219	.1	.3
R0100	0.133	.1	.3
R0100	0.067	.1	.3
R0100	0.049	.1	.3

River: W11.0405

Reach	River Sta.	Contr.	Expan.
R0100	0.337	.1	.3
R0100	0.296	.1	.3
R0100	0.262	.1	.3

R0100	0.226	.1	.3
R0100	0.142	.1	.3
R0100	0.056	.1	.3

River: W10.0600

Reach	River Sta.	Contr.	Expan.
R0100	3.445	.1	.3
R0100	3.422	.1	.3
R0100	3.351	.1	.3
R0100	3.308	.1	.3

River: W12.0500

Reach	River Sta.	Contr.	Expan.
R0100	1.098	.1	.3
R0100	1.063	.1	.3
R0100	0.997	.1	.3
R0100	0.972	.1	.3
R0100	0.934	.1	.3
R0100	0.893	.1	.3
R0100	0.858	.1	.3
R0100	0.838	.1	.3

River: W12.0600

Reach	River Sta.	Contr.	Expan.
R0100	0.120	.1	.3
R0100	0.082	.1	.3
R0100	0.050	.1	.3
R0100	0.028	.1	.3

River: W12.0375

Reach	River Sta.	Contr.	Expan.
R0100	0.704	.1	.3
R0100	0.628	.1	.3
R0100	0.535	.1	.3
R0100	0.462	.1	.3
R0100	0.388	.1	.3
R0100	0.310	.1	.3

E.5.4: HEC-RAS Geometry Data

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

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

PROJECT DATA
Project Title: Rio Verde South Extension
Project File : rioverde.prj
Run Date and Time: 5/25/99 11:45:26 AM

Project in English units

Project Description:
Rio Verde South Extension Floodplain Delineation Study
FCD Contract No.
93-17

W10.0000 = Wash 10
W11.0000 = Wash 11
W11.0100 = Wash 11
South
W12.0000 = Wash 12
W12.0300 = Wash 12 South

SEE DISKETTE,
IN BACK OF VOL. 2,
FOR
FINAL HEC-RAS
OUTPUT REPORT
OF 6-16-00

JEF / Hydrology &
Geomorphology, Inc.
May 1999

JUNCTION INFORMATION

Name: J12.0400
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W12.0300	R0100	to W12.0300	R0200	319	
W12.0400	R0100	to W12.0300	R0200	322	

Name: S12.0355
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W12.0300	R0200	to W12.0300	R0300	324	
W12.0300	R0200	to W12.0355	R0100	294	

Name: J12.0355
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W12.0000	R0500	to W12.0000	R0600	213	
W12.0355	R0100	to W12.0000	R0600	208	

Name: S12.0365
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W12.0300	R0300	to W12.0300	R0400	398	
W12.0300	R0300	to W12.0365	R0100	364	

Name: S12.0300
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W12.0000	R0300	to W12.0300	R0100	213	
W12.0000	R0300	to W12.0000	R0400	278	

Name: S12.0400
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W12.0000	R0400	to W12.0400	R0100	187	
W12.0000	R0400	to W12.0000	R0500	197	

Name: S12.0375
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W12.0300	R0450	to W12.0300	R0500	149	

```
W12.0300        R0450            to W12.0375        R0100                161

Name: S12.0500
Description:
Energy computation Method

    Length across Junction             Tributary
     River           Reach               River           Reach        Length   Angle
W12.0000        R0600            to W12.0000        R0700                173
W12.0000        R0600            to W12.0500        R0100                180

Name: S12.0600
Description:
Energy computation Method

    Length across Junction             Tributary
     River           Reach               River           Reach        Length   Angle
W12.0000        R0700            to W12.0000        R0800                185
W12.0000        R0700            to W12.0600        R0100                203

Name: J12.0365
Description:
Energy computation Method

    Length across Junction             Tributary
     River           Reach               River           Reach        Length   Angle
W12.0300        R0400            to W12.0300        R0450                391
W12.0365        R0100            to W12.0300        R0450                350

Name: S12.0000
Description: Split from Wash 11 to Wash 12
Energy computation Method

    Length across Junction             Tributary
     River           Reach               River           Reach        Length   Angle
W11.0000        R0200            to W11.0000        R0300                180
W11.0000        R0200            to W12.0000        R0100                173

Name: S11.0000
Description: Split to Wash 11 from Wash 10
Energy computation Method

    Length across Junction             Tributary
     River           Reach               River           Reach        Length   Angle
W10.0000        R0100            to W10.0000        R0200                348
W10.0000        R0100            to W11.0000        R0100                307

Name: S11.0155
Description:
Energy computation Method

    Length across Junction             Tributary
     River           Reach               River           Reach        Length   Angle
W11.0100        R0100            to W11.0100        R0200                235
W11.0100        R0100            to W11.0155        R0100                234

Name: S10.0555
Description:
Energy computation Method

    Length across Junction             Tributary
     River           Reach               River           Reach        Length   Angle
W10.0000        R0200            to W10.0000        R0300                213
```

W10.0000	R0200	to W10.0555	R0100	216	

Name: S10.0558
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W10.0555	R0100	to W10.0555	R0200	171	
W10.0555	R0100	to W10.0558	R0100	201	0

Name: J10.0558
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W10.0000	R0300	to W10.0000	R0400	221	
W10.0558	R0100	to W10.0000	R0400	267	

Name: J10.0555
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W11.0100	R0200	to W11.0100	R0300	104	
W10.0555	R0200	to W11.0100	R0300	109	

Name: S10.0600
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W10.0000	R0400	to W10.0000	R0500	106	
W10.0000	R0400	to W10.0600	R0100	123	0

Name: S11.0205
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W11.0000	R0300	to W11.0000	R0400	114	
W11.0000	R0300	to W11.0205	R0100	111	

Name: J11.0205
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W12.0000	R0100	to W12.0000	R0200	165	
W11.0205	R0100	to W12.0000	R0200	166	

Name: S12.0100
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W12.0000	R0200	to W12.0000	R0300	102	

W12.0000	R0200	to W12.0100	R0100	106

Name: J12.0100
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W11.0000	R0400	to W11.0000	R0500	237	
W12.0100	R0100	to W11.0000	R0500	160	

Name: S11.0405
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W11.0000	R0500	to W11.0000	R0600	307	
W11.0000	R0500	to W11.0405	R0100	270	

Name: J11.0405
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W11.0000	R0700	to W11.0000	R0800	285	
W11.0405	R0100	to W11.0000	R0800	285	

Name: J11.0100
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W11.0000	R0600	to W11.0000	R0700	255	
W11.0155	R0100	to W11.0000	R0700	257	
W11.0100	R0300	to W11.0000	R0700	231	

Name: S11.0100
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
W11.0000	R0100	to W11.0000	R0200	215	
W11.0000	R0100	to W11.0100	R0100	208	

CROSS SECTION RIVER: W10.0000
REACH: R0100 RS: 4.971

INPUT
Description: Q = 2337 cfs from C531 HEC-1 FCD 93-07
Station Elevation Data num= 191

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9354.8	2164.1	9360.3	2164.1	9369.2	2164	9377.2	2163.8	9391.5	2163.3
9398.5	2163.6	9399.7	2163.7	9410.3	2164.5	9411	2164.6	9412.3	2164.6
9434.7	2165.4	9439.5	2165.4	9445.3	2165.4	9450.7	2165.3	9468.9	2164.9
9487.9	2163.9	9498.5	2163.7	9518.4	2164	9518.5	2164	9518.7	2164
9536.3	2163.4	9539.7	2163.2	9541.1	2163.4	9542.1	2163.5	9546.5	2163.4
9551.9	2164	9554.3	2164.3	9557.9	2164.3	9569.8	2164	9600.3	2163.4
9605.6	2163.2	9619.7	2162.3	9623.3	2162.1	9631.1	2162.7	9633.1	2162.9
9644	2163.2	9646.9	2163.2	9648.6	2163.3	9658.5	2163.5	9661.4	2163.2

9665.4	2162.6	9666.9	2162.6	9670.6	2162.5	9673.1	2162.7	9676.8	2163.1
9679.5	2163.1	9680.1	2163.1	9684.2	2162.9	9685.9	2162.8	9689.7	2163
9692.8	2163.2	9693	2163.2	9696.1	2163.1	9714.3	2162.8	9715.2	2162.8
9720	2163.2	9733.8	2163.7	9741.2	2164	9744.5	2164.2	9773.9	2163.6
9779.8	2163.5	9782.5	2163.4	9784.2	2163.2	9790.1	2162.7	9794.7	2163.5
9795	2163.6	9795.6	2163.6	9802.3	2163.6	9813.1	2163.7	9845.1	2164.3
9848	2164.2	9861.9	2164.4	9866.2	2164.4	9881.3	2163.8	9883.1	2163.7
9884.7	2163.7	9904.8	2163.8	9934.9	2164	9941.7	2163.9	9947.7	2163.8
9955.12	2163.573	9964	2163.3	9970.4	2163.3	9983.3	2163.4	9990.1	2163.5
9995.1	2163.2	9999.3	2162.9	10000	2162.8	10000.9	2163.1	10003.1	2163.65
10005.3	2164.2	10010.6	2164.1	10018.7	2163.9	10031.2	2163.4	10035.3	2163.2
10039.8	2162.6	10045.3	2163.3	10045.7	2163.4	10047.2	2163.3	10054.8	2162.7
10061	2163.3	10065.1	2163.8	10067	2163.6	10072.8	2162.9	10077.8	2163.7
10080.8	2164.1	10088.7	2163.1	10089.1	2163	10089.9	2163.1	10106.3	2164.4
10120.8	2163.6	10127.5	2163.2	10134.8	2163.4	10138.5	2163.6	10141.8	2163.6
10148.4	2163.5	10154.7	2163.4	10168.7	2163.1	10169.7	2163.1	10170.6	2163.1
10193.8	2164	10199.7	2164.3	10206.1	2164.7	10213.5	2164.4	10214.7	2164.4
10224.6	2164.2	10252	2163.5	10254.1	2163.4	10257.7	2163.3	10263.3	2162.8
10272.8	2162	10280.5	2161.8	10282.9	2161.8	10284	2161.6	10287.1	2160.9
10289.6	2161.5	10293.5	2162.5	10299.6	2162.7	10313.2	2163.1	10316.3	2163.3
10322.4	2163.4	10330.7	2163.5	10336.3	2163.6	10343.8	2163.5	10345.8	2163.5
10346.5	2163.5	10354.3	2163.7	10357.6	2163.4	10360.5	2163.2	10365.3	2162.9
10366.9	2162.7	10372.1	2162.4	10372.9	2162.4	10377	2162.1	10380.3	2162
10381.3	2162	10387	2162.3	10392	2162.3	10396.9	2162.4	10406.2	2162.5
10406.5	2162.5	10406.7	2162.5	10408	2162.6	10414.6	2162.7	10415.8	2162.7
10419.3	2162.7	10421.7	2162.6	10428.6	2162.6	10431.3	2163	10444	2165
10445	2165	10445.8	2165.1	10447.4	2165.1	10471.2	2166	10473.4	2166
10476	2166.1	10477.9	2166.1	10501.6	2166	10504.5	2165.9	10506.3	2165.8
10509	2165.7	10534.5	2164.6	10559.2	2164.1	10559.6	2164.1	10560.9	2164
10562.6	2163.9	10572.1	2163.5	10579.5	2163.8	10580.8	2163.8	10584.6	2164
10594.9	2164.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9354.8	.07	9955.1	.045	10003.1	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9955.1	10003.1	215	289	250	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10206.1	10594.9	2165

Left Levee Station= 9445.3 Elevation= 2165.4
Right Levee Station= 10476 Elevation= 2166.1

CROSS SECTION RIVER: W10.0000
REACH: R0100 RS: 4.916

INPUT
Description: XS upstream of split S11.0000
Station Elevation Data num= 150

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9361.7	2157.7	9368.5	2157.5	9377.9	2157.1	9387	2156.7	9396.7	2157.2
9421.1	2158.5	9423.7	2158.5	9435.9	2158.3	9441.1	2158.2	9442.4	2158.1
9443.5	2158.2	9462.8	2158.2	9471.7	2157.7	9478.4	2157.3	9484.6	2157.5
9490.7	2157.8	9500.9	2157.7	9509	2157.7	9530.4	2157.7	9540	2157.6
9546.3	2157.2	9551.2	2156.9	9556	2156.8	9559	2156.7	9560.8	2156.7
9566.4	2156.8	9573.2	2157.5	9576.1	2157.9	9586.7	2157.9	9601.5	2158.1
9616	2157.2	9616.5	2157.1	9616.9	2157.1	9622	2157.5	9629	2157.7
9634.4	2157.8	9641.9	2157.1	9645.9	2156.8	9647.9	2156.8	9651.1	2156.6
9655.7	2156.9	9661	2157	9667.2	2156.8	9676.4	2157	9688.8	2157
9692.4	2156.5	9695.1	2156.1	9700.6	2156.8	9702.1	2157	9703.9	2157.1
9712.6	2157.4	9723.3	2157.4	9740.9	2157.5	9749.7	2157.3	9756.7	2156.7
9758.3	2156.6	9758.7	2156.5	9761.3	2156.8	9765.4	2157.1	9766.8	2157.1

9777.4	2157.1	9780.6	2156.8	9787.8	2156.2	9793.4	2157.2	9795.6	2157.5
9796.8	2157.5	9802	2157.6	9853.1	2157.9	9874.4	2157.6	9884	2157.5
9890.6	2157.4	9895.9	2157.5	9902.9	2157.7	9916.7	2157.9	9923.9	2157.6
9925.4	2157.5	9926.7	2157.5	9950	2157.5	9969.6	2157.5	9978.4	2157.5
9993	2157.3	10000	2157.3	10000.8	2157.3	10002.9	2157.3	10006.1	2157.3
10010.7	2157.1	10013	2157.2	10054.1	2157	10060.8	2157.2	10067.6	2157.6
10074.6	2157.2	10086.8	2156.3	10088.5	2156.3	10095.5	2156.7	10096.7	2156.7
10108.2	2157.4	10113.2	2156.9	10116.9	2156.5	10120.5	2157	10124.5	2157.6
10136.7	2156.2	10137.1	2156.1	10138.4	2156.2	10152.3	2157.5	10157.8	2157.3
10163.4	2157.1	10170.2	2157.1	10177	2157	10190.2	2156.9	10216.4	2156.2
10228.2	2155.7	10229.7	2155.5	10235	2154.8	10237.5	2155.2	10243.3	2156.2
10250.1	2156.6	10267.1	2157.5	10268.7	2157.5	10276.3	2157.4	10278.6	2157.4
10288.7	2157.3	10335.4	2157.5	10335.9	2157.5	10336.5	2157.5	10346.7	2157.2
10348.7	2157.1	10350.4	2157	10354.1	2156.9	10356	2156.9	10364.4	2156.8
10368.7	2156.8	10372	2156.8	10374.9	2156.8	10395.7	2156.9	10399.1	2156.6
10408.4	2155.7	10413.1	2155.6	10416.8	2155.5	10433.7	2157.4	10434.9	2157.5
10437.3	2157.6	10456.1	2158.3	10476.5	2157.3	10488.7	2157.1	10491	2157.2
10498	2157.5	10502.3	2157.7	10504.8	2157.8	10507.1	2157.8	10512.3	2157.9

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9361.7	.07	9950	.045	10013	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950	10013	0	0	0	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10267.1	10512.3	2159

Left Levee Station= 9462.8 Elevation= 2158.2
Right Levee Station= 10456.1 Elevation= 2158.3

CROSS SECTION RIVER: W10.0000
REACH: R0200 RS: 4.850

INPUT
Description: Q = 921 cfs from D532R HEC-1 FCD 93-07
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9919.3	2149.7	9921.2	2149.6	9954.1	2148.8	9973.6	2148.4	9980.1	2148.1
9999	2147.6	10000	2147.5	10000.4	2147.5	10003.1	2147.3	10004.3	2147.4
10008.7	2147.8	10012.1	2148.1	10015.7	2147.9	10026.5	2147.3	10030.8	2146.9
10035	2146.5	10039.8	2146.7	10054.8	2146.5	10068.1	2146.4	10073.3	2146.8
10078.7	2147.3	10099.9	2147.5	10101.1	2147.5	10101.8	2147.5	10102.2	2147.5
10124.7	2147.3	10129.5	2146.7	10129.7	2146.7	10129.8	2146.7	10135.8	2147.2
10138.1	2147.4	10142	2147.8	10147.4	2148.3	10158.4	2148.7	10173.2	2149.4
10174.4	2149.4	10178.7	2149.6	10181.4	2149.7	10193.8	2149.5	10217.6	2148.9
10223.8	2148.2	10226.3	2148.1	10235.6	2147.8	10243.5	2148.3	10246.7	2148.4
10249.1	2148.5	10260.4	2148.7	10300.4	2149.4	10323.9	2149.5	10333.8	2149.4
10348	2149.4	10355.6	2149.2	10362.6	2148.8	10367	2148.9	10383.3	2149.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9919.3	.07	9980.1	.045	10012.1	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980.1	10012.1	295	316	295	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10181.4	10383.3	2149.7

Right Levee Station= 10323.9 Elevation= 2149.5

CROSS SECTION RIVER: W10.0000
REACH: R0200 RS: 4.790

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INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9806  2142.2    9845  2140.5  9876.7  2141.3  9900.5  2140.7  9909.9  2140.6
  9911.6  2140.4  9913.3  2140.5  9920.3  2140.6  9929.8  2140.5  9937.8  2140.3
  9955.3  2140.1  9962.4  2139.9  9971.8  2139.6  9979.7  2139.8  9983.7  2139.9
  9988.9  2139.4  9994.9  2138.8  9997.9  2138.8   10000  2138.8 10008.7    2140
 10008.8    2140 10008.9    2140 10028.5  2139.4 10034.4  2138.5 10036.7  2138.1
 10044.1    2139 10050.2  2139.9 10054.1  2139.9 10063.5  2140.1 10065.7    2140
 10077.9  2139.6 10091.6  2139.2 10096.4    2139 10097.4  2139.1 10099.5  2139.5
 10102.6  2139.8   10108  2139.7 10112.7  2139.7 10115.4  2139.7 10133.7  2139.7
 10137.7  2139.2 10139.2    2139 10145.5  2140.1 10146.6  2140.3 10147.4  2140.4
 10157.7  2140.7 10162.7  2140.9 10165.4    2141 10184.6  2141.5 10239.3  2141.6
 10245.5  2141.6 10248.2  2141.6 10253.8  2141.4 10265.6  2141.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9806     .07  9983.7    .045 10008.9     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9983.7 10008.9              418     418     418             .1       .3
Left Levee      Station=  9876.7      Elevation=  2141.3

CROSS SECTION          RIVER: W10.0000
REACH: R0200              RS: 4.711

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9791  2130.7  9849.7  2130.6  9850.7  2130.5  9857.6  2130.3  9867.7  2129.8
  9867.8  2129.8  9877.6  2129.1  9878.4  2129.1  9885.4  2129.2  9891.7  2129.4
  9893.9  2129.4  9906.8  2129.3  9915.2  2129.3  9918.4  2129.2  9920.2  2129.2
  9925.4  2129.2  9930.1  2129.2    9934  2129.1    9943  2129.2  9978.8  2129.3
  9986.9  2129.2  9992.5  2128.4  9993.3  2128.3  9996.7  2128.3  9999.1  2128.2
  9999.5  2128.2   10000  2128.2 10001.1  2128.2 10014.8  2128.8 10016.1  2128.9
 10028.8    2130 10031.7  2130.3 10039.7    2131 10045.6  2130.9 10045.7  2130.9
 10058.5  2130.7 10081.1  2130.3 10096.5    2130 10114.2  2129.6 10125.8  2129.3
   10135  2129.4 10140.7  2129.5 10149.4  2129.4   10159  2129.3 10159.1  2129.3
 10166.6  2130.2   10172  2130.6 10179.9  2131.2   10198  2132.5 10198.2  2132.5
 10198.3  2132.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9791     .07  9986.9    .045 10014.8     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9986.9 10014.8              378     378     378             .1       .3
Right Levee     Station= 10039.7      Elevation=    2131

CROSS SECTION          RIVER: W10.0000
REACH: R0200              RS: 4.640

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9691.7  2120.8  9708.9  2120.7  9726.7  2120.7  9743.8  2120.5    9747  2120.4
    9780  2118.2  9782.2  2118.1  9786.9    2118  9837.7    2121  9845.9  2121.5
  9848.8  2121.4  9880.1  2120.6  9911.5  2119.7    9919  2120.3  9920.7  2120.3
    9933  2120.1    9941  2120.3  9941.2  2120.3  9941.5  2120.3  9942.4  2120.3
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9951.3	2120.2	9953.5	2120.2	9961	2120.4	9967.2	2120.2	9981.7	2119.8
9988.8	2119.4	9996.3	2118.7	10000	2118.4	10005	2118.8	10011.3	2119.3
10018.3	2118.9	10022.8	2118.5	10026.9	2118.7	10029.6	2118.8	10034	2118.5
10040.8	2118.3	10047.5	2118.6	10048	2118.6	10055.1	2119.2	10057.4	2119.3
10064.7	2119.4	10069	2119.6	10079.2	2119.6	10084.4	2119.9	10088.7	2120.2
10103.4	2121.3	10117.2	2122.3	10118.8	2122.3	10128.5	2121.9	10140.3	2121.5
10146.9	2121.5	10152.5	2121	10167	2120.9	10167.3	2120.9	10167.5	2120.8
10167.6	2120.8	10168	2120.8	10188.1	2119.6	10194.4	2119.4	10195.2	2119.4
10195.6	2119.5	10232.8	2122	10234.9	2122.2	10239.4	2122.3	10247.6	2122.4
10262.1	2122.5	10264.5	2122.6						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9691.7	.07	9988.8	.045	10011.3	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.8	10011.3	500	500	500	.1	.3

Left Levee Station= 9845.9 Elevation= 2121.5
Right Levee Station= 10117.2 Elevation= 2122.3

CROSS SECTION RIVER: W10.0000
REACH: R0200 RS: 4.545

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9663.3	2108	9680.6	2107.8	9689.3	2107.6	9705.3	2106.8	9706	2106.8
9736.5	2108.6	9736.9	2108.6	9738.2	2108.6	9746.7	2108.3	9769.6	2107.6
9776.2	2106.9	9783.1	2106.3	9785.9	2106.7	9791.7	2107.3	9801	2107.7
9807.9	2107.8	9838.2	2107.3	9841.9	2107.2	9844.1	2107.3	9860.7	2107.5
9866	2107.6	9885.1	2107.2	9885.8	2107.1	9887.4	2107.2	9904.1	2107.8
9908.7	2107.7	9916.9	2107.9	9936.5	2107.4	9956.6	2107.5	9973.8	2107.1
9982.8	2106.8	9991.5	2106.6	9995.6	2106.4	10000.1	2106.4	10015.9	2106.8
10016.1	2106.8	10016.8	2106.8	10025.3	2107.2	10029.9	2107.4	10053.8	2108
10062.9	2108.2	10063.4	2108.2	10068.4	2108.4	10069.5	2108.5	10073.9	2108.8
10095.3	2109.9	10098.8	2109.7	10103.4	2109.4	10145.7	2106.8	10150.1	2106.4
10155.3	2106	10156.8	2106.1	10163.5	2106.3	10169	2106.5	10170.7	2106.5
10172.7	2106.4	10179.4	2105.8	10197.9	2105.4	10206.7	2105.6	10209.2	2104.7
10209.4	2104.7	10210.8	2105	10216	2106	10217	2106.2	10217.4	2106.2
10249.3	2106	10251	2106.1	10254	2106.1	10272.5	2105.6	10275.3	2105.6

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9663.3	.07	9982.8	.045	10015.9	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.8	10015.9	456	456	456	.1	.3

Left Levee Station= 9738.2 Elevation= 2108.6
Right Levee Station= 10095.3 Elevation= 2109.9

CROSS SECTION RIVER: W10.0000
REACH: R0200 RS: 4.459

INPUT
Description:
Station Elevation Data num= 124

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9704.5	2098.4	9705.9	2098.4	9713.8	2097.9	9716.6	2097.7	9724.6	2097.5
9728.7	2097.4	9731.5	2097.1	9737.1	2096.8	9738.6	2096.7	9743.7	2096.2
9745.2	2096.2	9750.1	2096	9751.8	2095.9	9755.8	2095.5	9757.1	2095.2
9760.3	2095.7	9768.7	2097.2	9773.4	2097.3	9775.3	2097.3	9779.4	2097
9781.5	2096.8	9782.8	2096.9	9785.4	2096.9	9791.9	2096	9798.3	2095.5

9800.7	2096	9804.7	2097.1	9808.9	2097.3	9816.3	2097.4	9850.7	2097.4
9883.1	2097.5	9889.5	2097.5	9893	2097.5	9951.4	2096	9952.9	2095.9
9956.5	2095.5	9964.7	2094.5	9970.6	2095.1	9980.4	2096	9990.1	2096.4
9990.2	2096.4	9996.4	2095.3	10000	2095	10006.1	2095.6	10009	2095.9
10011.3	2095.3	10018.5	2095.2	10021.1	2095.2	10029.9	2096.2	10033.1	2096.3
10040.4	2096.4	10047.8	2096.4	10054.3	2096.6	10054.6	2096.6	10055.2	2096.6
10065.7	2096.1	10072	2095.7	10074	2095.6	10083.6	2095.3	10091.1	2095.4
10092	2095.4	10100.5	2095.8	10106.1	2095.8	10114	2095.8	10129.4	2095.7
10141.6	2095.6	10156.3	2095.3	10157.4	2095.2	10189.7	2094.9	10190.7	2094.9
10191.2	2094.9	10214.7	2095.5	10233.6	2096	10235.6	2096	10237	2095.9
10243.3	2095.6	10268.9	2094.1	10277.1	2094.4	10287.2	2094.7	10299.2	2095.1
10314.2	2094.2	10315.8	2094.1	10336.3	2095.4	10338	2095.5	10341.8	2095.6
10352.9	2095.7	10362.7	2095.8	10389	2094.5	10403	2093.8	10404.6	2094.1
10410.9	2095.4	10416.8	2095.4	10424.5	2095.6	10459.4	2096	10462.7	2096
10481	2095.7	10487.3	2095.4	10493.5	2095.1	10497.7	2094.2	10501.9	2093.1
10505.1	2093.7	10508	2094.4	10510.2	2094.6	10514.5	2095	10536.4	2097.2
10540.1	2097.6	10542.9	2097.5	10570.8	2096.1	10580.4	2095.6	10581.2	2095.7
10588.5	2095.7	10596.6	2096.1	10616.6	2097	10626	2096.6	10632.4	2096.5
10641.6	2096.5	10656.2	2096.7	10658.3	2096.4	10661.1	2096	10665.3	2096.8
10666.8	2097	10680.9	2097.2	10691.6	2097.3	10695.9	2097.1		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9704.5	.07	9990.2	.045	10009	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9990.2	10009	280	277	230	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10233.6	10695.9	2098

Left Levee Station= 9893 Elevation= 2097.5
Right Levee Station= 10540.1 Elevation= 2097.6

CROSS SECTION RIVER: W10.0000
REACH: R0200 RS: 4.406

INPUT
Description:
Station Elevation Data num= 130

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9547.5	2090.7	9571.5	2090	9592.2	2089.7	9605.4	2089.1	9612.7	2088.9
9637.3	2089.2	9643.4	2089.4	9646.7	2089.4	9652.5	2089.5	9684	2088
9698.4	2087.4	9701.5	2087.6	9705.1	2087.9	9722.8	2088.8	9728.9	2089.2
9737	2089.3	9744.7	2089.2	9756.4	2089.1	9781.1	2088.8	9792.2	2088.6
9825.1	2088.4	9845.8	2088.1	9852	2087.5	9854.3	2087.3	9855.5	2087.5
9860.4	2088.4	9873.7	2088.3	9880.1	2088.4	9908.6	2088.8	9919.6	2088.9
9924.8	2088.4	9930.5	2087.8	9935.8	2088.4	9937.3	2088.5	9939.2	2088.6
9960.9	2088.6	9968.4	2088.7	9983	2089	9986.7	2088.5	10000	2087.3
10006.4	2088.1	10014.1	2088.8	10015.4	2088.7	10052.2	2088.9	10076.4	2089.2
10091.7	2089.2	10094.9	2089.1	10101.3	2088.9	10110.7	2088.9	10115.9	2088.7
10119.2	2088.4	10124.5	2087.9	10126.8	2087.7	10127.4	2087.6	10127.7	2087.7
10136.5	2088.2	10139.1	2088.1	10150.6	2087.6	10151.2	2087.7	10161.1	2089
10164.7	2089	10166	2089.1	10185.2	2089.7	10205.2	2090.3	10215.6	2090.7
10217	2090.8	10225.2	2091.5	10227.1	2091.6	10234	2091.3	10235.7	2091.2
10244.6	2090.6	10267.4	2089.9	10271.3	2089.8	10275.2	2089.4	10279.3	2089.2
10283.9	2088.8	10291.4	2088.3	10292.6	2088.1	10299.3	2087.6	10300.3	2087.7
10309.2	2087.9	10310	2087.9	10310.7	2087.9	10325.6	2087.6	10329.7	2087.5
10333.2	2087	10338.6	2086.1	10348.6	2087.6	10353.2	2088	10363.3	2088.1
10366.9	2088.2	10391.4	2088.4	10402.9	2088.5	10407.4	2088.3	10418.8	2088.2
10422.3	2088.4	10429.6	2088.2	10433.4	2087.9	10435.6	2088	10437.9	2088.2
10452.6	2088	10468.8	2087.7	10471.6	2087	10473.9	2086.6	10479.8	2087.2
10480.6	2087.3	10487.5	2087.7	10489.7	2087.8	10489.8	2087.8	10489.9	2087.8
10499.3	2089	10509.6	2089.2	10509.7	2089.2	10520.9	2090.1	10522.1	2090.6

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 10524.8  2090.5 10538.6  2091.2 10544.5  2091.3 10555.2  2090.7 10561.1  2090.3
 10568.4  2089.6 10570.2  2089.4 10576.4  2088.6 10585.2  2087.6 10598.7    2089
 10602.4  2089.3 10603.9  2089.5 10604.9  2089.5 10610.3  2089.9 10623.8  2090.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9547.5     .07  9986.7    .045 10006.4     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9986.7 10006.4              295     330     330             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 10227.1 10623.8  2091.2
Left Levee      Station=    9737      Elevation=  2089.3
Right Levee     Station= 10544.5      Elevation=  2091.3

CROSS SECTION          RIVER: W10.0000
REACH: R0200              RS: 4.344

INPUT
Description:
Station Elevation Data    num=     119
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9498.1  2081.5  9521.7  2080.6  9522.1  2080.6  9522.4  2080.6    9523  2080.6
    9539  2079.4  9545.8  2079.8  9554.6  2080.3  9563.1  2079.7  9566.9  2079.4
  9575.3  2080.2    9580  2080.6  9586.7  2080.8  9599.6  2081.2  9601.2  2081.2
  9609.9  2080.8  9618.1  2080.5  9625.4  2080.2  9629.2  2080.1  9645.1  2079.5
    9649  2079.6  9659.7  2079.7  9665.9  2079.8  9696.7  2080.8  9700.6  2080.8
  9701.9  2080.7  9704.5  2080.7  9713.2  2080.5    9726  2080.1  9729.2  2080.1
  9735.6  2078.7  9737.4  2078.3  9740.3  2079.2  9742.6  2080.1  9743.3  2080.1
  9745.1  2080.1  9751.9  2080.1  9797.8  2080.5  9800.5  2080.6  9808.4    2081
  9817.3  2079.7  9817.5  2079.7  9817.6  2079.7    9833  2080.7  9838.7  2080.5
  9845.7  2080.3  9847.8  2080.4  9853.6  2080.9  9869.6  2080.9    9870  2080.9
  9870.1  2080.9  9878.1  2080.7  9883.1  2080.3  9885.7  2080.1  9890.3    2080
  9893.8  2079.7  9896.4  2079.5  9899.3  2079.3  9903.5  2079.6  9905.9  2079.9
  9908.2  2079.9  9929.2  2079.7  9966.2  2079.4    9970  2079.2  9976.6  2079.1
  9979.1  2079.2  9983.8    2079  9986.5  2078.9  9995.4  2078.2  9998.9  2077.9
   10000  2077.9 10002.2    2078   10005  2078.3   10008 2078.622 10019.9  2079.9
 10044.6  2079.6 10047.4  2079.6   10055  2078.8 10058.9  2078.5 10059.3  2078.5
 10070.9    2080 10099.3  2081.2 10103.6  2081.4 10108.6  2081.5   10127  2080.7
 10135.9  2080.3 10140.3    2080 10146.7  2079.6 10152.4  2079.9 10156.1  2080.1
 10170.5  2079.8   10181  2079.6 10183.9  2079.5 10188.9  2079.4 10196.2  2079.4
 10202.6  2079.4 10219.4  2079.4 10225.5  2079.2 10229.5  2079.3 10233.1  2079.6
   10241  2080.4 10242.1  2080.5 10248.7  2080.9 10259.9  2081.5   10262  2081.6
 10262.9  2081.6 10302.7  2080.3 10312.6  2079.9 10316.7  2079.8 10321.2  2079.8
 10329.3  2080.7 10330.9  2080.8 10336.4  2081.2 10346.6  2081.9 10350.5  2082.1
   10354  2082.3 10355.3  2082.4 10381.7  2083.5 10382.9  2083.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9498.1     .07  9979.1    .045   10008     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9979.1   10008              408     408     410             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 10108.6 10382.9  2081.5
Left Levee      Station=  9601.2      Elevation=  2081.2
Right Levee     Station=   10262      Elevation=  2081.6

CROSS SECTION          RIVER: W10.0000
REACH: R0200              RS: 4.266
```

```
INPUT
Description:
Station Elevation Data    num=      97
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9628.7  2069.4  9643.3  2068.6  9655.5    2068  9664.6  2067.9  9667.5  2067.8
    9668  2067.7    9669  2067.7  9674.7  2067.7  9678.6  2067.7  9682.3  2067.7
  9690.7  2068.5  9698.7  2069.2  9706.5  2069.5  9711.9  2069.4  9723.7  2069.3
  9736.3  2069.1  9740.4    2069    9746  2068.3  9753.9  2067.3  9754.2  2067.4
  9754.7  2067.4  9760.9  2068.2  9768.6    2069  9773.2  2069.1  9783.1  2069.3
    9790  2069.3  9804.5  2068.4  9813.3  2067.7  9816.7  2068.3  9821.5  2068.7
  9835.6  2068.6  9840.5  2068.5  9845.2  2068.1  9852.2  2067.4  9860.6  2067.9
  9862.6  2068.1  9863.3  2068.1  9869.5    2068  9878.1  2067.9  9882.9  2067.9
  9886.7    2068    9898  2068.1  9904.6  2066.8  9906.5  2066.4  9911.4  2066.7
  9922.4  2067.1  9931.5    2068  9936.4  2068.1  9941.3  2068.4  9953.5  2068.5
  9970.6  2068.6  9980.9  2068.6  9986.6  2068.6  9992.5  2068.2   10000  2067.6
 10024.6  2068.4 10028.1  2068.5   10034  2068.3 10035.6  2068.3 10042.6  2068.6
 10047.6  2068.8 10052.3  2068.7 10073.2    2068   10079  2067.9 10080.5  2067.9
   10087  2067.7 10104.9  2067.4 10106.3  2067.4 10130.2  2068.3 10131.5  2068.3
 10133.1  2068.3 10149.6  2068.1   10150  2068.1 10150.6  2068.1 10157.9  2067.7
 10166.5  2067.9   10175    2068 10178.3  2068.1 10179.9  2068.3 10182.1  2068.4
 10183.8  2068.5 10192.7  2068.8 10220.6    2069 10226.3  2068.8 10229.2  2068.8
 10233.7  2068.5   10239  2068.3 10247.2    2069 10248.4  2069.1 10256.4  2069.1
 10259.7  2069.2 10268.5  2069.6 10274.3  2070.2 10278.3  2070.4 10284.1  2070.7
 10295.4  2071.6   10296  2071.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9628.7     .07  9992.5    .045 10024.6     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9992.5 10024.6              370     366     359             .1       .3
Left Levee      Station=  9706.5      Elevation=  2069.5
Right Levee     Station= 10220.6      Elevation=    2069

CROSS SECTION          RIVER: W10.0000
REACH: R0200              RS: 4.197

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9750.4  2060.6    9752  2060.5  9768.5  2060.2  9786.4  2059.7  9789.1  2059.7
  9794.7  2059.3  9806.6  2059.3  9814.7    2059  9823.2  2058.8  9827.5  2058.2
  9830.8  2057.8  9850.6  2059.6  9852.8  2059.8  9852.9  2059.8  9853.3  2059.7
  9854.1  2059.7  9883.9  2058.4  9893.2  2058.2  9897.9  2058.6  9907.6  2059.2
    9923    2060  9930.5  2060.5  9942.5  2059.8  9951.4  2059.4  9976.9  2057.9
  9981.4  2057.6  9983.2  2057.5  9984.8  2057.4  9991.8    2057   10000  2056.7
 10014.5  2057.5 10015.3  2057.5 10026.2  2057.6 10053.6    2058   10055  2058.1
 10090.9  2057.4 10091.6  2057.3 10101.8  2056.6 10103.7  2056.8 10118.4  2057.8
 10139.3  2057.3 10150.9    2057 10157.6  2057.2   10162  2057.4 10174.2  2056.8
 10176.3  2056.7 10177.4  2056.9 10182.3  2057.9 10200.5  2059.2 10202.6  2059.4
   10204    2059   10210  2057.4 10216.1  2057.5 10223.3  2057.5 10260.1  2057.3
 10265.7  2057.2   10268  2057.1   10269  2057.1 10271.6    2057   10277  2057.7
 10279.2    2058 10280.7  2058.2 10281.1  2058.3 10281.5  2058.3 10292.8  2059.2
 10298.3  2060.2 10305.3  2061.7 10305.9  2061.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9750.4     .07  9984.8    .045 10014.5     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9984.8 10014.5              315     310     300             .1       .3
Left Levee      Station=  9930.5      Elevation=  2060.5
```

Right Levee Station= 10202.6 Elevation= 2059.4

CROSS SECTION RIVER: W10.0000
REACH: R0200 RS: 4.138

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9791.7	2051.5	9796	2051.3	9796.3	2051.3	9813	2050.3	9823.1	2050
9828.8	2049.9	9837.1	2049.7	9837.7	2049.7	9838.4	2049.6	9844.8	2048.6
9847.8	2049	9848.3	2049.1	9850.3	2049.3	9853.2	2049.5	9854.7	2049.5
9858.9	2049.3	9861	2049.5	9866	2049.7	9875	2049.7	9881.1	2049.7
9883.4	2049.8	9898.3	2050.5	9903.2	2050.8	9926.7	2050.6	9928.9	2050.5
9929.4	2050.5	9931.5	2050.6	9940.7	2050.8	9950.9	2050.8	9956.5	2050.1
9961.3	2049.6	9967.8	2050.2	9970.5	2050.5	9973.3	2050.6	9977.4	2050.7
9980.4	2050.5	10000	2049.6	10004.7	2050.4	10007.9	2050.6	10010	2050.5
10021.4	2049.5	10026.4	2050.7	10027.3	2051	10045.6	2050.1	10048.5	2050
10049.2	2050	10053	2050	10062.8	2050	10070.6	2050.2	10076.6	2050
10079.9	2049.9	10088	2049.5	10096.4	2049.3	10099.1	2049.2	10106.9	2049
10110.9	2049.1	10124.7	2049.6	10147.9	2049.7	10160.6	2049.7	10166.9	2049.7
10167.7	2049.8	10168.9	2049.8	10182	2050.1	10186.6	2050.1	10189.8	2050.2
10197.1	2050.3	10198.4	2050.4	10199.9	2050.3	10202.7	2050.6	10227.5	2052.6
10230.6	2052.8	10235.4	2053	10236.4	2053	10237.8	2053.1		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9791.7	.07	9977.4	.045	10007.9	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.4	10007.9	360	405	405	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9791.7	9950.9	2051.5

Left Levee Station= 9950.9 Elevation= 2050.8

CROSS SECTION RIVER: W10.0000
REACH: R0200 RS: 4.062

INPUT
Description:
Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9561.6	2039.7	9591.9	2039.2	9602.3	2039	9624.1	2038.5	9627.2	2038.5
9628.4	2038.5	9629.2	2038.5	9665.2	2040.5	9670.3	2040.5	9676.7	2040.6
9680.9	2040.6	9682.9	2040.6	9691.5	2040.5	9708.4	2040.1	9710	2039.8
9713.7	2039.1	9719.6	2038.7	9722	2038.4	9723.4	2038.3	9729.3	2038
9733.7	2038.1	9734.7	2038.2	9743	2037.7	9744	2037.7	9744.2	2037.7
9755.5	2038.6	9760.3	2039.1	9764	2039.5	9774.3	2040.8	9777.9	2040.8
9788.6	2040.9	9806	2040.8	9818.3	2040.6	9819.8	2040.6	9824.9	2040.1
9828.3	2039.9	9834.4	2039.1	9836.1	2039.2	9848	2040.2	9854.7	2039.7
9858.7	2039.4	9866.3	2040.8	9866.5	2040.8	9866.6	2040.8	9867.1	2040.8
9897.9	2040.3	9903.5	2039.6	9905	2039.4	9909.7	2039.6	9915.5	2039.9
9918.2	2039.9	9923.7	2039.9	9931.4	2039.8	9966.8	2039.6	9976.2	2039.6
9980.4	2039.3	9983.8	2038.8	9987.7	2038.3	9989.7	2038.2	9991.7	2038.1
9997.2	2038	9999.9	2038	10000	2038	10002.1	2038.4	10006.6	2039.2
10020.1	2040.7	10026.5	2041.4	10030.7	2041.2	10054.3	2040	10078.8	2038.8
10081.4	2038.7	10085.9	2038.3	10086	2038.3	10086.1	2038.3	10090.6	2038.9
10091.8	2039.1	10106.1	2039.9	10108.5	2040	10117.4	2040.1		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9561.6	.07	9980.4	.045	10006.6	.07

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Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9980.4 10006.6              220     234     237             .1       .3
Left Levee      Station=  9682.9      Elevation=  2040.6
Right Levee     Station= 10026.5      Elevation=  2041.4

CROSS SECTION          RIVER: W10.0000
REACH: R0200              RS: 4.017

INPUT
Description: XS upstream of split S10.0555
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9803  2034.4    9823    2034    9855  2032.7    9885  2032.7    9907    2033
    9954  2033.4    9978 2033.243   9994 2033.139   10000  2033.1   10007 2033.291
   10033    2034   10052  2034.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9803     .07    9978    .045   10007     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9978   10007                 0       0       0             .1       .3

CROSS SECTION          RIVER: W10.0000
REACH: R0300              RS: 3.977

INPUT
Description: Q = 555 cfs right split flow at S10.0555
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9917  2029.2    9940  2028.3    9957  2028.7    9995    2028  9999.9  2026.6
   10000  2026.6 10000.5  2026.6 10012.7  2026.7 10020.8  2026.8 10023.1  2026.8
 10024.9  2026.9 10025.5  2026.8 10043.4  2027.4 10047.4  2027.6 10050.2  2027.7
 10067.2  2028.5 10079.2  2028.9 10087.5  2028.6 10096.4  2028.4 10102.2  2028.3
 10110.9  2028.1 10114.7  2028.1 10121.7  2028.5   10129    2029 10133.4  2029.2
 10144.6  2030.3 10146.7  2030.4   10153  2030.9 10160.5  2031.2 10162.6  2031.3
 10172.3  2031.6 10177.4  2031.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9917     .07    9995    .045 10020.8     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995 10020.8                467     470     476             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 10079.2 10177.4    2030
Right Levee     Station= 10079.2      Elevation=  2028.9

CROSS SECTION          RIVER: W10.0000
REACH: R0300              RS: 3.888

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9904.9    2017  9905.2    2017  9905.3    2017  9911.9  2016.9  9928.4  2016.5
  9932.7  2016.5  9945.7  2015.8  9948.6  2015.7    9958    2015  9960.9  2014.7
  9964.4  2014.5  9965.4  2014.5  9968.9  2014.9  9969.8  2014.9  9973.6  2014.6
  9975.2  2014.3  9976.9  2014.5  9984.1  2015.2  9996.8  2014.3   10000  2014.1
 10007.5  2014.9 10009.4  2014.9 10012.5  2014.8 10017.4  2014.5 10019.8  2014.4
 10027.8    2015 10032.5  2015.4   10045    2016   10061  2016.6 10064.6  2016.5
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```
 10067.6  2016.4 10083.3  2015.7 10083.7  2015.6 10092.6  2014.7 10096.3  2015.5
 10097.5  2015.8 10100.3  2015.8 10103.7  2015.9 10107.2    2016 10108.8    2016
 10118.8  2016.3 10127.8  2016.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9904.9     .07  9984.1    .045 10009.4     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9984.1 10009.4              245     241     235             .1       .3
Right Levee     Station=   10061      Elevation=  2016.6

CROSS SECTION          RIVER: W10.0000
REACH: R0300              RS: 3.842

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9827.5  2010.4  9867.6  2010.3  9894.6  2010.2  9895.9  2010.1    9909  2009.3
  9914.5  2009.3  9921.5  2009.6  9927.5  2009.8  9930.5  2009.9  9947.3  2009.8
  9954.2  2009.5  9956.6  2009.1  9960.8  2008.4  9963.5    2009  9965.2  2009.4
  9975.6  2009.2  9985.6  2009.2  9997.9  2007.6   10000  2007.3   10010  2009.3
 10011.1  2009.4 10011.3  2009.4 10012.1  2009.4 10031.3  2009.4 10033.3  2009.4
 10034.3  2009.4 10034.8  2009.4 10036.4  2009.4 10049.6  2009.6 10084.1  2010.1
 10085.8  2009.9 10088.1  2009.7   10089  2009.8 10094.5  2010.4 10097.2  2010.4
 10109.6  2010.4 10117.2  2010.3 10126.8  2010.3 10126.9  2010.3   10127  2010.3
 10142.8  2009.2   10148    2010 10148.3    2010 10149.4    2010 10173.1    2010
 10177.7    2010 10180.3    2010 10181.5    2010 10182.4    2010 10186.9  2010.2
 10192.3  2010.3   10218  2011.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9827.5     .07  9985.6    .045 10011.1     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9985.6 10011.1              195     195     195             .1       .3
Right Levee     Station= 10094.5      Elevation=  2010.4

CROSS SECTION          RIVER: W10.0000
REACH: R0300              RS: 3.805

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9907.5  2005.4  9917.5  2005.5  9951.4  2005.7  9979.4  2005.1  9985.9  2004.1
  9990.5  2003.5  9996.3  2003.2   10000  2002.9 10003.4  2003.4   100082004.175
 10012.9    2005 10021.3  2004.8 10034.7  2004.4 10037.6  2003.9 10041.5  2003.1
 10046.1  2003.4 10046.8  2003.6   10049  2003.9 10050.4  2004.1   10053  2004.7
 10057.1  2005.2 10061.2  2005.3   10087    2005 10094.2  2004.9 10094.6  2004.8
 10098.9  2003.8 10103.6  2004.2 10105.9  2004.6 10121.4  2005.3 10127.8  2004.1
 10131.6  2004.9   10133  2005.3 10148.1  2006.3 10153.9  2006.7 10154.1  2006.7
 10167.4  2005.6 10177.2  2005.1 10181.6    2005 10191.8  2005.6 10195.7  2005.7
 10203.7  2005.7 10206.7  2005.8 10207.2  2005.8 10224.4  2005.3 10225.9  2005.3
 10226.4  2005.2 10230.6  2005.3   10236  2005.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9907.5     .07  9985.9    .045   10008     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9985.9   10008              468     468     468             .1       .3
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Left Levee      Station=  9951.4      Elevation=  2005.7
Right Levee     Station= 10153.9      Elevation=  2006.7

CROSS SECTION          RIVER: W10.0000
REACH: R0300              RS: 3.717

INPUT
Description:
Station Elevation Data    num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9860.8  1993.6  9867.9  1993.4  9876.1  1993.2  9890.1  1992.9    9911  1992.9
  9919.7  1992.9  9924.3  1992.6  9931.3  1992.3  9935.4  1992.1  9946.4  1991.5
  9959.5  1991.9  9967.8  1992.1  9969.5  1992.1  9976.8  1992.2  9980.2  1992.3
    9992  1992.7  9992.4  1992.6  9997.6  1991.4   10000    1991 10020.8    1991
 10031.8    1991 10035.9  1991.6 10038.1    1992 10051.7  1992.2 10067.8  1992.5
 10075.8  1991.9 10081.4  1991.2 10083.3  1991.3 10084.8  1991.4 10089.8  1991.7
 10094.1  1991.9 10097.6  1992.1 10099.6  1992.2 10119.7  1993.1   10122  1993.4
 10125.8  1993.3 10130.6  1993.3 10141.6  1993.2 10147.9  1993.4 10155.3  1993.5
 10163.8  1993.7   10187  1991.8 10188.3  1991.7 10189.9  1991.8 10195.5  1992.2
 10198.8    1992   10200    1992 10204.5  1991.8 10210.9  1991.6 10211.9  1991.5
 10212.6  1991.6 10213.6  1991.8 10218.8    1993 10222.4    1993 10230.1  1992.8
 10242.4  1993.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9860.8     .07  9997.6    .045 10035.9     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9997.6 10035.9              413     413     413              .1       .3
Right Levee     Station=   10122      Elevation=  1993.4

CROSS SECTION          RIVER: W10.0000
REACH: R0300              RS: 3.638

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9930.9  1981.8  9936.8  1981.7  9940.6  1981.6  9961.7  1981.3  9962.9  1981.3
  9964.7  1981.3  9989.4  1981.1  9989.9  1981.1    9992 1980.832 10000.1  1979.8
 10003.8  1979.9 10012.4  1979.9 10024.8  1979.8 10026.9    1980 10031.6  1980.5
   10037  1981.3 10051.7  1981.3 10055.6  1981.3 10070.4  1981.2 10075.7  1981.1
 10080.6  1980.1 10082.1  1979.8 10095.5  1979.8 10102.2  1979.8 10115.4  1980.1
 10118.2  1980.2 10118.4  1980.2 10119.5    1980 10125.3  1979.1 10125.8  1979.3
 10128.8    1980   10133  1980.4 10143.1  1981.2 10159.9  1981.4 10174.1  1981.7
 10179.9  1981.7 10180.6  1981.7 10198.5  1982.3 10212.5  1982.7 10227.1    1983
 10256.1  1983.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9930.9     .07    9992    .045 10031.6     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9992 10031.6              308     308     308              .1       .3

CROSS SECTION          RIVER: W10.0000
REACH: R0300              RS: 3.580

INPUT
Description:
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9825  1974.3    9846    1974    9867    1972    9893  1972.8    9907  1972.6
```

```
    9930  1972.8    9948  1972.6    9960  1972.6    9980    1972    9990 1971.75
   10000  1971.5   10008    1972   100101972.111   10044    1974

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9825     .07    9980    .045   10010     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9980   10010                0       0       0             .1       .3

CROSS SECTION          RIVER: W10.0000
REACH: R0400              RS: 3.539

INPUT
Description: Q = 913 cfs from C538 HEC-1 FCD 93-07
Station Elevation Data    num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9704    1967    9756  1967.4    9769  1967.3    9779  1966.8    9789  1967.4
    9827    1967    9837    1966    9847  1965.7    9852    1966    9870  1966.7
    9889    1966    9902    1965    9912    1966    9921  1966.3    9964  1966.5
    9984    1966   10000  1965.5   10013    1966   10026  1966.7   10043  1966.7
   10064  1967.8   10092    1967   10115    1967   10134  1966.3   10157  1967.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9704     .07    9984    .045   10013     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9984   10013               249     251     244             .1       .3
Left Levee      Station=    9789      Elevation=  1967.4
Right Levee     Station=   10064      Elevation=  1967.8

CROSS SECTION          RIVER: W10.0000
REACH: R0400              RS: 3.491

INPUT
Description:
Station Elevation Data    num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9653    1960    9704  1959.2    9718    1960    9737    1960    9757  1959.2
    9802    1960    9840    1960    9940    1958    9964    1959    9975  1958.8
    9980  1958.7   10000  1958.7   100081959.081   10021  1959.7   10040  1958.2
   10057  1959.6   10074  1958.4   10099  1959.4   10116  1959.2   10140  1960.4
   10188    1958   10209  1957.3   10222    1958   10251    1960   10312    1962

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9653     .07    9964    .045   10008     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9964   10008               119     119     119             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10099   10312  1960.3
Left Levee      Station=    9737      Elevation=    1960
Right Levee     Station=   10140      Elevation=  1960.4

CROSS SECTION          RIVER: W10.0000
REACH: R0400              RS: 3.468

INPUT
Description: XS upstream of split S10.0600
Station Elevation Data    num=      39
```

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9595	1957.2	9614	1956	9660	1957.2	9698	1956.9	9743	1957.3
9769	1956.7	9794	1957	9816	1956.1	9838	1956.4	9856	1956
9868	1956.3	9930	1956.4	9935	1956	9941	1955.7	9945	1956
9955	1956.6	9980	1956.4	9992	1956	9995	1955.775	10000	1955.4
10007	1956	10036	1956.9	10060	1956	10066	1955.6	10073	1955.9
10083	1956	10091	1956.5	10125	1956.5	10136	1956	10143	1955
10156	1956	10171	1957	10188	1956.7	10214	1957.2	10236	1956
10248	1955.1	10260	1956	10296	1958	10307	1958.7		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9595	.07	9980	.045	10007	.07

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

9980	10007	0	0	0	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
9595	9660	1957.3	10171	10307	1958

Left Levee Station= 9743 Elevation= 1957.3

CROSS SECTION RIVER: W10.0000
REACH: R0500 RS: 3.448

INPUT
Description: Q = 343 cfs from right split at S10.0600
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9557	1954.5	9593	1954	9610	1953	9624	1953.8	9642	1953.5
9650	1954	9702	1954.7	9741	1954	9755	1953.7	9765	1954
9779	1953.3	9806	1954	9821	1954.2	9835	1954	9920	1952.5
9954	1953.3	9976	1953.5	9994	1953.35	10000	1953.3	10006	1953.51
10020	1954								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9557	.07	9976	.045	10006	.07

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

9976	10006	470	470	470	.1	.3

Left Levee Station= 9702 Elevation= 1954.7

CROSS SECTION RIVER: W10.0000
REACH: R0500 RS: 3.359

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9717	1943.4	9747	1943	9750.6	1942.9	9755	1942.8	9760.3	1942.5
9769.7	1942.1	9771	1942.1	9786.7	1940.8	9788.2	1940.7	9790	1940.8
9799.2	1941	9823.2	1941.3	9827.1	1941.2	9837.8	1940.9	9840.5	1940.7
9845.3	1939.9	9849	1939.2	9851.1	1940.1	9854.1	1941.2	9856.4	1941.4
9864	1942	9879.4	1941.2	9891.4	1940.6	9893.2	1940.6	9900.2	1940.5
9910.6	1940.3	9914.7	1940.4	9926.9	1940.5	9932	1940.4	9933.6	1940.5
9935.9	1940.7	9943.3	1941.2	9949.1	1941.5	9959.4	1941.4	9971.8	1941.2
9973.8	1941.2	9978	1941.1	9991.6	1940.8	9996	1940.6	10000	1940.5
10005.7	1941.3	10006.3	1941.4	10006.7	1941.4	10017.7	1941.5	10021.4	1941.5
10044.5	1941.6	10044.7	1941.6	10044.8	1941.6	10053.4	1941.2	10058.2	1941.8
10058.9	1941.8	10061.7	1941.9	10072.6	1942.1	10076	1942.2	10082.8	1942.3
10096.3	1942.3	10098.4	1942.1	10103.6	1941.5	10108.2	1942.3	10111.6	1942.6

Manning's n Values num= 3

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     Sta   n Val     Sta   n Val     Sta   n Val
    9717     .07    9978    .045 10006.7     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9978 10006.7              500     500     500             .1       .3
Left Levee      Station=    9864      Elevation=    1942
Right Levee     Station= 10082.8      Elevation=  1942.3

CROSS SECTION          RIVER: W10.0000
REACH: R0500              RS: 3.264

INPUT
Description:
Station Elevation Data    num=      55
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9750.1  1928.3  9762.8  1927.7  9768.3  1927.5  9774.5  1927.2  9786.6  1926.8
  9789.5  1926.7  9789.7  1926.7  9795.2  1925.8  9798.1  1926.9  9798.7  1927.1
  9803.9    1927  9813.2  1926.9  9815.5    1927  9825.4    1927  9830.2  1927.2
  9839.7  1927.1  9843.4  1927.1    9853    1927  9855.3  1926.6  9856.3  1926.4
  9860.8  1927.3  9861.4  1927.4  9881.1  1927.5  9893.8  1927.7  9896.7  1927.6
  9903.8  1927.8  9918.2  1928.1  9919.4  1928.1  9929.5    1928  9940.8  1927.8
  9943.8  1927.8  9951.2  1927.7  9952.7  1927.6  9954.8  1927.6  9959.5  1927.5
  9972.9  1927.4    9992  1927.2  9994.8  1926.6   10000  1925.8 10007.5  1927.1
 10007.6  1927.1 10007.7  1927.1 10023.2  1927.8 10029.7  1927.4   10043  1926.8
   10048  1925.7 10048.7  1925.5 10049.5  1925.7 10054.2  1926.6   10065  1927.7
 10072.3  1927.9 10084.6  1928.6 10098.5  1928.3 10115.5    1928 10132.7  1927.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9750.1     .07    9992    .045 10007.5     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9992 10007.5              499     499     499             .1       .3
Left Levee      Station=  9919.4      Elevation=  1928.1
Right Levee     Station= 10084.6      Elevation=  1928.6

CROSS SECTION          RIVER: W10.0000
REACH: R0500              RS: 3.170

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9818.3  1915.5  9820.4  1915.4    9824  1915.4  9832.9  1915.3  9835.4  1915.3
  9842.6  1915.1  9851.7    1915  9860.4  1914.8  9886.7  1914.3  9886.8  1914.3
  9903.6  1914.7  9905.3  1914.7  9911.1  1914.5  9948.2  1914.1  9954.9  1914.3
  9955.3  1914.3  9970.4  1912.4  9971.4  1912.2  9978.3  1913.1  9980.2  1913.2
  9983.3  1913.4  9989.2  1913.1    9992  1913.1    9992    1913  9993.7    1913
  9997.4  1912.4   10000    1912 10004.7  1912.6 10012.4  1913.8 10013.7  1913.9
 10018.7  1913.8 10023.8  1913.7 10024.8  1913.7 10026.8  1913.3 10033.7  1912.1
 10035.1  1912.4 10041.7  1913.7   10055  1914.6 10059.9  1914.9 10067.2  1914.6
 10085.8  1914.1 10101.7  1913.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9818.3     .07  9993.7    .045 10004.7     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9993.7 10004.7              506     506     506             .1       .3
Left Levee      Station=  9905.3      Elevation=  1914.7
Right Levee     Station= 10059.9      Elevation=  1914.9

CROSS SECTION          RIVER: W10.0000
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REACH: R0500                RS: 3.074

INPUT
Description:
Station Elevation Data     num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9748  1900.3  9758.7  1899.8    9763  1899.5  9771.1  1899.2  9785.2  1898.5
  9786.5  1898.3  9788.3  1898.1  9795.7  1897.5  9798.7  1897.1  9804.7  1897.2
    9806  1897.1  9808.8  1897.5  9814.6  1898.1  9822.6  1898.9  9839.6  1899.7
  9863.8  1900.6  9864.7  1900.6  9871.4  1900.4  9889.7  1899.6  9894.6  1899.3
  9896.7  1899.7  9902.2  1900.5  9906.7  1900.4  9914.1  1900.2  9936.1  1899.6
  9938.2  1899.4  9940.9  1899.5  9942.9  1898.7  9943.8  1898.6  9945.7  1898.8
    9948  1898.9    9951  1899.1  9962.8  1899.3  9967.8  1899.4  9987.7  1899.6
  9991.4  1899.7  9992.7  1899.4   10000  1897.9 10007.6  1898.7 10012.8  1899.2
 10026.9  1898.6 10036.8  1898.6 10041.9  1898.7 10045.9  1898.9 10057.8  1899.4
 10064.8  1899.1 10077.9  1898.5 10108.5  1899.6 10119.5  1899.9 10124.5  1900.1

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9748     .07  9992.7    .045 10012.8     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9992.7 10012.8                 0       0       0              .1       .3
Left Levee      Station=  9864.7      Elevation=  1900.6

CROSS SECTION          RIVER: W11.0000
REACH: R0100               RS: 5.687

INPUT
Description: Q = 1398 cfs from HEC-1 FCD 93-07
D531L + D532L + D532M
Station Elevation Data     num=     103
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9796  2151.1  9806.9    2151  9825.2    2150    9852    2149  9868.9  2148.5
  9875.7  2148.2  9877.4  2148.3  9884.3  2148.4  9892.1  2148.6  9898.4  2148.3
  9909.3  2147.6  9909.7  2147.6  9909.8  2147.6  9910.4  2147.6  9916.5  2147.9
  9918.4  2147.8    9920  2147.8  9930.1  2147.8  9938.1  2147.8  9946.3  2147.7
  9953.6  2148.3  9958.3  2148.6  9963.2  2148.7  9970.9  2148.7  9987.2  2148.5
  9989.8  2148.5  9993.2  2148.4   10000  2148.1 10001.9  2148.3   10005 2148.57
 10008.8  2148.9 10013.3    2149   10021  2149.1 10024.9  2148.8 10030.6  2148.5
   10033  2148.4 10037.6    2149 10042.9  2149.4   10046  2149.3 10049.1  2149.2
 10060.6  2149.1 10065.2    2149 10066.8    2149 10077.9  2149.2 10078.8  2149.1
   10085  2149.7 10086.2  2149.7 10093.2  2149.4 10096.8  2149.4 10100.1  2149.5
 10114.8  2149.7 10120.1  2149.6 10129.5  2149.3 10137.7  2149.1 10142.2  2148.9
 10148.6  2148.7 10150.7  2148.6 10151.1  2148.7 10158.3  2149.4 10160.3  2149.3
 10186.5  2148.4   10202  2147.3 10202.8  2147.2 10213.7  2148.3 10217.2  2148.6
 10229.8  2148.8 10236.2  2148.8 10240.7  2148.2 10244.6  2147.7 10248.5  2148.2
 10253.6    2149 10269.7  2149.1 10283.3  2149.1 10290.6  2149.3   10302  2149.5
   10325  2149.1 10335.7    2149 10341.9  2148.6 10345.6  2148.6 10354.2  2148.8
 10364.4  2149.2 10371.3  2149.1 10390.9  2149.1   10402  2149.3 10421.6  2149.3
 10430.1  2149.2   10433  2149.3 10444.7  2149.3 10451.1  2149.1 10459.1  2148.7
 10468.2  2149.1 10475.1  2149.3 10490.6    2149 10498.1  2149.2 10508.9  2149.5
 10535.5  2148.8 10542.3  2148.6 10556.2  2148.7 10564.5  2148.7   10580  2148.1
 10580.6  2148.1 10581.7  2148.2   10605    2150

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9796    .065  9989.8     .04   10005    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9989.8   10005                321     321     321              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
```

```
    9796  9943.2    2150

CROSS SECTION          RIVER: W11.0000
REACH: R0100              RS: 5.626

INPUT
Description:
Station Elevation Data    num=     129
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9862.9  2142.1  9864.6  2142.1  9875.8  2141.8  9886.8  2141.7  9910.6    2141
    9918  2141.1  9922.2  2140.9  9925.8  2140.8  9936.5  2140.4  9946.7  2139.9
  9949.5  2139.7  9951.8  2139.8  9971.2  2140.1  9983.7  2140.6  9989.7  2140.1
  9992.7  2139.9  9996.8  2139.2   10000  2138.7 10001.2  2138.9 10006.7  2139.5
 10016.5  2139.4 10021.5  2139.2 10023.5  2139.4 10026.4    2139 10031.1  2138.5
 10032.9  2138.6 10034.8  2138.7 10041.8  2139.6 10042.5  2139.7 10042.9  2139.7
 10048.5  2139.5 10057.5  2139.6 10061.9  2139.5 10064.3  2139.5   10066  2139.5
 10067.3  2139.4 10080.1  2139.4 10082.1  2139.3   10088  2139.3 10116.6  2139.3
 10118.9  2139.3 10120.9    2139 10125.3  2138.2 10125.7  2138.3   10130  2139.3
 10135.4  2139.4 10141.4  2139.6 10143.8  2139.4 10148.5  2138.9   10153  2139.6
 10153.5  2139.7 10168.3    2140 10168.8    2140 10168.9    2140 10174.1  2139.6
 10180.1  2139.7 10199.7  2139.9 10205.5    2140 10207.9  2140.3 10210.9  2140.8
 10211.3  2140.8 10217.1  2140.2 10217.8  2140.1 10218.5  2140.2 10230.9  2140.2
 10252.4  2140.5 10263.3  2140.7 10266.2  2140.5 10267.4  2140.4 10277.8  2140.6
 10281.6  2140.6 10286.9    2141 10290.8  2141.2 10294.6  2140.8 10296.5  2140.7
 10299.4  2140.5 10313.4    2140 10323.2  2140.1 10340.4  2140.4   10343    2140
 10352.9  2138.7 10356.1  2138.5 10357.4  2138.4 10360.6  2138.8   10368  2139.7
 10386.7  2139.4   10392  2139.3 10394.8  2139.3 10401.6  2139.4 10415.7  2139.5
 10426.1  2138.7 10426.9  2138.7 10427.2  2138.7 10434.9  2139.4 10441.4  2139.2
 10442.7  2139.1 10448.9  2139.5 10456.6  2139.9 10460.8  2139.7 10469.4  2139.2
 10471.4  2139.3 10479.6  2139.4 10498.9    2140 10506.8  2140.2 10511.1  2140.2
 10517.6  2140.4 10531.6  2140.8 10551.1    2141 10559.9  2140.8 10584.2  2139.8
   10587  2139.8 10592.9  2139.9   10607  2140.3 10611.6  2140.2 10623.7  2139.7
 10632.9  2139.5 10636.8  2139.5 10640.3  2139.4 10649.8  2139.3 10655.5  2139.3
 10664.4  2139.5 10668.6  2139.5 10670.7  2139.7 10673.6  2140.1 10687.3    2141
 10697.6  2141.6 10706.3  2141.9 10709.1    2142 10711.6  2142.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9862.9    .065  9992.7     .04 10006.7    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9992.7 10006.7              370     395     380             .1       .3
Left Levee      Station=  9983.7      Elevation=  2140.6

CROSS SECTION          RIVER: W11.0000
REACH: R0100              RS: 5.551

INPUT
Description: XS upstream of split S11.0100
Station Elevation Data    num=     132
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9819.1  2131.6  9838.9  2130.9  9844.8  2130.8  9850.9  2130.5  9854.6  2130.2
  9863.4  2129.7  9878.7  2130.4  9897.5  2131.3  9911.8  2130.9  9937.2  2130.3
  9944.2  2130.3  9961.9    2130  9962.9  2129.9  9964.9  2129.8  9976.8  2129.4
  9981.8  2129.3    9989  2128.6  9997.1  2127.5   10000  2127.1 10003.7  2127.5
 10005.4  2127.5 10007.8  2127.6 10008.2  2127.5 10009.3  2127.5 10011.1  2127.4
 10012.3  2127.5 10015.2  2127.9 10021.82127.972 10024.3    2128 10038.8  2127.6
 10043.82127.941 10047.6  2128.2   10049  2128.1 10055.7  2127.7 10056.5  2127.8
 10067.6  2128.8 10073.7  2128.9 10076.8    2129   10078    2129 10082.3    2129
 10114.3    2129   10122    2129 10123.8    2129 10130.8  2129.2 10135.3  2129.2
 10145.5  2129.1 10156.3  2129.1 10159.6  2128.9 10166.5  2128.3 10167.1  2128.3
 10167.9  2128.3 10178.2  2128.6 10179.7  2128.8 10190.3  2128.8 10197.9  2128.4
 10200.4  2128.4 10201.4  2128.4 10203.9  2128.5 10217.2    2129 10225.5    2129
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10243.5	2128.8	10261.9	2128.7	10267.2	2128.8	10276.1	2127.4	10277.7	2127.1
10280.6	2127.6	10283.6	2128.1	10285.1	2128.3	10295.1	2128.5	10297	2128.5
10297.2	2128.6	10297.3	2128.5	10308.3	2127.2	10310.7	2127.3	10319.5	2127.6
10324.1	2128.5	10326.7	2128.8	10331.2	2128.7	10339.9	2128.5	10346.7	2128.6
10349.8	2128.6	10359.6	2128.6	10366	2128.6	10370.2	2128.6	10376.4	2128.6
10379.7	2128.7	10388	2128.7	10396.7	2128.8	10405.5	2128.7	10424.5	2128.1
10425.1	2128	10433.9	2127.8	10437.5	2128.1	10442.1	2128.4	10449.8	2128.8
10452.7	2129	10457	2128.9	10461.9	2128.8	10476.5	2128.4	10499.4	2128
10523.3	2128.8	10537	2129.2	10546.7	2128.9	10547.6	2128.9	10551.5	2129
10552.9	2129.4	10553.6	2129.4	10565.4	2129	10581.9	2127.9	10586.3	2127.6
10590.4	2127.7	10620.1	2128	10623.2	2128.1	10633.2	2128.5	10655.8	2129.1
10662.5	2129.4	10674.1	2128.7	10683	2128.5	10704.3	2127.5	10708.3	2127.6
10714.8	2127.7	10716.2	2127.8	10726.6	2128.1	10734.7	2128.3	10740.2	2128
10755.6	2127	10764.7	2127.8	10770	2128.2	10773.9	2128.5	10783.3	2128.9
10811.8	2130.3	10816.1	2130.4						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9819.1	.065	9997.1	.04	10007.8	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9997.1	10007.8	0	0	0	.1	.3

Left Levee Station= 9897.5 Elevation= 2131.3
Right Levee Station= 10662.5 Elevation= 2129.4

CROSS SECTION RIVER: W11.0000
REACH: R0200 RS: 5.511

INPUT
Description: Q = 791 cfs from C533 HEC-1 FCD 93-07
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9820	2126.6	9857	2126	9918	2124.2	9949	2124	9983	2122
9990	2121.835	10000	2121.6	10010	2121.8	10020	2122	10043	2121.1
10056	2122	10076	2122.8	10098	2121.7	10132	2122.8	10167	2122.6
10199	2123.5	10229	2122	10238	2122.7	10265	2121.8	10282	2123
10308	2122.8	10345	2124	10358	2123.7	10387	2123.4	10417	2124.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9820	.065	9990	.04	10010	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9990	10010	393	392	365	.1	.3

CROSS SECTION RIVER: W11.0000
REACH: R0200 RS: 5.437

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9809.5	2116	9812.3	2116	9815.6	2116.1	9820.3	2116	9831.7	2115.8
9836.5	2116	9854.8	2116.9	9862.2	2117.3	9865.6	2117.5	9866.3	2117.5
9878.7	2116.9	9887	2116.4	9890.8	2116.3	9895.7	2116.1	9899	2116
9917.5	2115.3	9927	2115.4	9935.3	2115.7	9942.3	2115.9	9949.3	2116
9953.4	2115.6	9971.8	2114	9979.8	2113.4	9989.5	2111.3	9990.8	2111
9997.8	2110.8	10000	2110.7	10005	2110.8	10011.5	2111.4	10017.6	2111.4
10026.7	2111.5	10035.8	2111.5	10039.7	2111.8	10045.5	2112.4	10054.3	2112
10057.5	2112	10064.9	2112.1	10068.8	2112.2	10074.5	2111.5	10079.7	2111
10082.6	2111	10088.9	2111.3	10092.8	2112.1	10094.3	2112.4	10104.2	2112.9
10108.3	2113.2	10135.7	2113.6	10149.4	2113.6	10154.1	2113.6	10170.9	2114
10174.2	2113.5	10175.5	2113.3	10176.7	2113.4	10178.4	2113.6	10180.2	2113.6

```
 10184.1  2113.4 10185.8  2113.5 10187.5  2113.6 10190.7  2113.8 10201.1    2114
 10206.8    2114 10208.2  2113.8 10211.5  2113.3   10214  2113.5 10217.7  2113.8
 10222.2  2113.5 10223.1  2113.5 10229.6  2114.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9809.5    .065  9989.5     .04 10011.5    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9989.5 10011.5              471     471     471             .1       .3
Left Levee      Station=  9949.3      Elevation=    2116
Right Levee     Station= 10170.9      Elevation=    2114

CROSS SECTION          RIVER: W11.0000
REACH: R0200              RS: 5.347

INPUT
Description:
Station Elevation Data    num=      35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9830.6  2104.5  9843.8  2103.3  9845.7  2103.2  9851.5  2102.8    9852  2102.8
  9857.4  2102.5  9859.5  2102.6  9863.5  2102.6  9866.7  2102.8  9869.3    2103
  9874.9  2102.6    9883  2101.6  9901.2  2100.9  9906.6  2100.6    9911  2100.4
  9919.1  2100.1  9926.8  2099.5    9933  2099.1  9937.6  2098.9  9939.3  2098.9
    9944  2098.7  9951.6  2098.7  9955.6  2098.8  9962.5  2098.9  9977.5  2099.3
  9980.6  2099.3 9986.37 2099.04  9989.3  2098.9  9992.4    2099   10000  2098.9
10000.68 2099.16 10013.8  2102.2   10015  2102.5 10029.2  2103.4 10031.9  2103.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9830.6    .065 9986.37     .0410000.68    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9986.3710000.68              450     477     477             .1       .3

CROSS SECTION          RIVER: W11.0000
REACH: R0200              RS: 5.257

INPUT
Description:
Station Elevation Data    num=      64
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9848  2093.7  9850.6  2093.7  9861.6  2093.7  9866.6  2092.8  9872.4  2092.5
  9877.8  2092.3  9878.5  2092.2  9879.7  2091.9  9885.2  2091.2  9888.6  2090.8
  9891.9  2090.4  9897.4  2089.8  9898.6  2089.6  9903.2    2089  9903.6    2089
  9903.8    2089  9909.3  2088.8  9911.6  2088.8  9914.8  2088.6  9916.6  2088.6
  9921.6    2088  9924.8  2087.7    9927  2087.4  9930.7    2087  9935.1  2087.2
  9942.8  2088.2  9942.9  2088.2  9962.5    2089  9977.3  2088.6  9978.8  2088.5
  9981.4  2087.7  9986.3  2086.2  9987.3  2086.2  9994.2  2086.3  9994.3  2086.4
   10000  2086.8 10002.6    2087 10005.3  2087.1 10008.3  2087.3 10016.9    2087
 10020.2  2086.9 10021.9  2087.3 10025.2    2088 10029.8  2088.2 10038.9  2088.5
 10044.9  2088.1 10052.4  2087.2 10056.5  2087.1 10058.8    2087 10062.6    2087
 10064.2  2087.1 10066.5  2087.2 10070.9  2087.4 10077.8  2088.4 10078.8  2088.6
   10081  2088.6 10086.2  2088.3 10086.6  2088.5 10097.8    2089 10100.6  2089.1
 10116.7  2089.4 10130.6  2089.3 10145.1  2089.4 10145.6  2089.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9848    .065  9981.4     .04 10008.3    .065
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9981.4 10008.3              508     508     460             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9848    9955    2091
Left Levee      Station=  9962.5      Elevation=    2089
```

Right Levee Station= 10116.7 Elevation= 2089.4

CROSS SECTION RIVER: W11.0000
REACH: R0200 RS: 5.158

INPUT
Description:
Station Elevation Data num= 97

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9709.2	2075.7	9710.5	2075.6	9717.3	2075.2	9726.1	2074.4	9729.3	2074.1
9736.7	2073.3	9737.7	2073.1	9740	2073.5	9741.7	2073.7	9746.5	2073.9
9749.9	2074	9752.1	2074.1	9755.9	2074.3	9758.7	2074.4	9763.9	2074.8
9769.1	2075.1	9775.5	2075.3	9787.6	2075.8	9790.3	2075.9	9795.4	2075.9
9797.2	2075.8	9810.6	2075.7	9818.2	2076.1	9818.8	2076.1	9823.1	2076.5
9834.6	2076.8	9839.5	2076.9	9842	2077	9846.7	2077	9850.7	2077
9855.2	2076.9	9857.9	2076.8	9870.5	2076.2	9881.5	2074.6	9882.8	2074.4
9886.5	2075.3	9886.7	2075.3	9888.7	2075.3	9902.4	2075.2	9905.9	2075.1
9908.7	2075.1	9916.5	2074.6	9918.9	2074.5	9919.7	2074.6	9921	2074.8
9924.3	2075.1	9925.6	2075.4	9926.2	2075.4	9926.6	2075.4	9927.3	2075.4
9930.8	2075.3	9933.7	2075.1	9937.2	2074.9	9944.2	2073.8	9945.1	2073.8
9955.4	2073.8	9956.6	2073.7	9956.8	2073.7	9963.8	2073.8	9964	2073.8
9964.5	2073.8	9974.7	2074.3	9979.4	2074.4	9983.2	2074.5	9989.2	2074.1
9990.6	2074.2	9993.8	2073.8	9995.3	2074	9996.7	2074.1	9998	2073.6
9998.2	2073.6	10000	2073.5	10001.9	2073.6	10003.6	2073.8	10010	2074.6
10012.4	2074.8	10014.6	2075.2	10017.4	2075.1	10018.2	2075.2	10018.4	2075.2
10020	2075.2	10027.7	2075.6	10032	2075.5	10036.1	2075.9	10041.1	2076
10058.9	2076.3	10063.7	2075.8	10068.2	2075.3	10072.9	2075.6	10073.2	2075.7
10074	2075.8	10075.9	2075.9	10087.2	2076.8	10092.9	2077.1	10100	2077.4
10102.6	2077.5	10106.9	2077.6						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9709.2	.065	9983.2	.04	10012.4	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.2	10012.4	175	203	203	.1	.3

Left Levee Station= 9850.7 Elevation= 2077
Right Levee Station= 10058.9 Elevation= 2076.3

CROSS SECTION RIVER: W11.0000
REACH: R0200 RS: 5.122

INPUT
Description:
Station Elevation Data num= 103

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9524.4	2071	9564.7	2070.5	9575.1	2070.7	9580.5	2070.6	9585	2070.7
9586.7	2070.5	9588.1	2070.4	9592.1	2069.9	9595.3	2069.7	9597.3	2069.6
9600.5	2069.4	9605.7	2069.1	9606.7	2069	9607.7	2068.8	9611.8	2069.3
9613.8	2069.6	9626.2	2069.9	9626.8	2069.9	9627.4	2069.9	9636.4	2069.5
9645.6	2068.9	9664.5	2068.2	9666.9	2068.2	9669	2068.2	9675.3	2068.2
9680.4	2068.2	9682	2068.2	9688.2	2068	9689	2068	9694.3	2068
9695	2068.1	9701.4	2068.2	9708.5	2068.4	9712.3	2068.5	9714.7	2068.5
9717.9	2068.5	9724	2068.4	9730.1	2068.3	9739.6	2068.3	9753.6	2068.3
9758.4	2068.1	9767.9	2068.1	9769.4	2068.1	9772.3	2068.2	9779.2	2068.3
9785.6	2068.3	9788.6	2068.1	9794	2069.3	9795.2	2069.5	9796.9	2069.6
9799.2	2069.7	9800.7	2069.7	9811.2	2069.3	9820.3	2069.8	9825.9	2070.1
9829.2	2070.3	9830.7	2070.3	9833.6	2070.2	9842	2070	9842.8	2070
9843	2070	9849.5	2070.4	9881.6	2070.6	9894.5	2070.5	9900.6	2070.4
9914.6	2070.4	9915.6	2070.4	9916.9	2070.4	9918.7	2070.3	9920.9	2070.3
9924.8	2070.3	9930.1	2070.4	9936	2070.4	9953.1	2070.6	9972.8	2070.9
9977.7	2070	9980	2069.705	9984.64	2069.11	9989	2068.6	9995.3	2068.7
9998.3	2068.8	10000	2068.7	10005.9	2068.8	10008.8	2069.11	0011.75	2069.46

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 10013.9  2069.8 10045.6  2070.6 10051.9  2070.7 10062.2  2069.3 10064.5    2069
 10066.4    2069 10073.6  2069.1 10078.8  2070.6 10081.8  2071.3 10092.4  2072.3
 10098.5  2072.7 10103.8  2072.9 10110.8  2073.3 10113.9  2073.5 10116.8  2073.7
 10128.1  2074.3 10131.7  2074.5 10136.8  2074.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9524.4    .065    9980     .04 10013.9    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9980 10013.9              150     177     185             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
  9524.4    9785    2072 10051.9 10136.8    2072
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    9720    9786    2075

CROSS SECTION          RIVER: W11.0000
REACH: R0200              RS: 5.089

INPUT
Description:
Station Elevation Data    num=      83
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9539.7  2067.4  9552.4    2067  9554.8    2067  9555.7    2067  9568.1  2066.8
  9568.7  2066.8  9569.9  2066.8  9574.7  2066.7  9581.8  2066.6  9585.7  2066.6
  9590.1  2066.5  9597.3  2066.3  9598.1  2066.5  9598.9  2066.3  9600.8  2066.1
    9604  2066.1  9607.4  2066.1  9623.5  2065.5  9623.6  2065.5  9634.3  2064.7
  9637.5  2064.5  9641.9    2064  9645.7  2064.5  9651.4  2065.3  9666.9  2065.4
  9684.4  2065.3  9691.4  2063.9    9694  2063.4  9699.6  2063.7  9705.3  2064.1
  9708.7  2063.7  9712.8  2063.3  9720.7  2064.8  9722.4    2065  9725.3  2065.1
  9733.8  2065.1    9745  2065.4  9746.5  2065.4  9746.7  2065.4    9747  2065.4
  9747.2  2065.4  9748.7  2065.4  9755.7  2065.5  9762.9  2065.6  9765.3  2065.5
  9770.9  2065.1  9779.5  2064.2  9782.1  2064.5  9784.3  2064.9  9786.9  2065.4
  9793.8  2065.6  9798.5  2065.7    9806  2065.9  9817.6  2066.1  9822.9  2066.2
  9831.3  2065.5    9833  2065.4  9834.2  2065.7  9835.2    2066  9842.3  2066.3
    9850  2066.3  9874.4  2066.6  9890.2  2066.7  9903.1  2066.7  9913.9  2066.8
  9922.5  2066.9  9934.3    2067  9953.8  2064.8    9958  2064.3  9958.9  2064.3
  9963.9  2064.4  9999.7  2064.8 10002.9  2064.8   10017  2064.8   10023    2068
 10023.1    2068 10064.3  2065.3 10066.4    2065 10068.6  2064.7   10078  2065.5
 10105.6  2067.5 10111.7  2067.6 10123.9  2067.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9539.7    .065  9953.8     .04   10017    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9953.8   10017              270     314     314             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
  9539.7    9734    2068
Right Levee     Station= 10023.1      Elevation=    2068

CROSS SECTION          RIVER: W11.0000
REACH: R0200              RS: 5.029

INPUT
Description:
Station Elevation Data    num=      80
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9687.8  2059.9    9689  2059.9  9689.9  2059.8  9690.8  2059.8  9692.3  2059.9
    9694  2059.6  9695.1  2059.4  9702.5  2059.2  9703.4  2059.1  9705.1  2059.2
```

9715.6	2059.2	9716.5	2059.1	9718.1	2059	9727.3	2058.4	9732.8	2058
9735.5	2058.2	9740.2	2058.3	9743.7	2058.2	9747.7	2058	9753.4	2058
9756.3	2057.9	9759.1	2057.8	9767.5	2057.2	9774	2056.7	9774.1	2056.7
9774.3	2056.7	9785.4	2057.8	9793.8	2057.2	9798.5	2056.8	9799.5	2056.8
9800.1	2056.7	9804.2	2056.5	9812.9	2057.5	9815.7	2057.8	9829.9	2057.9
9834.4	2057.9	9835.4	2057.9	9838.1	2058	9849.4	2058.3	9853	2058.4
9859.5	2058.4	9861	2058.4	9889.4	2058.4	9893.6	2058.4	9908	2057.9
9913.6	2057.7	9918.1	2058.4	9918.2	2058.4	9935.5	2058.6	9937.8	2058.7
9942.2	2057.9	9947.7	2057.1	9949.1	2056.8	9956.3	2058.1	9957.3	2058.3
9967.5	2056.9	9967.7	2056.9	9967.9	2056.9	9977.7	2058.9	9979.6	2058.7
9986.9	2057.8	9990.2	2057.4	9993.1	2057.5	10000	2057.6	10007.2	2057.7
10012.4	2057.8	10017.3	2058.1	10020.5	2058.2	10026.6	2058.7	10034.3	2059.1
10037.1	2059.1	10041.1	2059.4	10042.8	2059.3	10049.2	2058.9	10049.9	2058.9
10050.8	2058.9	10058.1	2058.4	10063.3	2058.2	10069.7	2058.3	10082	2058.9

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9687.8	.065	9986.9	.04	10017.3	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986.9	10017.3	511	511	511	.1	.3

Right Levee Station= 10041.1 Elevation= 2059.4

CROSS SECTION RIVER: W11.0000
REACH: R0200 RS: 4.933

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9700.6	2042.9	9708.4	2042.4	9718.2	2042	9722.1	2041.8	9732	2041.7
9732.4	2041.7	9732.6	2041.7	9745.2	2042.7	9747.5	2043	9750.2	2043.2
9763.4	2043.4	9771.5	2043.4	9782.2	2043.5	9798.3	2044	9821.4	2044.5
9831.9	2044.8	9837.6	2045	9861.1	2044.9	9877.2	2044.6	9883.8	2043.7
9887.3	2043.4	9914.7	2044.2	9915.1	2044.2	9915.7	2044.2	9962.4	2043.6
9966.1	2043.7	9978.4	2044	9982.38	2043.82	9991	2043.5	9993.1	2043.4
9994.7	2043.4	10000	2043.4	10004	2043.8	10005.5	2043.9	10007.7	2044
10007.9	2044.1	10008.5	2044.1	10010.4	2044.1	10014.5	2044.1	10062.6	2044.5
10090.4	2044.5	10095.3	2044.4	10096.1	2044.3	10103	2043.5	10104.4	2043.4
10104.5	2043.4	10104.6	2043.4	10106.6	2043.3	10113.7	2043.5	10114.6	2043.4
10126.8	2044.5	10128.4	2044.7	10136.6	2043.9	10138.7	2043.8	10143.4	2044.1
10152.4	2044.8								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9700.6	.065	9982.38	.04	10007.9	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.38	10007.9	292	292	292	.1	.3

Left Levee Station= 9837.6 Elevation= 2045

CROSS SECTION RIVER: W11.0000
REACH: R0200 RS: 4.877

INPUT
Description: XS upstream of split S12.0000
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9720.3	2036.2	9724.7	2036.2	9735.6	2036	9763.5	2034.9	9766.6	2034.6
9775.6	2033.9	9782.1	2034.7	9786.4	2035.2	9790.1	2035	9804	2034.3
9808.4	2034.3	9823.5	2034.3	9825.5	2034.2	9826.3	2034.3	9841.1	2035.1
9862	2036	9865.3	2036.1	9872.4	2036.1	9873.5	2036.1	9875.2	2036.1
9892.9	2035.6	9894.9	2035.6	9896	2035.6	9899.8	2035.6	9905.6	2035.7

```
  9925.3  2036.1  9928.8  2035.7  9932.4  2035.2    9934  2035.5  9936.6    2036
    9949  2035.7  9963.2  2035.6  9968.7  2035.3  9974.6  2035.3  9978.1  2035.3
  9983.6  2035.3    9985  2035.2  9989.1  2035.4    9999  2035.7   10000  2035.7
 10002.1  2035.8 10002.2  2035.8 10002.3  2035.8   10007  2035.6 10007.4  2035.6
 10021.2    2036   10026  2036.2 10029.3  2036.4 10035.3  2036.4   10057    2036
 10078.2  2035.8   10080  2035.9 10088.8  2035.3 10093.4  2035.1   10112  2035.6
   10117  2035.7 10125.6  2035.9 10144.3  2036.4 10148.2  2036.5 10160.4  2036.4
 10180.5  2035.6 10185.6  2035.4 10211.1  2033.9 10220.5  2033.4 10228.2  2033.9
 10243.9  2034.2 10250.8  2034.2 10259.1  2034.1 10266.6  2034.6 10274.3  2035.1
 10286.2  2036.6   10288  2036.8 10289.7    2037

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9720.3    .065  9963.2     .04 10021.2    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9963.2 10021.2                 0       0       0              .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
  9720.3    9760    2037 10148.2 10289.7  2036.5
Right Levee     Station= 10148.2      Elevation=  2036.5

CROSS SECTION          RIVER: W11.0000
REACH: R0300              RS: 4.843

INPUT
Description: Q = 586 cfs from D534R HEC-1 FCD 93-07
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9897.5  2032.1  9913.4  2031.3  9930.9  2030.4  9933.3  2030.6  9942.7    2031
  9949.1  2031.3  9963.7  2031.4  9973.4  2031.7  9988.1  2031.4  9990.4  2031.4
   99932031.015  9998.5  2030.2   10000    2030 10001.5  2030.2 10007.6  2030.7
 10008.2  2030.8 10024.6  2031.8 10045.6  2031.1 10050.9    2031 10060.7  2031.5
 10061.8  2031.6 10079.4  2031.1   10098  2030.5 10130.4  2032.5 10136.3  2032.9
 10136.7  2032.9 10137.2    2033 10140.9    2033   10142  2032.9 10143.4  2032.9
 10143.8  2032.9 10157.7  2032.5   10160  2032.2 10200.7  2028.6 10203.6  2028.5
 10204.3  2028.5 10206.5  2028.6 10209.9  2028.7 10228.6  2029.8 10231.7  2030.2
 10237.2  2030.6 10243.7  2031.2 10245.8  2031.5 10254.7  2031.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9897.5    .065    9993     .04 10007.6    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9993 10007.6                100     118     108              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 10137.2 10254.7    2033
Right Levee     Station= 10137.2      Elevation=    2033

CROSS SECTION          RIVER: W11.0000
REACH: R0300              RS: 4.821

INPUT
Description: XS upstream of split S11.0205
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9824    2029    9844  2028.8    9923    2028    9934  2027.5    9943    2028
    9956  2028.6    9970  2028.6    9984    2028    99932027.831   10000  2027.7
   10010  2027.9   10015    2028   10020  2028.8   10045  2028.8   10100    2028
   10136    2028   10147  2028.4   10170    2028   10205  2026.3   10223    2028
   10237  2029.3
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9824    .065    9993     .04   10010    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9993   10010               0       0       0             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10170   10237    2029

CROSS SECTION          RIVER: W11.0000
REACH: R0400              RS: 4.799

INPUT
Description: Q = 506 cfs right split at S11.0205
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9984    2026    9994    2025   10000  2024.4   100102024.708   10039  2025.6
   10046  2025.5   10176  2024.6   10220  2025.4   10260    2024   10265  2023.7
   10270    2024   10298    2026   10310  2026.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9984    .065    9994     .04   10010    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9994   10010              205     233     205             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10220   10310    2026

CROSS SECTION          RIVER: W11.0000
REACH: R0400              RS: 4.755

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9855.3  2020.2    9859    2020  9867.9  2019.9  9900.6  2019.6  9903.6  2019.5
    9917    2019  9919.9  2018.9  9931.4  2019.4  9945.1  2019.6  9956.8  2019.9
  9962.9  2019.6  9964.5  2019.5  9967.1  2019.5  9970.1  2019.2    9980    2018
   10000  2017.4 10000.3  2017.4 10000.6  2017.410006.63 2018.06   10014  2018.9
 10016.4    2019 10020.2  2019.2 10024.6  2019.4   10033  2019.4 10034.2  2019.4
 10043.2  2019.6 10049.7  2019.7 10052.2  2019.6 10066.5  2019.1 10066.8  2019.1
 10066.9  2019.1 10067.1  2019.1 10079.1  2018.9 10081.6  2018.9 10084.4  2018.7
 10088.7  2018.7 10094.4  2018.3 10105.2  2018.7 10105.6  2018.8 10108.2  2019.9
   10111    2020 10116.4  2020.2 10121.6  2020.2 10127.9  2020.4   10136  2020.4
 10137.2  2020.4 10144.5  2020.2 10150.6  2020.2 10155.9  2019.8 10159.3  2019.7
 10162.8  2019.1 10163.5    2019 10164.3    2019 10169.2  2018.5 10176.7  2017.9
 10180.8  2018.2 10183.5  2018.9 10185.9  2019.1 10190.5  2019.5 10192.2  2019.6
 10195.9  2019.9 10203.6    2020 10208.8  2020.5 10217.2  2021.2 10221.3  2021.3
 10226.4  2022.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9855.3    .065    9980     .0410006.63    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          998010006.63              400     429     445             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 10127.9 10226.4  2020.4
```

```
CROSS SECTION          RIVER: W11.0000
REACH: R0400              RS: 4.674

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9883.1  2008.3  9892.5  2008.2  9896.6  2008.2  9901.4  2007.7  9915.5  2006.4
  9917.9  2006.2  9918.8  2006.1  9921.9  2006.4  9935.2  2007.4  9939.8  2007.3
  9957.5  2006.5  9966.9  2006.2    9969    2006  9971.2  2006.1  9981.8  2006.3
  9991.2  2005.8   10000  2005.5 10013.2  2005.8 10035.7  2006.4 10050.3  2007.4
 10057.7  2007.2 10059.1  2007.1 10060.2  2007.1 10065.8  2006.5 10071.6  2005.8
 10093.9  2006.3 10096.6  2006.4 10100.2  2006.3 10132.9  2005.4 10135.8  2005.6
 10144.2  2006.3 10146.3  2006.5 10147.4  2006.6 10156.1  2007.5 10156.3  2007.5
 10165.1    2008 10165.7    2008 10169.2  2008.2 10177.5  2008.5 10180.7  2008.6
 10182.4  2008.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9883.1    .065  9991.2     .04 10013.2    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9991.2 10013.2              478     478     478             .1       .3

CROSS SECTION          RIVER: W11.0000
REACH: R0400              RS: 4.584

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9878.7  1994.7  9882.7  1994.7  9896.1  1994.5  9921.6    1994  9923.2  1993.6
  9926.4    1993  9931.6  1993.6  9934.3  1993.9  9939.9    1994    9950  1994.2
  9958.2  1994.1  9959.2  1993.8  9962.1  1993.4  9962.4  1993.4  9962.7  1993.4
  9967.9  1994.3  9974.6    1994    9978    1994  9980.1  1993.6  9984.2    1993
    9995  1992.8   10000  1992.9 10005.7  1993.2 10022.2  1994.4 10025.1  1994.4
 10034.2  1994.1 10051.1  1994.4 10057.1  1994.4 10063.7  1994.5 10067.1  1994.4
 10080.4  1993.5 10082.7  1993.5 10090.2  1993.6 10097.2  1993.7 10101.1  1993.9
 10110.4  1993.3 10115.3    1993 10118.2  1992.4 10120.1  1992.1 10131.5  1992.4
 10133.9  1992.4 10144.6  1992.5 10158.7  1992.5 10159.3  1992.6 10163.3  1993.3
 10167.5  1993.3 10175.6  1993.7 10179.9  1994.1 10199.1  1995.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9878.7    .065  9984.2     .04 10005.7    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9984.2 10005.7              437     437     437             .1       .3
Left Levee      Station=  9967.9      Elevation=  1994.3

CROSS SECTION          RIVER: W11.0000
REACH: R0400              RS: 4.501

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9693.4  1985.1  9697.8  1984.9  9698.6  1984.9  9711.7  1984.5  9719.2  1984.4
  9743.1  1983.6  9758.5  1983.7  9760.5  1983.5  9768.6  1982.4    9769  1982.4
  9776.7  1983.4  9784.4  1983.3  9805.6  1983.2  9806.6  1983.2  9807.1  1983.2
  9810.1  1982.9  9819.3    1982  9820.3  1982.1  9823.8  1982.3    9828  1982.5
  9828.5  1982.6  9852.6  1982.5  9857.4  1982.5  9871.3  1982.7  9879.1  1981.9
  9881.9  1981.5  9891.9  1982.2    9900  1982.9  9904.3  1982.3  9914.1  1981.1
```

```
  9915.7  1981.2  9919.3  1982.1  9924.4  1982.8  9941.3  1982.8    9960  1982.9
  9971.9  1981.5  9977.7  1980.8  9994.1  1980.6  9996.7  1980.6   10000  1980.9
10007.98 1981.84 10017.1  1982.7 10025.8  1982.7 10032.2  1982.8 10034.3  1982.7
 10035.8  1982.7   10042  1982.7 10081.2  1981.8 10101.4  1981.4 10107.6  1981.4
 10115.7  1981.4 10135.9  1981.8 10156.7  1981.6 10164.1  1981.6 10168.4  1980.7
   10171  1980.3 10175.4  1980.4 10182.1  1981.5 10183.1  1981.7 10184.7  1981.8
 10231.1  1986.4 10232.8  1986.5 10234.5  1986.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9693.4    .065  9971.9     .0410007.98    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9971.910007.98              340     388     370             .1       .3
Left Levee      Station=    9900      Elevation=  1982.9

CROSS SECTION          RIVER: W11.0000
REACH: R0400              RS: 4.427

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9762.2    1974  9766.1    1974  9769.1  1973.5  9774.7  1972.5  9780.6  1972.8
  9785.6  1972.9  9788.2  1973.4  9791.7  1974.1  9816.1    1974  9818.6    1974
  9821.6    1974  9849.2  1973.4  9850.8  1973.1  9860.3  1971.5  9866.8  1972.2
  9876.5  1973.1  9886.3    1973  9899.3  1973.1  9912.4  1973.1  9923.5  1972.6
  9928.3  1972.5  9933.5  1972.4  9943.9  1972.1  9951.3  1972.2  9966.3  1972.5
    9977  1972.6  9979.5  1972.5  9987.6  1972.2  9988.4  1971.9  9991.9  1970.4
  9996.2  1970.3   10000    1970   10002  1970.3   10007  1970.7 10008.7  1971.3
 10012.6  1972.3   10030  1972.8 10037.9  1973.1   10041  1973.1 10047.3  1973.4
 10049.7  1973.6 10057.9    1974 10077.2  1975.3 10091.4  1975.4 10091.8  1975.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9762.2    .065  9988.4     .04 10008.7    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9988.4 10008.7              464     464     464             .1       .3
Left Levee      Station=  9791.7      Elevation=  1974.1

CROSS SECTION          RIVER: W11.0000
REACH: R0400              RS: 4.339

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9804.9  1963.6  9805.2  1963.6    9811  1963.2    9839  1961.1  9856.5  1960.5
  9863.5  1960.5  9867.5  1959.6  9873.8  1958.4  9876.1  1958.9  9884.8  1959.6
  9889.9  1960.3  9898.6  1960.3  9913.3  1960.4    9928  1960.5  9939.6  1959.9
  9939.7  1959.9  9955.4  1961.1  9956.7  1960.9  9962.9    1960  9969.8  1960.1
  9987.8  1960.8  9988.8  1960.8  9996.1  1960.6    9999  1960.5  9999.3  1960.4
   10000  1959.9 10001.3    1960 10011.7  1960.1 10013.6  1960.9 10016.6  1960.4
 10017.8  1960.3 10019.8  1959.9 10021.8  1960.4   10026    1961 10038.8  1962.3
 10039.9  1962.4 10042.2  1962.5 10050.9  1962.5   10056  1962.3 10060.6  1962.2
 10095.3  1961.2 10096.8  1961.3 10103.2  1961.7 10111.8  1962.4 10115.1  1962.6
 10127.6  1962.7 10137.5  1962.7 10143.4  1962.9 10158.6  1964.2 10161.3  1964.4
 10164.6  1964.7 10164.9  1964.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9804.9    .065  9988.8     .04 10013.6    .065
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9988.8 10013.6              129     129     129             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
  9804.9    9917    1962
Left Levee      Station=  9955.4      Elevation=  1961.1
Right Levee     Station= 10042.2      Elevation=  1962.5
Blocked Obstructions     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
  9804.9  9805.2  1963.6 10164.9 10164.9  1964.7

CROSS SECTION          RIVER: W11.0000
REACH: R0400              RS: 4.315

INPUT
Description:
Station Elevation Data    num=      28
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9845.6  1960.1    9847  1960.1  9849.4  1959.9  9874.2  1957.4  9888.8  1956.3
  9890.1  1956.4  9893.3  1956.5  9900.1  1956.7  9902.8  1956.9  9907.2    1957
  9923.9  1957.3  9926.7  1957.4    9927  1957.3  9933.7  1956.1    9939  1956.2
    9941  1956.3  9954.2  1957.3  9957.1  1957.4    9968  1957.3  9983.5    1957
   10000  1956.8 10008.6  1956.8 10010.9  1957.2 10016.9  1957.4 10034.9  1958.3
 10039.8  1958.7 10042.3  1958.9 10045.5  1959.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9845.6    .065  9983.5     .04 10010.9    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9983.5 10010.9                0       0       0             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
  9845.6    9897    1959

CROSS SECTION          RIVER: W11.0000
REACH: R0500              RS: 4.270

INPUT
Description: Q = 586 cfs from D534R HEC-1 FCD 93-07
Station Elevation Data    num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9888.2  1954.2    9889  1954.2  9890.6  1954.1  9891.6    1954  9893.8  1953.8
  9921.9  1951.6  9924.6  1951.5  9945.5  1950.6  9967.5  1952.2  9968.5  1952.3
  9972.2    1952  9987.8    1951  9999.2  1950.1   10000    1950 10002.8  1950.2
 10015.3  1951.1 10019.7  1952.1 10020.8  1952.3 10036.3  1953.2 10038.7  1953.4
 10047.9  1953.8 10052.3  1953.9 10055.9  1953.9 10058.8  1953.9 10068.9  1954.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9888.2    .065  9987.8     .04 10015.3    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9987.8 10015.3              474     474     474             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
  9888.2    9933    1954

CROSS SECTION          RIVER: W11.0000
REACH: R0500              RS: 4.180

INPUT
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Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9913  1943.7  9932.7  1941.9  9953.9  1940.1  9956.1    1940  9958.5    1940
    9966  1939.7  9974.1  1939.2  9989.1  1938.1  9994.2    1938  9996.7  1937.9
  9999.1  1937.5   10000  1937.4 10000.6  1937.5 10008.8  1938.2 10013.9  1938.7
 10017.7    1939 10026.6  1939.1 10042.6  1939.7 10043.5  1939.8 10046.7  1939.9
 10059.6  1940.7 10060.1  1940.7 10071.6  1940.9 10074.6  1940.9 10074.9  1940.9
 10075.3  1940.9 10075.9  1940.9 10087.6  1940.6 10108.8    1940 10109.6  1939.9
 10116.8  1938.7 10119.7  1938.7 10122.6    1939 10128.4  1939.8 10138.4  1940.8
 10138.5  1940.8 10145.4  1940.9 10147.4  1941.1 10178.7  1941.5 10189.6  1941.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9913    .065  9989.1     .04 10008.8    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9989.1 10008.8              355     355     355              .1       .3
Right Levee     Station= 10071.6      Elevation=  1940.9

CROSS SECTION          RIVER: W11.0000
REACH: R0500              RS: 4.113

INPUT
Description:
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9923  1931.8    9943    1930    9982  1929.4   10000  1928.1   100141928.991
   10022  1929.5   10033  1929.5   10038    1930   10052  1930.7   10070    1930
   10085  1929.8   10095    1930   10108  1930.5   10132  1930.2   10162  1931.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9923    .065    9982     .04   10014    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9982   10014               174     174     174              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10052   10162    1932
Right Levee     Station=   10052      Elevation=  1930.7

CROSS SECTION          RIVER: W11.0000
REACH: R0500              RS: 4.080

INPUT
Description:
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9924  1926.8    9946  1925.7    9973  1926.5    99951924.752   10000  1924.4
   10029  1924.7   10079  1925.9   10119    1924   10129  1923.7   10140    1924
   10169  1925.2   10194    1924   10219  1922.2   10235    1924   10250    1926
   10256  1926.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9924    .065    9995     .04   10029    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995   10029               144     144     144              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9924    9973    1927
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Left Levee      Station=    9973      Elevation=  1926.5
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   10079   10256    1927

CROSS SECTION          RIVER: W11.0000
REACH: R0500              RS: 4.053

INPUT
Description:
Station Elevation Data    num=      17
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9888  1922.4    9945    1921    9980  1921.1 9989.16 1920.63    9995 1920.35
   10000  1920.1   10005 1920.23 10011.29  1920.4   10033    1921   10044  1920.8
   10055  1921.5   10089  1920.7   10126  1921.7   10150    1920   10178    1918
   10196    1920   10206  1920.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9888    .065 9989.16     .04 10011.29    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9989.16 10011.29              226     226     226             .1       .3
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
   10126   10206  1922.4

CROSS SECTION          RIVER: W11.0000
REACH: R0500              RS: 4.010

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9895.9  1917.1  9900.2  1916.8  9927.4  1915.7  9931.1  1915.6  9935.3  1915.4
    9940    1915  9947.8  1914.6  9949.2  1914.6  9954.2  1914.7  9958.3  1914.4
  9959.9  1914.3  9961.6  1914.1    9969  1913.4  9970.5  1913.6  9986.5  1914.7
  9991.4  1914.3  9995.7  1913.6  9999.3  1914.1   10000  1914.2 10000.6  1914.1
 10005.9  1914.2 10010.9  1914.3 10011.9  1914.3 10020.9  1915.1   10032  1914.8
 10045.8  1914.6 10051.9  1914.6 10053.5  1914.5 10059.4  1914.9 10063.4  1915.2
 10072.3    1915 10075.2    1915   10080  1914.9 10084.7  1914.7 10086.2  1914.5
 10090.3  1914.8 10105.1  1915.2 10115.6  1915.3 10118.8  1915.1 10132.6  1914.3
 10133.8  1914.3 10136.8  1914.5 10142.9  1914.9 10153.6  1914.4 10170.7  1913.9
 10197.5    1916 10213.1  1917.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9895.9    .065  9959.9     .04 10011.9    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9959.9 10011.9              261     261     245             .1       .3

CROSS SECTION          RIVER: W11.0000
REACH: R0500              RS: 3.961

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9924.9  1908.8  9946.2  1908.8  9950.1  1908.6  9955.3  1908.2  9961.9  1907.7
  9962.3  1907.6  9962.7  1907.6  9966.5  1907.7  9975.1  1907.6  9990.2  1907.7
  9993.1  1907.4  9993.5  1907.3  9993.9  1907.3   10000  1907.6 10007.3  1907.3
 10007.5  1907.3 10008.5  1907.4   100121907.629 10019.2  1908.1 10024.1  1907.9
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 10025.8  1907.8   10029  1907.8 10032.3  1907.9   10040  1907.2 10042.9    1907
 10043.3  1907.1 10049.3    1908 10052.6  1907.7 10055.3  1907.3 10056.3  1907.2
 10057.1  1907.4 10062.9  1907.4 10065.2  1907.5 10068.8  1907.5 10070.9  1907.5
 10076.3  1907.4 10077.7  1907.4   10092  1907.5   10110  1907.6   10119  1907.7
 10121.5  1907.4 10127.4    1907 10134.8  1907.2 10152.2  1907.8   10178  1907.2
 10181.6    1907 10199.4  1907.8   10202  1907.9 10204.1    1908 10215.8  1907.6
 10225.3  1907.2 10236.5  1907.2 10246.5  1907.2 10248.9  1907.1 10250.8  1907.1
   10258  1906.7 10261.7  1906.8 10264.5  1906.7 10278.4    1907 10295.2  1908.1
   10327    1906   10349  1904.8   10367    1906   10378    1907   10409  1906.7
   10446    1908   10457  1908.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9924.9    .065  9990.2     .04   10012    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9990.2   10012              290     296     250             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 10295.2   10457  1908.5
Right Levee     Station= 10295.2      Elevation=  1908.1

CROSS SECTION          RIVER: W11.0000
REACH: R0500              RS: 3.905

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9901.7  1901.2    9908  1901.1  9912.2  1901.1  9922.7  1900.8  9944.1    1900
  9951.1  1900.1  9960.3  1900.1  9982.2  1899.9  9997.9  1899.7   10000  1899.8
 10013.1  1900.5 10015.8  1900.5 10029.3  1900.5 10042.2  1900.5 10070.9  1900.5
 10074.4  1900.2 10082.6  1899.4 10091.1  1899.3 10094.8  1899.1 10097.9  1899.1
   10108  1899.1 10115.9  1899.3 10119.8  1899.7 10126.6  1899.7 10131.6  1899.6
 10149.6  1899.6 10158.3  1899.5 10162.1  1899.5 10184.1  1900.6 10196.7  1901.2
   10211  1900.6 10216.7  1900.5 10223.9  1900.4 10243.3    1900 10244.8    1900
 10253.2  1899.9 10262.6  1899.2 10266.9  1898.8 10275.3  1899.9 10301.3    1901
 10310.8  1901.1 10311.9  1901.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9901.7    .065  9982.2     .04 10013.1    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9982.2 10013.1              260     260     230             .1       .3

CROSS SECTION          RIVER: W11.0000
REACH: R0500              RS: 3.855

INPUT
Description:
Station Elevation Data    num=      35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9943.8  1893.5  9970.1  1893.6  9981.6  1893.3  9986.4  1893.1   10000  1892.4
   10005  1892.4 10007.7  1892.5 10011.8  1892.4 10018.5  1892.4 10027.8    1893
 10029.5  1893.1   10031  1893.1 10053.2  1892.9 10074.1  1892.5 10075.9  1892.2
 10082.6  1891.8 10086.5    1892 10100.6  1892.7 10107.2  1891.9 10110.5  1891.8
 10113.9  1891.9   10120  1892.9 10121.7  1893.1 10125.2  1893.1 10127.6    1893
 10141.4  1892.3 10141.7  1892.2   10142  1892.2 10155.2  1893.5   10163  1893.9
 10169.7  1894.4   10227    1894   10257    1893   10270    1894   10280  1894.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
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  9943.8    .065  9986.4     .04 10027.8    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9986.4 10027.8              307     307     307             .1       .3
Left Levee      Station=  9970.1      Elevation=  1893.6

CROSS SECTION          RIVER: W11.0000
REACH: R0500              RS: 3.797

INPUT
Description:
Station Elevation Data    num=      17
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9946    1886    9973    1884    9980  1883.7    9989  1883.8   10000  1883.5
   10010    1884   10029    1885   10047  1884.6   10069  1885.3   10100    1884
   10130    1886   10144  1886.3   10156    1886   10166  1885.5   10174    1886
   10206    1887   10246  1887.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9946     .07    9989    .045   10010     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9989   10010              385     385     375             .1       .3

CROSS SECTION          RIVER: W11.0000
REACH: R0500              RS: 3.724

INPUT
Description:
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9925.3  1878.6  9938.7  1874.4  9940.9  1873.7    9963  1873.6  9970.3  1873.5
  9977.5  1873.5  9977.6  1873.5  9978.1  1873.5  9987.1  1873.4  9995.6  1873.3
   10000  1873.4 10010.7  1873.5 10013.7  1873.5 10016.3  1873.9 10024.5  1875.2
 10029.2  1875.4 10031.9  1875.4 10033.4  1875.5 10037.3  1875.5 10045.3  1875.3
 10047.2  1874.9 10053.4  1873.3 10059.8  1874.5 10063.2  1875.1 10082.1  1875.3
 10088.2  1875.5 10107.9  1875.2 10120.7    1875   10121  1874.9 10126.7  1873.1
 10131.2  1874.4 10132.8  1874.8 10136.4  1874.9   10144  1875.3 10145.8  1875.4
 10161.5  1875.6 10167.3  1875.6 10170.1  1875.6 10176.7  1875.4 10178.4  1875.4
   10179  1875.4 10189.4  1876.2 10199.3  1876.7 10217.9  1876.7 10225.7  1876.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9925.3    .065  9940.9    .035 10016.3    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9940.9 10016.3              457     457     457             .1       .3
Right Levee     Station= 10033.4      Elevation=  1875.5

CROSS SECTION          RIVER: W11.0000
REACH: R0500              RS: 3.638

INPUT
Description:
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9961.9  1868.7  9963.7  1868.2  9977.9    1864 9985.54 1861.61  9987.1  1861.2
  9989.9  1861.2   10000  1861.4 10013.9    1861 10014.4  1860.9 10015.9  1861.3
 10035.3  1865.7 10038.2  1865.6 10044.4  1865.3 10055.4  1864.9 10060.7  1864.9
   10080  1864.2 10086.3  1864.3 10093.6    1864 10095.4    1864 10108.3    1865
 10118.5  1865.8 10140.4  1867.8
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Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9961.9    .065 9985.54    .035 10015.9    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9985.54 10015.9              328     328     328             .1       .3
Right Levee     Station= 10035.3      Elevation=  1865.7

CROSS SECTION          RIVER: W11.0000
REACH: R0500              RS: 3.576

INPUT
Description:
Station Elevation Data    num=      39
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9943.9  1856.7  9945.2  1856.6  9953.5  1856.1  9957.3  1855.8  9959.7  1855.7
  9962.2  1855.4  9963.3  1855.3  9969.9    1855    9976  1854.4  9976.4  1854.3
  9981.7  1854.1  9987.4  1853.8   10000  1853.8 10008.5  1853.7 10012.4  1853.6
 10012.7  1853.7 10016.9  1855.1 10028.1  1856.1 10029.6  1856.3 10031.9    1856
 10045.7  1854.5 10050.4    1854 10052.1  1853.9 10063.4  1853.1 10076.2  1852.7
 10078.2  1852.9 10112.3  1855.4 10120.3  1854.5 10132.2  1853.2 10142.3  1852.5
 10144.2  1852.7 10145.1  1852.8 10155.6  1853.8 10159.4  1854.2 10165.5  1854.8
 10169.4  1855.2 10174.6  1855.8 10192.4  1857.4 10194.7  1857.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9943.9    .065  9981.7    .035 10016.9    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9981.7 10016.9              107     107     107             .1       .3
Right Levee     Station= 10029.6      Elevation=  1856.3

CROSS SECTION          RIVER: W11.0000
REACH: R0500              RS: 3.555

INPUT
Description: XS upstream of split S11.0405
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9932  1853.1    9948    1852    9962  1851.1    9983  1851.3   10000    1851
   10028  1851.2   10037    1852   10045  1852.3   10055    1852   10074  1850.9
   10085    1852   10112    1854   10133    1855

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9932    .065    9983    .035   10028    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9983   10028              270     270     270             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10045   10133    1853
Right Levee     Station=   10045      Elevation=  1852.3

CROSS SECTION          RIVER: W11.0000
REACH: R0600              RS: 3.504

INPUT
Description: Q = 586 cfs from D534R HEC-1 FCD 93-07
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9920  1846.8    9947    1846    9957    1847 9974.55 1845.04    9977  1844.8
   10000  1844.7   10018  1844.810019.73 1845.0210022.44 1845.34   10026  1845.8
```

```
   10039  1845.7   10066  1846.8   10075    1846   10105    1844   10110  1843.9
   10117    1844   10135    1846   10170    1850   10185  1851.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9920    .065 9974.55    .03510019.73    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9974.5510019.73              282     282     282             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10066   10185    1847

CROSS SECTION          RIVER: W11.0000
REACH: R0600              RS: 3.451

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9967.6  1843.6    9970  1843.2  9973.6  1842.4 9981.63 1840.62  9986.6  1839.5
    9993  1839.4   10000  1839.5 10020.9  1840.1 10023.5  1840.2   10025  1840.1
 10032.7  1839.2 10042.7  1839.2 10048.8  1839.3 10052.7  1839.3 10055.5  1839.4
 10058.1  1839.6   10059  1839.7 10065.4    1840 10070.3  1840.4   10075  1840.7
   10078  1840.9 10083.9  1841.4 10091.4  1841.4 10093.5  1841.4 10103.2    1841
 10107.1  1840.7 10107.9  1840.6 10119.8  1839.8 10122.6  1839.8 10151.2  1838.1
 10154.5  1837.9 10157.5  1837.7 10162.1    1838 10167.2  1838.4 10174.5  1838.7
 10174.8  1838.7   10175  1838.7   10176  1838.7 10183.1    1839 10188.9  1839.5
 10194.8  1839.8 10195.7  1839.8 10196.6  1839.9 10202.8  1840.4 10226.2  1841.4
 10228.9  1841.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9967.6    .065 9981.63    .035 10023.5    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9981.63 10023.5                0       0       0             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 10083.9 10228.9    1842
Left Levee      Station=  9967.6      Elevation=  1843.6

CROSS SECTION          RIVER: W11.0000
REACH: R0700              RS: 3.402

INPUT
Description: Q = 1107 cfs from C535 HEC-1 FCD 93-07
Station Elevation Data    num=      95
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9912.8  1840.5  9919.6  1839.2  9929.3  1837.3  9931.4  1836.7  9932.3  1836.5
  9934.8  1836.4  9941.3  1836.5  9957.9  1836.4    9960  1836.4  9961.5  1836.4
  9983.3  1836.5  9990.3    1836   10000  1835.4 10018.1  1836.3 10025.9  1836.7
 10035.9  1837.1 10037.4  1837.1 10046.1  1837.1   10048  1837.2 10050.5  1837.2
 10054.7  1837.3 10068.9  1837.4 10075.5  1837.4 10077.7  1837.3 10090.2  1837.2
 10090.8  1837.2 10099.5  1837.5 10102.2  1837.7 10126.7  1837.2 10131.2  1837.2
 10138.8  1836.6 10138.9  1836.6   10139  1836.6 10144.5  1837.3 10197.3  1836.7
 10202.7  1836.6   10203  1836.7 10206.6  1836.9 10207.3  1836.9 10208.9  1836.9
 10214.8    1837 10245.1  1837.2 10253.2  1837.1 10255.9  1837.1 10258.2  1837.2
 10260.4    1837   10267  1836.5   10269  1836.3 10269.3  1836.3 10273.2  1836.8
 10279.3  1836.8 10308.2  1836.6 10313.8  1836.8 10322.1    1837 10326.5  1837.1
 10330.6  1836.7 10335.4  1836.3 10336.4  1836.4 10337.8  1836.7   10340    1837
 10341.8  1837.2 10345.6  1837.2 10349.9  1837.2 10354.5  1837.1 10358.5  1837.2
 10365.9  1837.3 10368.7  1837.4 10373.8  1837.5 10375.4  1837.5   10380  1837.6
```

```
   10384  1837.8 10387.3  1837.8 10388.2  1837.8 10389.9  1837.8 10392.6  1837.9
 10398.3  1838.2 10400.6  1838.3 10401.6  1838.1 10408.3  1837.1 10412.1  1837.2
 10422.4  1837.3 10436.7  1837.3 10437.5  1837.3 10438.3  1837.5 10444.7  1839.4
 10454.1    1840 10455.6  1840.5 10459.8  1840.9 10463.8  1840.3   10469  1839.6
 10472.7  1838.8 10477.7  1838.5 10477.9  1838.5 10485.7  1840.5   10494  1843.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9912.8    .065  9990.3    .035 10018.1    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9990.3 10018.1              245     245     245             .1       .3

CROSS SECTION          RIVER: W11.0000
REACH: R0700              RS: 3.356

INPUT
Description:
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9950  1836.3    9970    1834   10000  1832.8   100201833.027   10044  1833.3
   10118    1834   10162    1836   10180  1836.3   10200    1836   10230  1835.3
   10280    1836   10290    1838   10327    1840

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9950    .065    9970    .035   10020    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9970   10020              478     478     478             .1       .3

CROSS SECTION          RIVER: W11.0000
REACH: R0700              RS: 3.266

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9700.1  1836.3  9712.1  1836.5  9715.5  1836.6  9719.5  1836.6  9723.1  1836.8
  9734.8  1837.1  9739.6  1837.4    9746  1837.6  9754.7  1837.9    9761    1838
  9768.7  1838.2  9774.2  1838.4  9781.5  1838.4    9787  1838.5  9795.5  1838.8
  9802.4  1839.1  9810.9  1839.4  9816.1  1839.7    9821  1839.8  9830.7    1840
  9833.9    1840  9843.6  1840.2  9845.6  1840.1  9853.5  1839.8  9856.1  1839.6
  9860.5  1839.5  9863.8  1839.3  9868.7  1838.9  9872.3  1838.2  9877.5  1836.7
  9878.8  1836.6  9888.6  1835.8    9890  1835.7  9899.7  1835.4  9900.8  1835.3
  9911.4    1835  9911.9    1835  9924.4  1834.8  9925.7  1834.9  9928.5  1834.9
  9937.9  1834.6  9946.8    1834  9950.2  1833.9  9957.4  1833.3  9959.1  1833.2
  9965.6  1832.9  9968.2  1832.6  9974.2  1831.9    9977  1831.8    9981  1831.6
  9984.4  1829.5 9987.95 1827.27  9989.4  1826.7  9993.8  1826.9   10000  1826.9
 10009.9  1826.5 10010.7  1826.510012.05 1827.39 10019.2  1830.8 10022.4  1832.1
 10023.6  1832.6 10028.2  1833.8 10030.7  1834.8 10033.1  1835.5 10043.3  1838.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9700.1    .065 9987.95    .03510012.05    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9987.9510012.05              467     467     467             .1       .3
Left Levee      Station=  9843.6      Elevation=  1840.2

CROSS SECTION          RIVER: W11.0000
REACH: R0700              RS: 3.177
```

```
INPUT
Description:
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9956.7  1827.3  9969.6  1823.8    9990    1820   10000  1817.7 10015.7  1818.1
 10020.4  1818.3 10029.9  1818.5 10032.5  1818.6 10034.4  1818.3 10036.7    1818
 10041.8    1820 10057.2  1823.7 10059.3  1824.2 10060.4  1824.2 10070.2    1825
 10077.8  1825.2 10089.2  1825.6   10092  1827.6 10092.5  1827.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9956.7     .07    9990    .045 10032.5     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990 10032.5               144     144     144              .1       .3

CROSS SECTION          RIVER: W11.0000
REACH: R0700              RS: 3.150

INPUT
Description:
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9863    1830  9902.3  1820.2  9914.2  1820.4    9915  1820.4  9924.5  1819.7
  9926.8  1820.2  9932.5  1821.1  9940.4  1820.8    9947  1820.7  9972.9  1820.2
   99851817.479  9993.8  1815.5   10000    1814 10005.1    1816   100101817.973
   10020    1822 10025.6  1822.2 10036.6  1822.4   10038  1823.6 10038.4    1824
 10051.1  1828.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9863     .07    9985    .045   10010     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9985   10010              491     491     491              .1       .3
Left Levee      Station=  9932.5      Elevation=  1821.1

CROSS SECTION          RIVER: W11.0000
REACH: R0700              RS: 3.057

INPUT
Description:
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9878.1  1809.1  9880.6  1808.9  9896.8  1808.8    9897  1808.7    9906  1807.5
  9910.4  1807.8  9917.2  1808.7  9917.3  1808.7  9917.4  1808.7  9917.5  1808.7
  9935.6  1808.5  9949.7  1808.3  9951.3  1808.2  9953.3  1807.9  9960.1    1807
  9967.4  1807.5    9977  1808.4  9979.3  1808.1    99911806.453    9995 1805.89
  9999.9  1805.2   100001805.219 10006.6  1806.5 10008.1  1806.5 10015.1  1806.3
   10017  1806.4 10020.7  1806.4   100221806.524 10039.6  1808.2 10042.8  1808.5
 10046.1  1808.8 10046.4  1808.9 10071.1  1808.6 10079.1  1808.5 10083.1  1808.4
 10099.9  1808.3 10104.6  1808.4 10116.5  1808.3 10126.7  1808.2 10128.2  1807.7
 10131.8  1806.3 10136.4  1806.6 10145.4  1807.1 10148.9    1808 10150.8  1808.4
 10153.5    1809   10158  1809.4 10160.5  1809.5 10163.8  1809.6 10174.9  1811.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9878.1     .07    9991    .045   10022     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9991   10022              279     279     279              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
```

```
  9878.1    9940  1809.5

CROSS SECTION          RIVER: W11.0000
REACH: R0800              RS: 3.004

INPUT
Description: Q = 1107 cfs from C535 HEC-1 FCD 93-07
Station Elevation Data    num=      77
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9711  1802.6    9724  1802.2  9733.1  1801.8  9750.7  1801.2  9762.9  1800.9
  9764.9  1800.9  9770.5  1801.1  9802.3  1802.2    9810    1802  9839.2  1801.3
  9852.4  1800.7  9853.1  1800.7  9853.8  1800.5  9863.7    1798  9868.7  1799.6
  9870.5    1800  9875.6    1798  9877.2  1797.6  9880.7  1797.4  9891.9  1797.2
  9898.9  1797.2  9901.3  1797.3  9910.4  1800.7  9912.5  1801.5  9914.5  1801.1
  9921.4  1799.7  9926.9  1801.1  9929.3  1801.6  9933.7  1801.6  9942.8  1801.6
    9946  1800.8    9954  1799.7  9957.1  1800.6  9961.3  1800.9  9963.5  1801.3
  9966.1  1801.5  9970.6  1801.4  9975.5  1801.3  9980.5  1801.3  9984.8  1801.2
  9989.6    1801    99901800.911    9991 1800.69    99921800.469    99951799.805
   10000  1798.7   100071800.339   100081800.573   100101801.042 10011.1  1801.3
 10017.6  1801.7 10025.9  1801.9 10033.9    1802 10043.2  1800.8 10043.5  1800.8
 10048.4  1801.5   10049  1801.6 10049.1  1801.6 10065.4  1801.4 10074.3  1801.1
 10077.5  1800.9 10081.5  1801.7 10085.5  1802.6 10096.1  1802.9 10109.6  1803.4
 10112.9  1803.5 10125.2  1801.9 10128.3  1801.5 10133.4  1801.5 10139.7  1801.5
 10141.5  1801.8   10146  1802.5 10149.7  1803.1 10159.7  1802.9 10170.3  1802.8
 10171.2    1803 10171.7  1803.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9711     .07    9992    .045   10008     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9992   10008              233     233     233             .1       .3
Left Levee      Station=  9802.3      Elevation=  1802.2
Right Levee     Station= 10112.9      Elevation=  1803.5

CROSS SECTION          RIVER: W11.0000
REACH: R0800              RS: 2.960

INPUT
Description:
Station Elevation Data    num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9736  1796.5    9760  1796.4    9772    1794    9780  1793.4    9796    1794
    9806  1795.7    9815  1795.4    9826  1795.4    9837    1794    9850  1792.7
    9860    1794    9887  1794.9    9912    1794    9916  1793.8    9922    1794
    9943    1796    9960  1796.3    9978    1796    99941795.563   10000  1795.4
   10008 1795.56   10015  1795.7   10030    1796   10104    1798   10123  1798.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9736     .07    9994    .045   10008     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9994   10008              320     338     310             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9736    9806  1795.7
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
    9736  9729.2    1797

CROSS SECTION          RIVER: W11.0000
REACH: R0800              RS: 2.896
```

```
INPUT
Description: Existing Wash 11 Study Cross Section
Q = 940 cfs from D535R HEC-1
             FCD 93-07
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9913.9  1789.8  9931.9  1789.8  9945.9    1789  9960.4    1789  9977.3  1789.2
  9985.8  1789.2  9988.8  1787.4  9997.5  1787.5  9999.4    1787   10000  1787.1
 10003.8  1787.5 10010.6  1788.7 10017.9  1789.1 10029.1  1789.1 10040.1  1789.3
 10044.8  1789.3 10046.5  1788.1 10054.7  1788.4 10059.1  1788.7 10072.4  1788.8
 10085.7  1788.8   10087  1788.8 10099.1  1788.6 10104.1  1788.2 10110.2  1788.6
 10124.3  1788.7 10127.8  1787.6 10135.8  1787.4 10148.2  1787.7 10151.3  1788.5
 10162.1  1789.2 10171.2  1789.1 10181.6  1788.6 10184.4  1788.1 10190.3  1788.3
 10202.3  1788.8 10217.5  1788.1 10223.3  1788.6 10239.6  1788.8 10264.6  1789.1
   10269  1789.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9913.9     .07  9985.8    .045 10017.9     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9985.8 10017.9                 0       0       0             .1       .3

CROSS SECTION          RIVER: W11.0205
REACH: R0100              RS: 0.248

INPUT
Description: Q = 80 cfs left split at S11.0205
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9895    2026    9968  2025.3    9980  2025.6    9994 2025.04   10000  2024.8
   10006 2024.98   10040    2026

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9895    .065    9994     .04   10006    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9994   10006               218     218     218             .1       .3

CROSS SECTION          RIVER: W11.0205
REACH: R0100              RS: 0.207

INPUT
Description:
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9864.9  2019.7  9870.3  2019.3  9895.4  2019.2  9926.5  2019.7  9931.4  2019.7
  9936.1  2019.7  9958.1  2019.7  9967.4  2019.7  9968.6  2019.6  9975.8  2019.4
  9989.9  2018.8  9992.8    2019  9997.6  2018.5   10000  2018.3 10000.9  2018.5
   10003  2018.6 10008.4  2019.1 10009.2  2019.4   10021  2019.6 10042.1  2020.1
 10044.4  2020.2 10048.1    2020

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9864.9    .065  9992.8     .04 10008.4    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9992.8 10008.4               411     411     411             .1       .3
Left Levee      Station=  9967.4      Elevation=  2019.7

CROSS SECTION          RIVER: W11.0205
```

```
REACH: R0100                RS: 0.129

INPUT
Description:
Station Elevation Data     num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9907  2009.2  9918.4  2009.1  9936.1  2008.9  9968.7  2008.3  9972.7  2008.2
  9974.8  2008.2    9976  2008.2  9976.6  2008.3  9982.3  2008.3  9991.1  2008.6
  9991.5  2008.5   10000  2007.6 10005.4  2008.3 10007.1  2008.5 10014.1  2008.6
 10019.8  2008.8 10029.6  2008.3 10040.3  2008.3 10045.1  2008.5 10046.5  2008.6
 10052.8  2008.9   10057  2008.6 10057.2  2008.6 10059.9  2008.8 10064.6  2009.2

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9907    .065  9991.5     .04 10007.1    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9991.5 10007.1               516     516     516             .1       .3
Right Levee     Station= 10052.8      Elevation=  2008.9

CROSS SECTION           RIVER: W11.0205
REACH: R0100                RS: 0.031

INPUT
Description:
Station Elevation Data     num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9942.5  1995.2  9950.6  1994.8  9986.4  1994.6  9989.1  1994.6  9991.2  1994.3
  9997.7  1993.1   10000  1992.8 10002.5  1993.3 10006.6  1993.7 10010.5  1994.1
 10015.1  1994.5 10019.7  1994.5 10033.1  1994.1 10044.8  1993.8 10047.3  1993.6
 10055.7  1993.1 10060.9  1993.8 10063.8  1994.2 10066.7  1994.4 10076.7  1994.9
 10078.5    1995

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9942.5    .065  9991.2     .04 10006.6    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9991.2 10006.6                 0       0       0             .1       .3

CROSS SECTION           RIVER: W12.0000
REACH: R0100                RS: 4.380

INPUT
Description: Q = 251 cfs from D534L HEC-1 FCD 93-07
Station Elevation Data     num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9814.8  2033.3  9852.6  2031.7  9855.1  2031.6  9859.1  2031.7  9869.6  2032.3
  9882.4  2032.9  9888.6  2032.7  9903.3  2032.1  9918.9  2031.6  9921.4  2031.2
    9925  2030.5  9929.3  2031.1  9930.5  2031.3    9958  2031.5  9969.5  2031.6
  9969.8  2031.5  9975.2    2030  9975.7  2030.2  9981.9  2031.8 9987.95 2031.42
  9992.7  2031.1  9996.5  2030.9  9997.1    2031   10000  2030.9 10002.4  2030.6
 10003.2  2030.7 10006.2  2031.110009.64 2031.43 10016.5    2032 10019.1  2032.1
 10029.5  2032.4 10035.8  2031.8 10038.3  2031.6 10060.2  2032.1 10061.4  2032.2
 10062.6  2032.1 10082.1  2031.8 10091.6    2032 10094.4    2032 10096.3  2032.1

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9814.8    .065 9987.95     .0410009.64    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9987.9510009.64               482     482     450             .1       .3
Right Levee     Station= 10061.4      Elevation=  2032.2
```

```
CROSS SECTION          RIVER: W12.0000
REACH: R0100              RS: 4.288

INPUT
Description:
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9864  2019.3  9866.9  2019.2  9869.4    2019    9870    2019  9872.7    2019
  9875.2  2018.6    9885  2018.6  9888.5  2018.4  9892.8  2018.3  9898.8  2018.2
  9902.5  2018.1  9907.4  2017.9    9914  2017.7  9914.1  2017.7  9914.6  2017.7
  9930.2  2017.1  9933.2  2017.1  9938.2  2017.3  9943.7  2017.4  9947.9  2017.1
  9949.2  2017.2  9957.9  2017.8  9964.5  2018.3  9965.2  2018.4  9965.8  2018.4
  9984.6  2017.5    9986  2017.5  9986.5  2017.4    9987  2017.4  9990.5  2017.3
  9991.2  2017.2    9995  2017.2   10000  2017.1 10007.2  2017.2 10007.8  2017.2
 10013.9    2018 10014.1    2018 10014.7    2018 10029.9  2018.4 10031.2  2018.2
   10036    2018 10041.3  2017.7 10042.4  2017.8 10045.1  2017.6 10051.2  2018.2
 10056.2  2018.6 10059.4  2018.9 10069.9    2019 10080.8  2019.3 10099.8  2019.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9864    .065    9987     .04 10013.9    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9987 10013.9              371     371     380             .1       .3

CROSS SECTION          RIVER: W12.0000
REACH: R0100              RS: 4.218

INPUT
Description:
Station Elevation Data    num=      24
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9914  2010.5  9939.9  2009.5  9951.7    2009  9962.8    2009  9965.4    2009
  9970.4    2009  9978.3    2009  9983.4  2008.9  9983.9  2008.9  9989.8  2006.4
  9990.6  2006.1  9992.9  2006.1   10000  2006.1 10004.3  2006.1   10009  2006.2
 10025.4  2007.8 10029.5  2008.2 10050.4  2008.7 10062.4  2008.8   10083  2008.5
 10084.9  2008.5 10098.9  2008.3 10112.2  2008.4 10140.6  2009.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9914    .065  9989.8     .04   10009    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9989.8   10009              543     543     543             .1       .3

CROSS SECTION          RIVER: W12.0000
REACH: R0100              RS: 4.115

INPUT
Description:
Station Elevation Data    num=      26
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9802.3  1995.4  9809.2  1995.3    9836    1994  9850.9  1993.6  9852.3  1993.6
  9852.4  1993.6  9861.8    1994  9886.1  1994.8  9886.2  1994.8  9886.5  1994.8
  9920.1  1993.2  9923.8  1993.2  9928.2  1993.2  9933.7  1993.2  9943.3  1993.5
  9948.9  1993.6  9956.3  1993.7  9964.8  1993.5  9983.7  1993.6  9990.9  1993.5
   10000  1993.4 10009.2  1993.5 10012.8  1993.4   100141993.695 10019.3    1995
 10020.1  1995.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9802.3    .065  9983.7     .04   10014    .065
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9983.7   10014              0       0       0             .1        .3
Left Levee      Station=  9886.5      Elevation=  1994.8

CROSS SECTION          RIVER: W12.0000
REACH: R0200              RS: 4.084

INPUT
Description: Q = 346 cfs from C507 HEC-1 FCD 93-07
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9932  1990.5    9950    1990    9960  1989.6    9980  1989.5   10000  1989.5
   100051989.559   10017  1989.7   10047    1989   10083  1988.8   10107  1987.9
   10125    1988   10146  1989.4   10197    1990   10206  1990.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9932    .065    9980     .04   10005    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9980   10005              290     290     265             .1        .3

CROSS SECTION          RIVER: W12.0000
REACH: R0200              RS: 4.029

INPUT
Description:
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9840.1  1982.7  9860.3  1981.9  9875.2  1981.3  9882.4  1981.7  9889.3  1982.1
  9893.6  1982.4  9910.8  1981.7  9920.2  1981.4  9923.5  1981.6    9941  1982.3
  9951.7  1981.5  9974.4  1981.2  9978.7  1981.2  9982.8    1981  9989.3  1980.8
  9997.8  1981.1  9998.2  1981.1  9999.2  1981.1 10002.7  1981.4 10009.3  1981.7
 10011.3  1981.9 10013.1    1982   10014    1982 10028.9  1982.5 10034.7  1982.8
 10041.4    1983 10047.3    1983 10068.3  1983.3 10077.4  1983.5 10078.7  1983.6
 10086.1  1983.9 10093.1    1984

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9840.1    .065  9951.7     .04 10009.3    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9951.7 10009.3              346     346     346             .1        .3
Left Levee      Station=    9941      Elevation=  1982.3

CROSS SECTION          RIVER: W12.0000
REACH: R0200              RS: 3.963

INPUT
Description:
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9888.7  1975.5  9904.1  1975.5    9915  1975.3  9928.9  1974.8  9945.7  1974.2
  9957.2  1972.5  9957.8  1972.4    9968  1973.3  9968.4  1973.4  9968.7  1973.4
  9969.2  1973.4  9979.8  1973.1  9984.3  1972.7  9986.3  1972.6  9993.9  1972.3
   10000    1972   10005  1972.1 10011.8  1972.3 10016.1  1973.7   10019  1974.6
 10023.6  1974.7 10029.9  1974.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9888.7    .065  9984.3     .04 10016.1    .065
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9984.3 10016.1              288     288     288             .1       .3

CROSS SECTION          RIVER: W12.0000
REACH: R0200              RS: 3.909

INPUT
Description: XS upstream of split S12.0100
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9952    1968    9980    1966    9985 1965.75   10000    1965   10027  1965.3
   10045    1964   10062  1966.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9952    .065    9985     .04   10027    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9985   10027                 0       0       0             .1       .3

CROSS SECTION          RIVER: W12.0000
REACH: R0300              RS: 3.890

INPUT
Description: Q = 180 cfs left split at S12.0100
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9915  1965.2    9933    1964    99901962.639   10000  1962.4   10010 1962.81
   10039    1964   10044  1964.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9915    .065    9990     .04   10010    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10010               177     177     177             .1       .3

CROSS SECTION          RIVER: W12.0000
REACH: R0300              RS: 3.856

INPUT
Description:
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9913.3  1961.8  9933.5  1960.1  9946.8  1958.9  9958.2  1958.4  9985.2  1957.5
    9987  1957.6   10000    195710011.33 1957.65 10019.1  1958.1 10023.9  1958.2
 10035.6  1958.6 10050.6  1959.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9913.3    .065    9987     .0410011.33    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          998710011.33              258     258     258             .1       .3

CROSS SECTION          RIVER: W12.0000
REACH: R0300              RS: 3.807

INPUT
Description:
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9859.3  1954.6  9872.3  1954.3  9903.6  1952.1  9915.2  1951.2  9925.7  1951.2
```

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  9943.1  1951.2  9961.8  1951.2  9967.2    1951  9980.1  1950.5  9992.2  1950.2
  9996.4    1950   10000  1949.9 10012.6    1951 10015.1  1951.2 10020.1  1950.9
 10032.1  1950.2 10043.4  1951.2 10067.5  1953.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9859.3    .065  9992.2     .04 10012.6    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9992.2 10012.6              401     401     401             .1       .3

CROSS SECTION          RIVER: W12.0000
REACH: R0300              RS: 3.731

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9776.9  1942.9  9783.5  1942.8  9785.6  1942.7  9806.2  1940.8  9815.6    1940
  9823.9  1940.9    9825    1941  9825.7    1941  9826.7    1941  9843.8  1940.5
  9857.5  1940.5  9863.8  1940.4  9871.5  1940.4  9884.1  1939.9  9890.3  1939.7
  9900.3  1939.3  9910.6  1938.9  9912.9  1938.8  9916.1  1938.8  9920.7    1939
  9930.6  1939.8  9942.1  1940.3  9948.8  1940.6  9954.9    1941  9967.8  1940.4
  9975.5    1940  9987.1  1939.3  9990.4  1939.1  9991.5    1939  9999.9  1938.2
 10003.4  1938.4 10006.7  1938.7 10016.5  1938.9 10031.8  1939.2 10041.7  1939.5
 10048.3  1939.6   10059  1939.8 10068.2  1939.5 10069.5  1939.5 10072.7  1939.6
 10076.6  1939.9   10083    1940 10095.2  1940.4 10105.1    1941 10110.7  1941.4
   10120  1942.4 10132.7  1943.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9776.9     .07  9991.5    .045 10016.5     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9991.5 10016.5              348     348     348             .1       .3
Left Levee      Station=  9954.9      Elevation=    1941

CROSS SECTION          RIVER: W12.0000
REACH: R0300              RS: 3.665

INPUT
Description:
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9933.9  1930.8  9942.5  1930.8  9946.6  1930.8  9951.4  1930.8  9958.3  1930.6
    9980  1929.8  9983.1  1929.7    9990 1929.578   10000  1929.4 10004.7  1929.2
 10009.5  1929.4 10018.6  1929.5 10030.2  1929.4 10033.6  1929.4 10053.5    1929
 10073.1  1928.5 10085.1  1928.2 10090.6    1928 10095.4  1927.9   10101  1927.9
 10103.3    1928 10104.8    1928   10111  1928.2 10112.3    1929   10114  1929.2
 10124.1  1930.3   10138  1930.6 10138.5  1930.6 10156.1  1932.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9933.9    .065    9990     .04 10018.6    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990 10018.6              270     270     270             .1       .3
Right Levee     Station= 10018.6      Elevation=  1929.5

CROSS SECTION          RIVER: W12.0000
REACH: R0300              RS: 3.614

INPUT
Description:
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9886  1923.4    9919  1922.7    9946  1922.7    9962    1922    9967  1921.7
    9976    1922    9987  1922.3    9996    1922   10000  1921.6   100151921.916
   10019    1922   10057    1924   10068  1924.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9886    .065    9996     .04   10015    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9996   10015              250     250     250             .1       .3
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CROSS SECTION          RIVER: W12.0000
REACH: R0300              RS: 3.567

INPUT
Description:
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9914.9  1916.5    9928  1916.5  9941.7  1916.6  9950.7  1916.6  9955.3  1916.7
  9958.1  1916.6  9979.1  1915.8  9980.9  1915.6  9987.1  1915.6   10000    1916
 10010.5  1915.7 10017.6  1915.7   10021  1916.1 10023.9  1916.5 10039.1  1916.6
 10045.5  1916.6 10054.8  1916.8 10062.1  1917.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9914.9    .065  9979.1     .04   10021    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9979.1   10021              287     287     287             .1       .3
Left Levee      Station=  9955.3      Elevation=  1916.7

CROSS SECTION          RIVER: W12.0000
REACH: R0300              RS: 3.513

INPUT
Description:
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9893.6  1910.6  9894.6  1910.6  9914.4  1909.7  9932.3  1909.3  9933.3  1909.3
  9934.2  1909.2  9942.9  1908.7  9952.3  1908.9    9958  1909.2  9961.3  1909.3
  9977.4  1909.2  9985.1    1909 9986.75 1908.86  9989.1  1908.7  9992.3  1908.4
 10000.1  1908.3 10009.3  1908.4 10011.4  1908.610013.74 1908.82 10017.1  1909.1
 10026.4  1909.6 10026.6  1909.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9893.6    .065 9986.75    .04510013.74    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9986.7510013.74              313     313     313             .1       .3

CROSS SECTION          RIVER: W12.0000
REACH: R0300              RS: 3.453

INPUT
Description:
Station Elevation Data    num=      11
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9947.8  1901.8  9972.3  1901.5  9984.5  1901.6  9989.4  1900.4  9991.4  1899.8
  9995.7    1900 10000.1  1899.9 10002.6  1900.1 10010.1  1900.2 10015.9  1901.1
   10019  1901.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9947.8    .065  9989.4    .045 10010.1    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9989.4 10010.1              271     271     271             .1       .3

CROSS SECTION          RIVER: W12.0000
REACH: R0300              RS: 3.402

INPUT
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```
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9867.5    1895  9869.1  1894.9  9876.1  1894.6  9882.3  1894.4  9889.4  1894.3
  9902.4  1893.8  9907.5  1893.6  9913.7  1892.5  9916.1    1892  9922.6    1893
  9924.4  1893.4  9926.6  1893.4  9938.8  1893.2  9941.6  1893.1  9951.7  1892.6
  9958.7  1891.4  9959.8  1891.2  9961.2  1891.4  9967.3  1892.5  9969.4  1892.8
  9969.7  1892.9  9970.5  1892.9  9970.6  1892.9  9987.5    1893  9991.6    1893
  9991.8  1892.9 9991.87 1892.81  9994.5    1892  9995.1  1891.8  9995.8  1891.8
   10000  1892.1 10002.1  1891.9 10003.6  1891.9 10006.7  1892.110009.04 1892.44
 10012.2  1892.8 10018.9  1893.7 10037.9  1893.4 10046.9  1893.1 10050.2    1893
 10050.5    1893   10051  1893.1 10060.2  1893.9   10071  1894.1   10079  1894.1
 10119.6  1894.3 10126.5  1894.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9867.5    .065 9991.87    .04510009.04    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9991.8710009.04              430     430     430              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
  9867.5  9991.6    1894

CROSS SECTION          RIVER: W12.0000
REACH: R0300              RS: 3.320

INPUT
Description: Q = 683 cfs from C508 HEC-1 FCD 93-07
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9814.6  1884.5  9819.7  1884.2  9824.6  1883.9  9836.8  1883.4  9847.4  1882.9
  9850.6  1882.7  9860.4  1882.1  9868.5  1881.8  9872.6  1881.8  9885.9  1881.7
  9890.5  1881.7  9903.5  1881.8  9904.5  1881.8  9907.1 1881.71  9907.4  1881.7
  9910.11881.492  9913.9  1881.2  9918.3  1880.7  9919.1  1880.6  9922.9  1881.4
  9923.1  1881.4  9924.4  1881.4  9929.11881.552  9936.8  1881.8  9953.6    1882
  9959.3    1882  9981.1  1881.9  9981.6  1881.9  9981.8  1881.9  9982.6  1881.7
    99831881.613  9986.3  1880.9  9988.1  1880.9  9996.2  1881.3   10000    1881
 10000.8    1881   10004  1881.5   100081882.181 10008.7  1882.3 10026.2  1882.4
 10038.8  1882.4 10047.4  1882.4   10078    1882   10092  1880.7   10102  1880.9
   10115  1880.3   10128  1881.3   10146    1882   10176  1882.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9814.6    .065    9983    .045   10004    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9983   10004              312     312     290              .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
  9814.6    9940    1883   10150   10176    1883

CROSS SECTION          RIVER: W12.0000
REACH: R0300              RS: 3.261

INPUT
Description: XS upstream of split S12.0300
Station Elevation Data    num=      96
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9684.7  1875.7  9697.8  1875.6  9701.8  1875.5    9710  1875.2  9718.5  1874.8
  9725.3  1874.5  9735.7  1874.1  9746.8  1873.8  9754.9  1873.2  9759.6  1872.9
  9762.7  1872.9  9769.2  1872.9  9780.2  1873.1  9792.5  1873.1  9797.5  1873.1
    9807  1873.4  9811.7  1873.6    9838  1875.1  9838.2  1875.1  9841.1  1874.9
    9860  1873.7  9880.2  1871.3  9881.3  1871.2  9882.9  1871.7  9886.4  1872.6
  9895.2  1872.5  9900.6  1872.3  9903.2    1872  9905.1  1871.8  9907.2    1872
  9909.6    1872  9919.9  1872.6  9923.1  1872.8  9926.4  1872.9  9931.6  1873.2
  9938.1  1873.3  9947.3  1873.5  9948.6  1873.5  9951.3  1873.4  9965.3  1873.5
  9985.5  1873.6  9991.9  1873.1  9993.1    1873  9994.5  1873.1   10000  1873.3
 10002.7  1873.2 10004.6  1873.3 10008.6  1873.9   10009  1873.9 10011.9    1874
 10035.9    1874 10059.4    1874 10060.5    1874 10075.1  1873.4 10078.2  1873.2
 10082.1  1873.6 10088.6  1874.2 10106.8    1874 10127.2  1873.6 10130.1  1873.5
```

```
 10135.6  1871.8 10136.5  1871.5 10141.5  1873.1 10142.4  1873.3 10148.6  1873.1
 10165.7    1873   10167  1872.9 10167.6  1872.7 10171.6  1871.4 10179.2  1873.7
 10191.6  1874.1   10208  1874.4 10209.1  1874.4 10219.4  1874.6 10232.7  1873.9
 10240.2  1873.6 10247.7  1873.1 10257.5  1872.7   10259  1872.6 10259.6  1872.6
   10267  1872.6 10281.8  1873.2 10281.9  1873.2 10301.8  1870.5 10309.2  1871.7
 10312.8  1872.2 10314.3  1872.3 10325.2    1873 10329.3  1872.8 10335.6  1872.9
 10337.9  1872.8 10339.4  1872.8 10345.2  1873.2 10356.7  1874.2 10360.7  1874.5
 10363.9  1874.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9684.7    .065  9991.9    .045 10004.6    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9991.9 10004.6                 0       0       0             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
  9684.7    9935    1875
Left Levee      Station=  9838.2      Elevation=  1875.1
Right Levee     Station= 10219.4      Elevation=  1874.6

CROSS SECTION          RIVER: W12.0000
REACH: R0400              RS: 3.209

INPUT
Description: Q = 380 cfs from D508L HEC-1 FCD 93-07
Station Elevation Data    num=      10
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9806  1869.1    9850    1868    9886    1867    9950  1867.4    99901866.183
    9996    1866   10000  1865.9   10006    1866   100101866.108   10080    1868

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9806    .065    9990    .045   10010    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10010                216     216     216             .1       .3

CROSS SECTION          RIVER: W12.0000
REACH: R0400              RS: 3.168

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9736  1862.2  9744.4  1862.2    9760  1862.1  9760.1  1862.1  9760.8  1862.1
  9775.4  1861.6  9778.3  1861.5  9785.2  1861.7  9787.1  1861.7    9793  1861.8
  9805.7  1861.8  9808.8  1861.8  9811.2  1861.6  9819.4  1861.2  9823.5    1861
  9837.1  1861.6  9841.5  1861.9  9864.6  1860.7    9870  1860.6    9902    1861
    9919  1861.3  9930.4  1861.3    9950  1861.5  9976.6  1861.4    9980  1861.4
    9985  1861.4  9994.7  1861.4   10000  1861.3   10007  1861.4 10007.8  1861.3
   100111861.494 10014.4  1861.7 10017.9  1861.9   10018  1861.9 10018.1  1861.8
 10027.8  1861.7 10031.9  1861.6 10033.7  1861.8   10035  1861.9 10040.7  1862.2
 10043.9  1862.4 10049.4  1862.5   10058    1863

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9736    .065    9980    .045   10011    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9980   10011                370     372     360             .1       .3
Left Levee      Station=  9841.5      Elevation=  1861.9
Right Levee     Station= 10017.9      Elevation=  1861.9
```

```
CROSS SECTION          RIVER: W12.0000
REACH: R0400              RS: 3.098

INPUT
Description:
Station Elevation Data    num=      58
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9709.2  1853.1  9712.5    1853  9713.5  1852.9  9739.4    1852  9752.3  1851.7
  9757.1  1851.6  9767.1    1851    9772  1850.8  9780.8  1850.3  9781.8  1850.3
  9793.5  1850.8  9793.8  1850.8  9793.9  1850.8  9813.6  1851.2  9817.4  1851.3
  9823.6  1851.1  9840.6  1850.7  9862.9  1850.3  9869.1  1850.4  9892.5  1851.1
    9916  1851.7  9918.9  1851.8  9930.6  1851.6  9944.3    1851  9950.6  1850.8
  9953.1  1850.6  9954.4  1850.7  9958.1  1851.1  9968.1    1851  9977.5    1851
  9984.9  1850.8  9996.1  1850.3   10000  1850.2   100151850.963 10017.7  1851.1
 10023.9  1851.3 10045.6  1851.1 10055.4  1851.1 10070.2  1850.7 10079.3  1850.4
 10081.1  1850.5   10084  1850.5 10094.3  1850.7 10131.8  1851.6 10137.8  1851.8
 10163.3  1852.4 10170.5  1852.4 10175.6  1852.5 10178.9  1852.1 10182.8  1851.9
 10188.6    1852 10191.3  1852.2 10192.9  1852.3 10199.2  1852.5 10208.7    1853
 10210.1    1853 10214.9  1853.2 10224.8  1853.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9709.2    .065  9984.9    .045   10015    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9984.9   10015              500     511     500             .1       .3
Left Levee      Station=  9918.9      Elevation=  1851.8
Right Levee     Station= 10175.6      Elevation=  1852.5

CROSS SECTION          RIVER: W12.0000
REACH: R0400              RS: 3.001

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9802.4  1839.9  9813.5  1839.7    9838  1838.6  9845.8  1838.4  9873.5    1837
    9874    1837  9874.4    1837  9877.4  1837.1    9893  1837.6  9905.4  1837.8
  9917.9  1838.3    9918  1838.3  9918.4  1838.4  9926.3  1838.1  9926.5  1838.1
  9936.7  1838.1  9948.5    1838  9980.5  1837.4  9986.7  1837.2 10000.1  1837.2
   100071837.473 10010.2  1837.6 10029.5  1837.4 10033.7  1837.3 10038.2  1836.9
 10040.8    1837 10045.6  1837.6 10045.7  1837.6 10085.2  1838.4 10095.8  1838.7
 10096.9  1838.6 10105.3  1838.2 10109.7  1837.9 10134.6  1838.1 10158.5  1838.5
 10172.9    1839 10179.7  1839.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9802.4    .065  9980.5    .045   10007    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9980.5   10007                0       0       0             .1       .3
Left Levee      Station=  9918.4      Elevation=  1838.4
Right Levee     Station= 10095.8      Elevation=  1838.7
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
  9802.4  9802.4  1839.9

CROSS SECTION          RIVER: W12.0000
REACH: R0500              RS: 2.964

INPUT
Description: Q = 75 cfs left split at S12.0400
```

```
Station Elevation Data    num=      11
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9850  1833.4    9880    1832    9888  1831.8    9898    1832    9920  1832.9
    9954  1832.8    9980  1832.9    99871832.655   10000  1832.2   100111832.658
   10012  1832.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9850    .065    9987    .045   10011    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9987   10011              260     271     255             .1       .3

CROSS SECTION          RIVER: W12.0000
REACH: R0500              RS: 2.912

INPUT
Description:
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9901.8    1827  9903.6  1826.9  9926.8  1825.6  9928.1  1825.5  9931.5  1825.4
  9949.4  1825.1  9952.9    1825  9954.8  1825.4  9956.1  1825.3  9958.5  1824.9
  9958.6  1824.8  9958.7  1824.8  9966.7  1825.7  9974.8  1825.6    99751825.598
  9984.3  1825.5    9992  1825.5 10000.3  1825.4   100031825.573 10008.1  1825.9
 10009.7    1826 10013.5    1826 10024.3    1826   10033  1826.1   10071  1825.6
   10132  1825.6   10161    1826

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9901.8    .055    9975    .035   10003    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9975   10003              255     263     263             .1       .3
Right Levee     Station=   10033      Elevation=  1826.1

CROSS SECTION          RIVER: W12.0000
REACH: R0500              RS: 2.862

INPUT
Description:
Station Elevation Data    num=      10
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9872    1818    9935    1818    99851817.384    99951817.261   10000  1817.2
   10008  1817.5   10023  1816.6   10053  1817.6   10081  1816.1   10114    1818

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9872    .055    9985    .035   10008    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9985   10008              341     341     341             .1       .3
Right Levee     Station=   10053      Elevation=  1817.6

CROSS SECTION          RIVER: W12.0000
REACH: R0500              RS: 2.798

INPUT
Description: Q = 90 cfs increase due to inflow from W12.0400 XS 0.103
Station Elevation Data    num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9879.5    1809  9885.5  1808.9    9896  1808.9  9921.3  1808.8    9925  1808.9
  9932.9  1808.8    9946  1808.8    9987    1808    99901807.583  9991.5  1807.5
  9999.2  1807.3   10000  1807.3 10001.2  1807.3 10007.1  1807.6 10010.3  1807.6
```

```
 10016.5  1807.6 10017.1  1807.6 10017.6  1807.6 10026.1  1807.9 10038.4    1808
 10053.4  1808.7 10057.9  1808.7 10069.6  1808.9 10081.3  1809.3 10086.1  1809.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9879.5    .055    9990    .035 10007.1    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990 10007.1              245     253     245             .1       .3

CROSS SECTION          RIVER: W12.0000
REACH: R0500              RS: 2.750

INPUT
Description:
Station Elevation Data    num=      56
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9826.6  1802.3  9840.8  1801.9  9852.5    1801  9862.6  1801.1  9864.7    1801
  9868.2  1801.1  9873.1  1801.2  9874.9  1801.1  9879.1    1801  9889.9  1800.9
  9891.7    1801  9904.2  1801.4  9910.9  1801.3  9917.3  1801.3  9926.9  1801.5
  9932.5  1801.7  9942.2    1802  9951.1  1801.8  9956.8  1801.6    9967  1801.3
  9973.6    1801  9977.1  1800.9  9980.8  1801.1    9987  1801.2  9989.1  1801.2
    9992    1801  9995.7  1800.9   10000  1800.9 10007.1    1801 10016.9  1800.8
   10018  1800.8 10022.5    1801 10053.7  1802.3 10061.9  1802.4 10063.9  1802.5
 10068.5  1802.2 10078.6  1802.4 10080.5  1802.4 10082.2  1802.3 10083.6  1802.2
 10098.6  1800.8   10111  1801.2 10117.6  1801.5 10127.7  1801.1 10129.4    1801
   10132  1801.1 10134.8  1801.3 10136.8  1801.3 10143.6  1801.5 10146.6  1801.5
   10147  1801.5 10150.6  1801.6 10160.4  1801.6 10166.5  1801.8 10174.3  1802.3
 10182.6  1802.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9826.6    .055    9992    .035 10022.5    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9992 10022.5              515     515     515             .1       .3
Left Levee      Station=  9942.2      Elevation=    1802
Right Levee     Station= 10063.9      Elevation=  1802.5

CROSS SECTION          RIVER: W12.0000
REACH: R0500              RS: 2.652

INPUT
Description: Q = 147 cfs increase from flow from W12.0300
from XS2.494
Station Elevation Data    num=      17
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9846  1788.6    9896  1788.6    9946  1788.8    9980    1788    9990    1787
    9995  1786.5   10000  1786.5   10007  1786.5   10012 1787.25   10017    1788
   10026  1788.4   10049  1788.7   10082    1788   10110    1790   10130  1790.6
   10156  1789.8   10177  1790.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9846    .065    9980    .045   10017    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9980   10017              258     258     258             .1       .3
Left Levee      Station=    9946      Elevation=  1788.8
Right Levee     Station=   10049      Elevation=  1788.7

CROSS SECTION          RIVER: W12.0000
REACH: R0500              RS: 2.603
```

```
INPUT
Description:
Station Elevation Data     num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9912  1782.5    9951  1782.4    9984    1782    9993    1781   10000  1780.4
   10008    1781   10013  1781.7   10033    1782   10048  1782.7   10083  1782.5
   10103    1783   10118    1782   10135  1780.4   10146    1782   10168  1783.3

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9912    .053    9984    .035   10013    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9984   10013              380     385     380             .1       .3
Right Levee     Station=   10103      Elevation=    1783

CROSS SECTION          RIVER: W12.0000
REACH: R0500              RS: 2.531

INPUT
Description:
Station Elevation Data     num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9826  1772.7    9846    1772    9867  1770.4    9891    1772    9940  1772.6
    9961    1772    9986    1772    9993  1771.2   10000  1770.7   10007  1771.2
   10015    1772   10042  1773.5   10078    1772   10114    1772   10152  1773.8

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9826    .055    9986    .035   10015    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9986   10015              284     288     280             .1       .3
Left Levee      Station=    9940      Elevation=  1772.6
Right Levee     Station=   10042      Elevation=  1773.5

CROSS SECTION          RIVER: W12.0000
REACH: R0500              RS: 2.476

INPUT
Description:
Station Elevation Data     num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9832    1766    9865    1764    9892  1763.3    9933  1762.5    9942    1764
    9965  1764.6    9980    1764    9988    1763   10000    1763   100101764.091
   10022  1765.4   10043    1764   10119  1764.3   10134    1764   10151    1766
   10163  1766.5

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9832    .055    9980    .035   10010    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9980   10010              461     461     461             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9832    9965    1765
Right Levee     Station=   10022      Elevation=  1765.4

CROSS SECTION          RIVER: W12.0000
REACH: R0500              RS: 2.389
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```
INPUT
Description:
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9813    1754    9877  1753.7    9923  1752.6    9938    1754    9949  1754.3
    9958    1754    9976    1752    9993  1751.6   10000  1751.6   10007    1752
   10069  1753.8   10126  1752.2   10148    1752   10161  1753.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9813    .055    9976    .035   10007    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9976   10007              490     499     499             .1       .3
Left Levee      Station=    9949      Elevation=  1754.3
Right Levee     Station=   10069      Elevation=  1753.8

CROSS SECTION          RIVER: W12.0000
REACH: R0500              RS: 2.294

INPUT
Description:
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9878  1743.3    9947  1742.4    9980 1740.795    9984  1740.6   10000  1740.6
   10004 1740.778   10009    1741   10017    1742   10036  1742.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9878    .055    9980    .035   10004    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9980   10004              281     281     281             .1       .3

CROSS SECTION          RIVER: W12.0000
REACH: R0500              RS: 2.241

INPUT
Description:
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9737  1735.7    9794  1734.5    9812  1734.3    9832  1735.3    9846  1735.1
    9896  1735.5    9940  1735.5    9969  1735.4    9988 1734.848    9996 1734.616
   10000  1734.5 10005.711 734.678   10012 1734.875   10048    1736   10076  1736.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9737    .053    9988    .035   10012    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9988   10012              252     252     252             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9737    9832  1736.3

CROSS SECTION          RIVER: W12.0000
REACH: R0500              RS: 2.193

INPUT
Description:
Station Elevation Data    num=      23
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9614  1730.3    9627    1730    9661    1728    9676    1727    9694    1728
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    9724    1728    9762  1728.9    9825  1728.5    9844    1728    9849  1727.7
    9859    1728    9900    1728    9920    1729    9950  1729.1    9974  1729.6
    9990  1729.7   10000    1729   10007  1729.7   10010    1730   10019  1730.2
   10026    1730   10039  1729.7   10059  1729.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9614    .055    9990    .035   10007    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10007               208     214     208             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9614    9762    1730
Left Levee      Station=    9990      Elevation=  1729.7
Right Levee     Station=   10019      Elevation=  1730.2

CROSS SECTION          RIVER: W12.0000
REACH: R0500              RS: 2.153

INPUT
Description:
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9714    1724    9803  1722.6    9823  1722.7    9880  1722.8    9898  1722.6
    9956  1723.7    9978  1723.2    9986  1723.5    99951723.379   10000  1723.2
   100051723.564   10011    1724   10022  1724.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9714    .055    9986    .035   10005    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9986   10005                 0       0       0             .1       .3
Left Levee      Station=    9956      Elevation=  1723.7

CROSS SECTION          RIVER: W12.0000
REACH: R0600              RS: 2.112

INPUT
Description: Q = 380 cfs from D508L HEC-1 FCD 93-07
Station Elevation Data    num=      17
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9798  1719.6    9818  1719.4    9842  1718.4    9854  1718.6    9865  1717.7
    9880  1718.4    9987  1718.9   10000  1718.2   100101718.557   10014  1718.7
   10051    1718   10066  1718.7   10116  1718.5   10138    1718   10152    1718
   10181    1720   10190 1724.87

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9798    .055    9987    .035   10014    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9987   10014               181     181     181             .1       .3
Right Levee     Station=   10190      Elevation= 1724.87

CROSS SECTION          RIVER: W12.0000
REACH: R0600              RS: 2.078

INPUT
Description: XS upstream of split S12.0500
Station Elevation Data    num=      23
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
    9834  1715.6    9866    1714    9902  1713.5    9916    1714    9932  1714.4
    9971    1714    99801713.876    99951713.669   10000  1713.6   100051713.743
   10014    1714   10036  1714.3   10046  1714.3   10061  1714.3   10071    1714
   10078  1713.3   10088  1713.3   10099    1713   10114    1714   10130  1714.7
   10145  1714.2   10156    1716 10159.5    1717

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9834    .055    9980    .035   10014    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9980   10014                 0       0       0             .1       .3

CROSS SECTION          RIVER: W12.0000
REACH: R0700              RS: 2.045

INPUT
Description: Q = 273 cfs left split at S12.0500
Station Elevation Data    num=      10
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9855  1710.3    9864    1710    9895  1708.9    9921  1709.2    9980  1709.4
    99951709.325   10000  1709.3   100031709.476   10012    1710   10021  1710.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9855    .055    9980    .035   10003    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9980   10003                203     203     203             .1       .3

CROSS SECTION          RIVER: W12.0000
REACH: R0700              RS: 2.007

INPUT
Description:
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9772  1705.7    9796  1704.8    9821    1704    9851    1704    9866  1703.6
    9893  1704.5    9934 1703.52    9939  1703.4    99441703.547    99511703.753
    9956  1703.9    99611704.088    9980  1704.8    99851704.675    9990 1704.55
    99951704.425   10000  1704.3   100041704.552   100051704.615   100071704.741
   10027    1706

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9772    .055    9990    .035   10004    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10004                335     327     327             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9772    9851    1706
Left Levee      Station=    9893      Elevation=  1704.5

CROSS SECTION          RIVER: W12.0000
REACH: R0700              RS: 1.945

INPUT
Description:
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9745  1700.2    9755    1700    9787    1698    9813  1697.2    9823  1697.2
    9872  1697.7    9883  1697.7    9907  1697.3    9956  1697.5    9985  1697.6
```

```
   10000  1697.3   10013  1697.9   10046  1698.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9745     .06    9985     .04   10013     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9985   10013              210     205     205             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9745    9830    1700

CROSS SECTION          RIVER: W12.0000
REACH: R0700              RS: 1.906

INPUT
Description: XS upstream of S12.0600
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9689    1694    9759    1692    9768  1691.5    9795    1692    9846    1694
    9857  1694.2    9861    1694    9900  1692.6    99471693.337    9951  1693.4
    99581693.262    9963  1693.2    99681693.259    9980  1693.4   10000  1693.2
   10020  1693.3   10034  1693.3   10068  1693.5   10088 1693.75

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9689     .06    9980     .04   10020     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9980   10020               0       0       0             .1       .3
Left Levee      Station=    9857      Elevation=  1694.2

CROSS SECTION          RIVER: W12.0000
REACH: R0800              RS: 1.871

INPUT
Description: Q = 151 cfs left split at S12.0600
Station Elevation Data    num=      11
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9895  1692.5    9940    1692    9970    1690    9990    1688   10000  1687.2
   10015    1688   10025 1688.15   10030    1688   10035 1687.85   10040    1688
   10060  1688.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9895     .06    9990     .04   10015     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10015              132     132     132             .1       .3

CROSS SECTION          RIVER: W12.0000
REACH: R0800              RS: 1.846

INPUT
Description:
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9889  1688.6    9900    1688    9937    1686    9987  1685.5    9993  1684.2
   10000  1684.1   10003  1684.2   10005    1686   10008  1686.7   10013    1686
   10047  1685.4   10086    1686   10113  1686.7

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

```
    9889      .06     9987      .04    10005      .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9987   10005              162     162     162              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10008   10113    1687

CROSS SECTION          RIVER: W12.0000
REACH: R0800              RS: 1.816

INPUT
Description:
Station Elevation Data    num=      24
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
    9728   1684.8     9790   1685.2     9804   1684.7     9823   1685.7     9861     1684
    9896   1684.9     9928     1684     9993     1682    10000   1681.5    10013     1682
   10034     1684    10055   1684.3    10072     1684    10096     1682    10132   1681.2
   10177     1682    10198     1682    10229     1684    10244   1684.6    10264     1684
   10284   1682.3    10318   1683.8    10349   1683.9    10446   1683.9

Manning's n Values        num=       3
     Sta    n Val      Sta    n Val      Sta    n Val
    9728      .06     9993      .04    10013      .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9993   10013              270     269     250              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10055   10446    1685
Left Levee      Station=    9896      Elevation=  1684.9
Right Levee     Station=   10244      Elevation=  1684.6

CROSS SECTION          RIVER: W12.0000
REACH: R0800              RS: 1.765

INPUT
Description: Q = 370 cfs from HEC-1 FCD 93-07 = D510R + S12.0600L
Station Elevation Data    num=      27
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
    9675   1681.2     9701     1680     9710   1679.3     9717     1680     9724   1680.5
    9734     1680     9752   1679.4     9782   1679.7     9877   1678.7     9940     1678
    9951   1676.8     9966     1678     9984   1678.9     9992  1678.18     9994     1678
   10000   1677.8    10009   1678.1    10020   1679.9    10049     1678    10107   1677.8
   10204     1678    10240   1678.9    10272     1678    10296     1678    10340   1676.6
   10351     1678    10379     1680

Manning's n Values        num=       3
     Sta    n Val      Sta    n Val      Sta    n Val
    9675      .06     9992      .04    10009      .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9992   10009              515     517     525              .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    9675    9984    1680   10150   10379    1680

CROSS SECTION          RIVER: W12.0000
REACH: R0800              RS: 1.667

INPUT
Description:
Station Elevation Data    num=      27
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9707  1666.9    9722  1666.2    9736  1666.7    9750    1666    9762  1665.3
    9776    1665    9820    1669    9846  1668.9    9915    1666    9930  1665.4
    9959    1666    9979    1666    9991  1664.6   10000  1664.4   10008  1665.3
   10018  1665.9   10031  1665.2   10057  1665.9   10083    1666   10120  1664.1
   10135    1666   10150    1668   10163    1666   10186  1665.3   10196  1665.3
   10303    1666   10316    1668

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9707     .06    9979     .04   10018     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9979   10018             2240    2337    2275             .1       .3
Left Levee      Station=    9846      Elevation=  1668.9
Right Levee     Station=   10150      Elevation=    1668

CROSS SECTION          RIVER: W12.0400
REACH: R0100              RS: 0.201

INPUT
Description: Q = 305 cfs right split at S12.0400
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9907  1832.8    9940    1832    9988    1832    99951831.767   10000  1831.6
   100121831.741   10017  1831.8   10027  1831.7   10052  1831.8   10062  1831.6
   10072    1832   10083  1832.8   10107  1832.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9907    .065    9995    .045   10012    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995   10012              247     244     240             .1       .3

CROSS SECTION          RIVER: W12.0400
REACH: R0100              RS: 0.155

INPUT
Description:
Station Elevation Data    num=      11
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9958    1826    99931824.333   10000    1824   10007 1824.25   10042  1825.5
   10081  1825.3   10102    1825   10110  1825.2   10121    1825   10135    1826
   10167  1826.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9958    .055    9993    .035   10007    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9993   10007              270     276     280             .1       .3

CROSS SECTION          RIVER: W12.0400
REACH: R0100              RS: 0.103

INPUT
Description:
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9921  1818.2    9971    1818    99811817.611    9989  1817.3    99901817.291
    99951817.245   10000  1817.2   10002 1817.32   10003 1817.38   10004 1817.44
   10010  1817.8   10022  1817.7   10046  1817.8   10069  1817.1   10108    1818
```

```
   10131  1818.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9921    .055    9989    .035   10002    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9989   10002              222     222     222             .1       .3

CROSS SECTION          RIVER: W12.0400
REACH: R0100              RS: 0.061

INPUT
Description: Q = 290 cfs decrease due to overflow at 0.103
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9845    1812    9885    1812    9930  1811.5    9967  1812.3    9986    1812
    99921811.871   10000  1811.7   10014 1811.89   10022    1812   10052  1811.6
   10072    1812   10085  1812.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9845    .053    9992    .035   10014    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9992   10014                0       0       0             .1       .3

CROSS SECTION          RIVER: W12.0300
REACH: R0100              RS: 2.982

INPUT
Description: Q = 303 cfs from D508R HEC-1 FCD 93-07
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9783    1868    9796    1868    9827  1866.9    9845  1867.1    9861  1866.8
    9877  1867.5    9883  1867.1    9890    1868    9904  1868.3    9940  1868.3
    9950    1868    9989    1866    99951865.836   10000  1865.7   100051865.867
   10009    1866   10045    1868   10070  1868.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9783    .053    9989    .035   10009    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9989   10009              206     206     206             .1       .3
Left Levee      Station=    9940      Elevation=  1868.3

CROSS SECTION          RIVER: W12.0300
REACH: R0100              RS: 2.942

INPUT
Description:
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9655  1863.1    9684  1863.1    9735    1862    9780  1861.3    9794  1861.8
    9809  1861.7    9829    1862    9842    1863    9881    1862    99151861.651
    9920  1861.6    99251861.781    9931    1862    9943  1862.6    9960  1862.7
    9978    1862    99981860.364   10000  1860.2   10008  1860.3   10030  1860.2
   10039    1862   10077  1863.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9655    .053    9998    .035   10008    .053
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9998   10008              395     395     395             .1       .3
Left Levee      Station=    9960      Elevation=  1862.7

CROSS SECTION          RIVER: W12.0300
REACH: R0100              RS: 2.868

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9829.5  1851.1  9833.9  1851.1  9839.1  1851.1  9845.3    1851  9847.9  1850.9
  9854.9  1850.9  9864.9  1851.2  9871.9  1851.4  9882.51851.701  9891.51851.957
  9910.6  1852.5  9928.3  1852.9  9934.8    1853  9940.5  1852.9    9952  1852.7
  9976.2    1852  9981.2  1851.7  9989.3  1851.1  9993.8  1850.8  9998.2  1850.6
   10000  1850.5   100081851.105 10011.9  1851.4 10018.2  1851.7 10023.3  1851.7
 10035.7  1851.4 10043.6  1851.7   10046  1851.8 10050.7  1851.9 10053.5  1851.9
 10055.4  1851.8 10060.2  1851.5 10075.9  1850.2 10079.1    1851 10080.9  1851.4
 10087.3  1851.6 10091.3  1851.8 10093.7  1851.7 10099.6  1851.6 10101.8  1851.5
 10103.4  1851.6 10115.5  1852.4   10120  1852.7 10128.3  1852.5 10134.2  1852.3
 10143.3  1850.4 10143.7  1850.4 10163.4  1850.7   10167  1850.8 10168.4  1850.9
 10168.8  1850.9 10169.4  1850.9 10175.3  1851.7 10177.4  1851.7 10182.5  1851.9
 10186.4  1852.2 10189.4  1852.2 10193.7  1852.3 10195.9  1852.4 10201.6  1852.8
 10202.9  1852.9 10219.9  1852.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9829.5    .053  9989.3    .035   10008    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9989.3   10008              308     308     308             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 10091.3 10219.9    1853
Left Levee      Station=  9934.8      Elevation=    1853
Right Levee     Station=   10120      Elevation=  1852.7

CROSS SECTION          RIVER: W12.0300
REACH: R0100              RS: 2.809

INPUT
Description:
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9900  1844.4    9911    1844    9936  1842.6    9970    1844    9990  1843.2
    9995    1843   10000  1842.8   10006 1843.175   10016  1843.8   10026  1843.8
   10037  1843.3   10051  1843.3   10067    1844   10116  1844.4   10161  1845.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9900    .053    9990    .035   10006    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10006              193     203     193             .1       .3

CROSS SECTION          RIVER: W12.0300
REACH: R0100              RS: 2.771

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
  9652.1  1839.1  9666.9  1839.2  9677.1  1839.1  9719.2  1838.8  9730.7  1838.6
  9731.6  1838.6  9735.1  1838.7  9748.8  1837.9  9752.3  1837.8  9753.6  1837.8
  9757.7  1837.8  9786.4  1837.8  9789.1  1837.7  9796.4  1837.4  9802.2  1837.2
  9806.5  1836.9    9813  1837.6  9814.1  1837.7  9814.9  1837.7  9843.4  1837.8
  9846.8  1837.8  9849.1  1837.7  9855.9  1837.6  9863.8  1837.4  9873.4  1837.4
    9883  1837.6  9889.51837.708    9901  1837.9  9916.4    1838  9936.3  1838.4
    9952  1838.7  9958.7  1838.6  9981.6  1838.6  9993.5  1838.9    99951838.682
  9999.7    1838   10000    1838 10000.4    1838   10006 1838.17 10023.4  1838.7
 10031.9  1839.1   10039  1839.5 10049.4  1838.8 10060.2  1838.2 10071.6  1838.5
 10087.7  1838.7   10096  1838.1 10102.2  1837.5 10110.1  1837.3 10110.2  1837.3
 10110.3  1837.3 10118.7  1836.2 10119.8  1836.4 10124.2  1836.9 10125.3  1837.2
 10131.7  1837.2 10131.8  1837.2   10132  1837.3   10138  1838.1 10145.4  1838.6
 10147.1  1838.7 10150.3  1838.9 10156.2  1839.6   10169  1840.5 10169.7  1840.5
 10177.7  1840.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9652.1    .053    9995    .035 10023.4    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995 10023.4              250     290     250             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
  9652.1  9846.8  1839.3
Left Levee      Station=  9993.5      Elevation=  1838.9
Right Levee     Station=   10039      Elevation=  1839.5

CROSS SECTION          RIVER: W12.0300
REACH: R0100              RS: 2.716

INPUT
Description:
Station Elevation Data    num=      17
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9721    1832    9752  1831.9    9785  1831.2    9843    1832    9863  1831.4
    9902  1831.6    9927  1830.8    9957  1831.3    9973  1831.3    99901830.985
    99951830.893   10000  1830.8   100051830.956   10016  1831.3   10046  1831.8
   10086  1831.4   10118    1832

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9721    .053    9990    .035   10005    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10005              233     256     238             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9721    9843    1832

CROSS SECTION          RIVER: W12.0300
REACH: R0100              RS: 2.667

INPUT
Description:
Station Elevation Data    num=      17
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9896  1824.9    9915    1824    9947    1824    9982  1825.2    99921824.645
   10000  1824.2   100061824.636   10011    1825   10037  1824.5   10064  1824.4
   10090  1825.3   10104  1824.5   10121  1824.6   10138    1824   10149  1823.8
   10156    1824   10184  1825.8

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

```
    9896    .053    9992    .035   10006    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9992   10006              479     479     479             .1       .3

CROSS SECTION          RIVER: W12.0300
REACH: R0100              RS: 2.577

INPUT
Description:
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9615  1812.4    9634    1812    9648  1811.7    9670    1812    9700  1811.6
    9720    1812    9739  1812.5    9757    1812    9779  1811.3    98001811.627
    9824    1812    98501811.071    98651810.536    9880    1810    9895  1810.2
    9911  1811.8    9964  1811.9    99931810.853   10000  1810.6   100091810.847
   10040  1811.7   10068 1811.66   10110  1811.6   10125  1811.4   10140    1812
   10154  1811.4   10165  1812.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9615    .053    9993    .035   10009    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9993   10009                0       0       0             .1       .3
Left Levee      Station=    9824      Elevation=    1812

CROSS SECTION          RIVER: W12.0300
REACH: R0200              RS: 2.516

INPUT
Description: Q = 593 cfs = S12.0300R + W12.0400
Station Elevation Data    num=      82
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9600  1803.1    9646    1802    9654  1801.4    9658    1802    9667  1802.6
    9681    1802    9686  1801.5    9693    1802  9709.4  1803.1  9713.4  1803.1
  9721.3  1803.1  9729.9  1803.1  9741.5  1802.9  9749.4  1802.3  9754.5  1802.1
  9784.5  1802.4  9799.4  1802.7  9814.4  1802.8  9828.2  1802.3  9828.9  1802.3
  9829.1  1802.3  9832.6  1802.1  9838.1  1801.9  9841.7    1802  9841.8    1802
  9860.2  1802.6  9865.5  1802.6  9872.3  1802.6  9916.7  1802.6    99311802.458
  9936.8  1802.4  9942.4  1802.5  9951.8  1802.5  9953.3  1802.5  9958.3  1801.5
  9959.1  1801.4  9959.5  1801.4  9964.9  1801.8  9967.9  1802.2  9981.8  1802.5
  9985.9  1802.5    9995  1802.4  9996.8  1802.2   10000  1801.6 10011.3  1802.4
 10015.9  1802.8 10020.4  1802.7 10029.8  1802.6 10042.1  1802.6 10053.7  1802.6
   10057  1802.2 10059.6  1801.9 10064.7  1802.5   10066  1802.6 10087.9    1803
 10096.2  1803.2 10103.8  1803.1 10107.4  1803.1 10111.7  1803.1 10119.2  1803.1
 10139.8  1803.1 10150.7  1803.1 10161.4  1803.1 10163.8  1803.1 10168.3    1803
 10179.8  1802.5 10189.4  1802.6 10191.5  1802.7 10193.6  1802.6 10203.1  1802.2
 10218.7  1801.7 10219.6  1801.7 10219.7  1801.7 10220.1  1801.7 10220.4  1801.7
 10229.9  1802.3 10256.8  1801.1   10258    1801 10262.1  1801.2 10297.5  1802.8
 10302.6  1803.1 10320.6  1802.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9600    .053    9995    .035 10011.3    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995 10011.3               105     117     105             .1       .3
Right Levee     Station= 10096.2      Elevation=  1803.2

CROSS SECTION          RIVER: W12.0300
REACH: R0200              RS: 2.494
```

```
INPUT
Description:
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9612  1800.5    9649    1800    9680  1799.8    9689  1799.2    9697    1800
    9703  1800.2    9725    1800    9739  1799.6    9752    1800    9779    1800
    9798  1799.7    9829    1800    9878  1799.7    9924    1800    99771799.512
   10000  1799.3   100031799.515   10007  1799.8   10060  1799.6   10071  1799.9
   10082  1799.9   10087  1799.5   10093    1800   10100  1800.2   10117    1800
   10156  1799.7   10192  1800.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9612    .053    9977    .035   10003    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9977   10003              261     283     278             .1       .3

CROSS SECTION          RIVER: W12.0300
REACH: R0200              RS: 2.440

INPUT
Description: Q = 536 cfs decrease due to overflow at XS2.494
overflow goes to
             left into W12.0000 at XS2.652
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9772  1794.4    9804    1794    9844  1792.8    9886  1792.5    9901    1792
    9932    1793    9972    1793    99901792.486   10000  1792.2   100071792.495
   10019    1793   10109  1793.8   10122  1793.4   10134  1793.6   10139 1793.43
   10184  1791.9   10224    1792   10265  1793.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9772    .053    9990    .035   10007    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10007              260     309     268             .1       .3

CROSS SECTION          RIVER: W12.0300
REACH: R0200              RS: 2.382

INPUT
Description:
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9892    1787    9922    1786    9937  1785.3    9970  1785.5    9990    1784
    9995  1783.8   10000  1783.6   10015    1784   10047    1786   10090  1785.5
   10113    1786   10152  1784.7   10192  1785.9   102151785.161   10220    1785
   102281785.364   10242    1786   10259  1786.2   10295    1786   10304  1785.9
   10312    1786   10350    1787

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9892    .053    9990    .035   10015    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10015              104     104     104             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10259   10350  1786.5
Right Levee     Station=   10259      Elevation=  1786.2
```

```
CROSS SECTION          RIVER: W12.0300
REACH: R0200              RS: 2.362

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9824.69    1784 9830.19    1784 9846.12 1782.53 9857.52  1782.3 9862.47 1782.24
 9873.81 1782.16 9875.08 1782.17 9877.89 1782.35 9895.75 1783.41 9903.47  1783.9
 9904.95 1783.99 9922.49 1783.79 9950.09 1783.86 9953.06 1783.86 9961.33 1783.52
 9988.39 1782.81 9996.66    1782   10000    178110007.93    178210014.55    1782
10030.31 1782.2310034.16 1782.3210049.45 1782.87 10061.4 1783.0710069.29 1783.32
10086.03    178410089.19    178410090.22    1784   10104  1783.3   10122  1783.5
   10146  1782.8   10177    178410179.36    178410191.09  1784.210202.71    1784
 10208.1 1783.76   102141783.744   10224  1782.5   102341783.68810240.31 1783.67
   10250    1784   10273    1783   10288    178410295.86    178410306.75    1784
10320.54 1784.3110322.83 1784.3610344.22 1784.6210355.83 1784.61

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9824.69    .053 9996.66    .03510007.93    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9996.6610007.93               260     271     270             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   1025010355.83    1784
Left Levee      Station= 9904.95      Elevation= 1783.99
Right Levee     Station=10344.22      Elevation= 1784.62

CROSS SECTION          RIVER: W12.0300
REACH: R0200              RS: 2.311

INPUT
Description:
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9703    1778    9745    1776    9767  1776.8    9777  1776.4    9782  1776.6
    9804    1776    9837    1775    9860    1776    9913  1776.7    9959    1776
    9983  1775.8    99931775.094    99951774.953   10000  1774.6   100051774.812
   100081774.939   100101775.024   10033    1776   10083  1776.6   10100  1776.4
   10117    1777   10142  1777.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9703    .053    9993    .035   10010    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9993   10010               97     101     104             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9703    9913  1777.5

CROSS SECTION          RIVER: W12.0300
REACH: R0200              RS: 2.292

INPUT
Description:
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9716  1775.3    9744  1773.7    9770  1774.6    9803    1774    9844    1773
    9850  1773.3    9866  1772.6    9905  1773.5    9966  1772.2    9986  1773.8
    9993    1773    99951772.771   10000  1772.2   100101772.832   10019  1773.4
```

```
   10035    1773   10066    1774   10085  1773.2   10105    1774   10148  1773.4
   10181    1774

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9716    .053    9995    .035   10010    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995   10010              230     239     210             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9716    9890    1774
Right Levee     Station=   10105      Elevation=    1774

CROSS SECTION          RIVER: W12.0300
REACH: R0200              RS: 2.246

INPUT
Description: XS upstream of split S12.0355
Station Elevation Data    num=      26
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9676  1769.4    9699  1768.7    9725  1768.5    9735    1768    9755    1766
    9765  1766.7    9778  1766.4    9790  1766.5    9810  1767.2    9825  1767.8
    9845  1767.7    9865  1767.8    9885  1766.7    9898  1767.9    9930  1767.8
    9950  1768.3    9977  1767.5    9988  1767.5    99931767.125   10000  1766.6
   100071767.076   10011  1767.3   10021  1767.9   10053  1767.8   10090    1768
   10120  1769.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9676    .053    9993    .035   10007    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9993   10007                0       0       0             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    9676    9765  1768.5   10021   10120  1768.5

CROSS SECTION          RIVER: W12.0300
REACH: R0300              RS: 2.191

INPUT
Description: Q = 303 cfs from D508R HEC-1 FCD 93-07
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9733  1761.3 9758.76  1760.7 9768.14  1760.5 9775.29 1760.53 9778.66 1760.52
 9794.81 1760.83 9801.32 1760.75 9807.24 1760.73 9849.41 1760.53 9857.51 1760.49
 9862.55 1760.49 9881.56 1760.49 9904.83 1760.71 9923.11 1760.88 9929.98 1760.95
 9936.82 1760.97 9947.98  1761.1    9962  1760.9 9969.63 1760.87 9979.05 1760.55
    99851760.348 9995.23    1760   10000    176010003.99    1760   100101760.437
10024.06 1761.4610031.74 1761.4410045.38 1761.7610047.18 1761.7810051.47 1761.67
10063.38 1761.4610088.38 1761.1310097.23  1761.310105.04  1761.610115.72 1761.63
10148.78 1760.7910163.12 1760.4310168.72 1760.3410176.42    176010179.33    1760
10180.63    176010191.57 1760.5910205.01 1761.2210213.82 1761.6610219.08    1762
10220.66  1762.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9733    .053    9985    .035   10010    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9985   10010                54      57      54             .1       .3
Right Levee     Station=10047.18      Elevation= 1761.78
```

```
CROSS SECTION          RIVER: W12.0300
REACH: R0300              RS: 2.180

INPUT
Description:
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9750    1760    9817    1759    9863  1759.6    9885  1759.4    9919  1759.6
    9930  1759.3    9963  1759.3    9977  1758.6    9979  1758.5    99801758.495
    99851758.471   10000  1758.4   100041758.557   10028  1759.5   10047  1758.5
   10063    1759   10089    1759   10113    1760   10123  1760.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9750    .053    9985    .035   10004    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9985   10004               0       0       0              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10028   10123  1760.2

CROSS SECTION          RIVER: W12.0300
REACH: R0400              RS: 2.132

INPUT
Description: Q = 233 cfs right split at S12.0365
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9950    1754    9993    1752   10000  1751.5   10010    1752   10018  1753.6
   10049    1754   10070  1754.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9950    .053    9993    .035   10010    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9993   10010               210     216     220              .1       .3

CROSS SECTION          RIVER: W12.0300
REACH: R0400              RS: 2.091

INPUT
Description:
Station Elevation Data    num=      10
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9936  1748.5    9955    1748    99881746.533   10000    1746   100071746.646
   10013  1747.2   10028    1746   10062    1748   10082    1748   10098  1748.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9936    .053    9988    .035   10007    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9988   10007               210     218     208              .1       .3

CROSS SECTION          RIVER: W12.0300
REACH: R0400              RS: 2.050

INPUT
Description:
Station Elevation Data    num=      25
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9888.86 1743.31 9902.53 1743.06 9916.66 1743.23 9933.41 1743.25 9957.44 1742.94
 9963.22 1742.92 9978.39 1742.23 9981.66    1742  9990.1    1742   10000  1740.6
10005.67 1741.53   10020    1742   10037  1742.3   10051    1742   10056  1741.6
   10060    1742   10125 1742.8310139.46 1742.5710143.09 1742.5610154.06 1742.47
10156.74 1742.4410174.86 1742.3810182.89 1742.3610199.13 1742.1410201.17  1742.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9888.86    .053  9990.1    .03510005.67    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9990.110005.67              290     302     280             .1       .3
Right Levee     Station=   10125      Elevation= 1742.83

CROSS SECTION          RIVER: W12.0300
REACH: R0400              RS: 1.993

INPUT
Description:
Station Elevation Data    num=      17
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9870  1735.8    9914    1734    9923  1733.4    9934    1734    9946  1733.6
    9951    1734    9971    1735    9983    1734    99911733.623   10000  1733.2
   10007  1733.6   10014    1734   10050  1735.4   10072    1734   10080  1733.3
   10090    1734   10117  1735.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9870    .053    9991    .035   10007    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9991   10007                 0       0       0             .1       .3

CROSS SECTION          RIVER: W12.0300
REACH: R0450              RS: 1.917

INPUT
Description: Q = 303 cfs from D508R HEC-1 FCD 93-07
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9735  1726.3    9763    1726    9777  1725.3    9797    1726    9818  1725.5
    9853  1725.9    9873  1725.1    9888  1725.5    9924  1725.4    9966  1724.4
    9984  1725.7    9995    1724   10000  1723.3   10005    1724   10042    1726
   10066  1726.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9735    .053    9995    .035   10005    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995   10005               130     140     132             .1       .3

CROSS SECTION          RIVER: W12.0300
REACH: R0450              RS: 1.891

INPUT
Description: XS upstream of S12.0375
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9726  1722.2    9752    1722    9783  1721.2    9793  1721.3    9805    1722
    9814  1722.3    9830    1722    9870  1721.3    9885  1721.5    9902  1721.1
    9916    1722    9931  1722.4    9960  1722.6    9980    1722   10000 1720.25
```

```
   10015    1722   10040  1722.6   10063    1722   10080  1720.7   10100    1722
   10117  1722.5
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9726    .053    9980    .035   10015    .053
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9980   10015                 0       0       0              .1       .3
Right Levee     Station=   10040      Elevation=  1722.6

CROSS SECTION          RIVER: W12.0300
REACH: R0500              RS: 1.863
INPUT
Description: Q = 117 cfs right split at S12.0375
Station Elevation Data    num=      30
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9725  1719.2    9753    1718    9769  1717.4    9778  1717.7    9786  1717.3
    9792    1718    9800  1718.3    9807    1718    9820    1717    9836    1718
    9857    1719    9882    1718    9892  1717.6    9900    1718    9953  1718.4
    9975  1719.1    9990    1718    9993 1717.64   10000  1716.8   10007 1717.64
   10010    1718   10034  1718.8   10069    1718   10078  1717.7   10090    1718
   10110  1718.7   10133    1718   10147  1717.7   10167    1718   10222    1720
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9725    .053    9993    .035   10007    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9993   10007               250     252     252              .1       .3
Left Levee      Station=    9857      Elevation=    1719
Right Levee     Station=   10034      Elevation=  1718.8

CROSS SECTION          RIVER: W12.0300
REACH: R0500              RS: 1.815

INPUT
Description:
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9756  1714.7    9780    1714    9797  1713.2    9809  1713.3    9820  1712.3
    9836    1712    9841  1711.7    9846    1712    9888  1713.9    9923    1714
    9992    1712   10000  1711.5   10013    1712   10034    1714   10064    1716

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9756    .053    9992    .035   10013    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9992   10013               200     242     242              .1       .3

CROSS SECTION          RIVER: W12.0300
REACH: R0500              RS: 1.769

INPUT
Description:
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9865  1709.6    9938    1708    9955  1707.4    9975  1707.8    99911706.284
    9994    1706   10000  1705.9   10003    1706   100061706.353   10020    1708
   10039    1710   10078  1711.9
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9865    .053    9991    .035   10006    .053
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9991   10006               480     483     483              .1       .3
CROSS SECTION          RIVER: W12.0300
REACH: R0500              RS: 1.678
INPUT
Description:
Station Elevation Data    num=      17
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9918.16 1698.94 9921.26 1698.84    9947    1698    9958 1696.35 9969.84    1698
 9972.94    1698 9982.28    1698 9991.54 1697.98   10000  1696.4   10009    1698
   10026  1699.310037.44 1699.2610056.57 1699.0810064.78 1699.2110072.84 1699.28
10087.01 1699.5810096.34 1699.73
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9918.16    .053 9991.54    .035   10009    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9991.54   10009              365     365     365             .1       .3

CROSS SECTION          RIVER: W12.0300
REACH: R0500              RS: 1.608

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9577.23    1692 9579.07 1692.05 9596.54 1691.16 9612.44  1691.2 9621.92  1691.2
 9629.05 1691.29 9650.38 1691.82 9654.07 1691.87 9655.68 1691.85 9658.24 1691.83
 9671.22 1691.32 9676.74 1691.23 9706.85    1690 9709.23 1689.81 9712.88 1689.64
 9730.19 1688.18 9732.34 1688.06 9737.88    1690 9746.52    1690 9764.49 1690.46
 9783.03 1690.46 9785.93 1690.44 9826.29  1690.1 9826.45  1690.1 9827.81 1690.08
 9829.01 1690.09 9830.56 1690.09 9860.45 1690.33 9862.61 1690.35 9890.23  1690.7
 9909.72 1690.28 9923.87    1690    9925    1690    9934  1689.3    9947    1690
    9960  1690.4    9978    1690    9995 1689.459   10000  1689.3   10008    1690
   10013  1690.2   10020    1690   10026  1689.4   10036    1690   10046  1689.6
   10054    1690   10063  1690.2   10079    1690 10084.91 1690.27 10087.85  1690.3
10095.98  1690.7   10118    1692   10128  1692.3   10138    1692

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9577.23    .053    9978    .035   10008    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9978   10008              338     338     338             .1       .3
Left Levee      Station=    9960      Elevation=  1690.4

CROSS SECTION          RIVER: W12.0300
REACH: R0500              RS: 1.544

INPUT
Description: Q = 387 cfs interpolated from HEC-1 FCD93-07
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9891.42 1682.37 9928.73 1682.17  9933.2    1682    9943  1681.7    9948    1682
    9958  1682.3    9967    1682    9975  1681.7    9982    1682    9995 1681.495
   10000  1681.3   10006    1682   10010  1682.2   10016    1682   10021  1681.1
   10040    1682   10054  1682.3   10070    1682 10074.72 1681.42 10081.62 1681.12
10105.04    1680   10113    1680 10120.63    1680 10143.17 1681.49 10150.28 1681.64
10153.15 1681.66 10164.62 1681.38 10173.89 1680.32 10176.73    1680 10179.33    1680
10193.03    1680   10237    1682   10274  1682.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9891.42    .053    9982    .035   10006    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9982   10006              285     272     250             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10130   10274  1682.6
Right Levee     Station=   10054      Elevation=  1682.3

CROSS SECTION          RIVER: W12.0300
REACH: R0500              RS: 1.493
```

```
INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9824.11 1678.11 9837.04 1678.07 9845.91    1678 9854.09    1678 9855.95    1678
 9883.48 1676.28 9885.61 1676.27    9900  1676.6 9917.52  1675.8 9919.19 1676.08
 9920.28 1676.08 9925.48    1676    9940  1676.7 9965.51    1676 9991.05    1676
 9994.35    1676 9996.79    1676    99971675.928   10000  1674.9   100151675.406
   100201675.528   10027  1675.7 10048.1 1674.4610051.69 1674.4310064.87 1674.25
10071.54 1675.5510089.67    167610108.71    167610121.17 1676.4510133.42 1676.69
10149.06 1677.1610162.19 1677.5810175.36    167810189.81 1679.7510192.03    1680
10206.58    168010212.54    1680

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9824.11     .05    9997    .045   10020     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9997   10020                 0       0       0              .1       .3
Left Levee      Station=    9940      Elevation=  1676.7

CROSS SECTION          RIVER: W12.0365
REACH: R0100              RS: 0.212

INPUT
Description: Q = 70 cfs left split from S12.0365
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9887  1754.3    9903    1754    9928  1753.4    9943  1753.5    9963  1753.4
    99681753.615    9984  1754.3    99951753.406   10000    1753   10015    1753
   10021  1753.6   10035  1753.5   10073  1754.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9887    .053    9995    .035   10021    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995   10021                215     252     237              .1       .3

CROSS SECTION          RIVER: W12.0365
REACH: R0100              RS: 0.164

INPUT
Description:
Station Elevation Data    num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9928  1748.3    9937    1748    9953  1747.3    9978  1747.7   10000  1746.2
   10010  1747.7   10020  1747.5   10042  1748.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9928    .053    9978    .035   10010    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9978   10010                180     184     187              .1       .3

CROSS SECTION          RIVER: W12.0365
REACH: R0100              RS: 0.129

INPUT
Description:
Station Elevation Data    num=      13
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9943  1743.6    9956  1743.4    9974  1743.4    9995    1742   10000  1741.4
   10007    1742   10010  1742.7   10014    1742   10027    1742   10035  1741.4
   10040    1742   10058  1743.3   10060  1743.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9943    .053    9995    .035   10007    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995   10007               322     322     322             .1       .3

CROSS SECTION          RIVER: W12.0365
REACH: R0100              RS: 0.068

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9962  1735.7    9992    1734   10000  1733.6   10007    1734   10067  1735.4
   10096  1735.2   10140  1735.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9962    .053    9992    .035   10007    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9992   10007                 0       0       0             .1       .3

CROSS SECTION          RIVER: W12.0355
REACH: R0100              RS: 0.374

INPUT
Description: Q = 233 cfs left split at S12.0355
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9826  1763.6    9868    1762    9911  1761.2    9965  1760.8    9984    1760
    99901759.775    99951759.588   10000  1759.4   10005  1759.7   10007 1759.82
   10010    1760   10040  1761.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9826    .053    9990    .035   10007    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10007               272     287     287             .1       .3

CROSS SECTION          RIVER: W12.0355
REACH: R0100              RS: 0.320

INPUT
Description:
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9835  1753.6    9866  1753.2    9888    1752    9894  1751.8    9897    1752
    9908  1752.9    9927  1753.2    9955    1752    9973  1754.6    9988    1754
    99921753.333    9994    1753   10000    1752   10005    1753   10006  1753.2
   10010    1754   10036    1754   10093    1756   10143  1756.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9835    .053    9992    .035   10006    .053
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9992   10006              232     247     247             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9835    9908    1754

CROSS SECTION          RIVER: W12.0355
REACH: R0100              RS: 0.273

INPUT
Description:
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9818  1748.7    9837    1748    9860    1746    9870  1745.6    9874    1746
    9882  1746.6    9889    1746    9895  1745.8    9898    1746    9934    1748
    9973    1748    99871747.585    99901747.496    99951747.348   10000  1747.2
   10005  1747.7   10008    1748   10023  1748.7   10153    1749

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9818    .053    9987    .035   10005    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9987   10005              260     272     272             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9818    9882    1749

CROSS SECTION          RIVER: W12.0355
REACH: R0100              RS: 0.221

INPUT
Description:
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9830  1742.4    9878    1742    9908  1741.1    9941    1740    9961  1741.4
    99851740.317    9992    1740   10000  1739.7   10004    1740   100081740.421
   10023    1742   10080  1742.6   100961742.143   10101    1742   101061742.172
   10133  1743.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9830    .053    9985    .035   10008    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9985   10008              290     302     305             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9830    9961    1742
Left Levee      Station=    9961      Elevation=  1741.4

CROSS SECTION          RIVER: W12.0355
REACH: R0100              RS: 0.164

INPUT
Description:
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9920  1736.7    9947    1736    9988    1734   10000  1733.4   10013    1734
   10032  1733.7   10043    1734   10066  1734.5   10116  1734.7   10160  1734.7
   10180    1734   10208  1734.8   10232  1734.8

Manning's n Values        num=       3
```

```
     Sta   n Val     Sta   n Val     Sta   n Val
    9920    .053    9988    .035   10013    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9988   10013              253     253     253             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10100   10232  1735.5

CROSS SECTION          RIVER: W12.0355
REACH: R0100              RS: 0.116

INPUT
Description:
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9886  1729.8    9973  1728.8    9985  1728.4    99861728.367    9988  1728.3
    99951728.067   10000  1727.9   100051727.983   100201728.233   100221728.266
   10030  1728.4   10075    1728   10095  1727.7   10109    1728   10122  1728.4
   10150    1728   10183    1728   10213  1729.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9886    .053    9988    .035   10022    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9988   10022              165     171     171             .1       .3

CROSS SECTION          RIVER: W12.0355
REACH: R0100              RS: 0.084

INPUT
Description:
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9831  1726.8    9868    1726    9889  1725.5    9904  1725.4    9923  1725.3
    9960  1724.9    99901724.375   10000  1724.2   100121724.392   10050    1725
   10085    1724   10093  1723.8   10100    1724   10160  1725.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9831    .053    9990    .035   10012    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10012              185     234     268             .1       .3

CROSS SECTION          RIVER: W12.0355
REACH: R0100              RS: 0.039

INPUT
Description:
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9854  1724.3    9872    1724    9925    1722    99801721.046   10000  1720.7
   10003 1721.48   10005    1722   10014    1724   10034  1725.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9854    .053    9980    .035   10003    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9980   10003                0       0       0             .1       .3
```

```
CROSS SECTION          RIVER: W10.0555
REACH: R0100              RS: 1.128

INPUT
Description: Q = 358 left split flow at S10.0555
Station Elevation Data    num=      39
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9775    2030    9828    2030  9838.3  2029.4  9839.3  2028.9  9839.7  2028.9
  9840.5  2028.9  9853.2  2029.2  9857.7  2028.7  9863.4  2028.1  9865.4  2028.3
  9866.2  2028.1  9875.8  2028.4  9881.6  2028.1    9883    2028  9892.5  2028.5
  9902.3  2029.4  9904.7  2029.4  9921.7  2030.2  9924.7  2030.1  9932.9  2029.6
  9936.8  2029.6    9944  2029.6  9957.4  2029.5    9962  2029.3  9966.4  2029.3
  9989.1    2028  9990.8  2027.9  9993.7  2027.6 10000.1  2026.8 10003.2    2027
 10013.2  2027.8 10021.9  2028.1 10026.7  2028.2 10027.8  2028.2 10057.8  2028.2
 10062.8  2028.5 10069.5  2028.7 10087.2  2028.6 10109.1  2029.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9775     .07  9989.1    .045 10021.9     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9989.1 10021.9              454     451     449             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9775  9870.7    2030
Left Levee      Station=  9853.2      Elevation=  2029.2

CROSS SECTION          RIVER: W10.0555
REACH: R0100              RS: 1.042

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9770.6  2015.2  9772.6  2015.1  9783.3  2014.9    9785  2014.8    9789  2014.4
  9794.2  2014.1    9802  2013.9  9805.1  2013.9  9821.2    2014  9827.8    2015
  9831.7  2015.6  9836.7  2015.7  9839.8  2015.7  9842.4  2015.7  9845.6  2015.2
  9846.4  2015.1  9852.5  2014.7  9853.6  2014.6  9873.9  2014.2  9887.9  2014.2
  9894.9    2015  9928.9  2014.7  9934.9  2015.6  9935.9  2015.6  9943.7  2015.8
  9943.8  2015.8  9944.2  2015.8  9948.6  2015.9  9953.9  2016.3  9954.9  2016.3
  9962.8  2016.3  9964.8  2016.4  9968.7  2016.4  9973.7  2016.4  9980.5  2016.3
  9988.9  2015.6  9993.2  2015.4  9997.2  2015.2   10000    2015 10004.9    2015
 10007.9    2015 10016.9  2015.4 10020.7  2015.6 10020.9  2015.6 10037.9  2016.3
 10041.4  2016.3 10058.4    2016 10071.1  2015.7 10095.7  2016.7 10097.3  2016.7
 10098.5  2016.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9770.6     .07  9988.9    .045 10020.7     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9988.9 10020.7              251     251     251             .1       .3
Left Levee      Station=  9842.4      Elevation=  2015.7
Right Levee     Station= 10037.9      Elevation=  2016.3

CROSS SECTION          RIVER: W10.0555
REACH: R0100              RS: 0.995

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9687  2008.2  9692.3    2008  9735.6  2007.6  9742.3  2007.5  9746.7  2007.4
```

```
  9748.1  2007.2    9750  2006.8    9754  2006.1  9755.9  2006.5  9759.2  2007.2
  9770.1  2007.1  9773.3    2007  9795.4  2007.8  9800.1    2008  9823.4  2008.2
  9833.7  2008.7  9835.9  2008.8  9836.6  2008.9  9838.6  2008.9  9842.4  2009.2
    9852    2010  9859.1  2010.7  9863.4  2010.5    9868  2010.2  9887.2  2009.1
  9894.4  2008.7  9916.6  2007.2  9916.7  2007.2  9918.1  2007.2    9929  2007.4
  9947.7    2008  9951.9  2008.2    9956  2008.4  9959.5  2008.3  9966.8  2008.2
    9989 2007.81  9995.3  2007.7   10000  2007.6   10006  2007.9 10009.8  2008.1
 10025.3  2009.1 10029.7  2009.3 10040.5  2009.7 10042.1  2009.8 10043.2  2009.8
   10049  2009.8 10052.3  2009.7 10055.2  2009.8 10060.1  2009.9 10070.4  2009.9
 10072.9  2009.8 10074.9  2009.6 10080.4  2008.8 10084.3  2009.2 10092.6    2010
 10100.4  2009.7 10111.1  2009.4 10114.4    2010 10116.9  2010.3 10124.9  2010.3
 10127.5  2010.3   10133  2010.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9687     .07    9989    .045   10006     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9989   10006              208     204     200             .1       .3
Left Levee      Station=  9859.1      Elevation=  2010.7

CROSS SECTION          RIVER: W10.0555
REACH: R0100              RS: 0.956

INPUT
Description:
Station Elevation Data    num=      73
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9767.8  2001.5    9776  2001.4  9777.6  2001.3  9781.7  2001.3  9785.3  2001.1
  9790.1  2000.9  9792.6  2000.8  9798.4    2001  9805.4  2001.2  9811.3  2001.4
  9812.8  2001.5  9820.1  2001.8  9822.9    2002  9823.6    2002  9831.7  2002.2
  9839.9  2002.8  9842.4    2003  9846.9  2003.3    9856  2004.4  9859.3  2004.7
  9867.3  2004.5  9891.8  2003.8  9906.8  2004.7  9912.8    2005  9914.5    2005
  9917.7  2005.3  9922.8  2005.1  9924.4  2005.1  9932.2  2004.7  9937.2  2004.5
  9951.2  2003.9  9959.1  2003.6  9971.7  2003.1  9979.9  2002.7  9981.7  2002.8
  9987.8    2003  9991.1  2003.1  9999.8  2002.4   10000  2002.4 10007.3  2002.6
   100132002.771   10024  2003.1 10044.1  2004.3 10055.4  2004.7 10057.4  2004.7
 10064.1  2004.6 10080.7  2004.4 10085.1  2004.1 10090.3  2003.6 10092.4  2003.6
 10101.6  2004.4 10108.9  2005.1 10117.6    2005 10121.9    2005 10124.3    2005
 10135.5  2004.9 10146.3  2004.8   10150  2004.4 10152.4  2004.2 10155.4  2004.6
 10158.4  2004.9 10161.1  2004.9 10167.7  2004.4 10174.8  2004.2 10175.4  2004.2
 10176.1  2004.2 10184.5  2004.7   10208  2004.6 10216.9  2004.6 10218.9  2004.5
 10226.7  2004.4 10232.5  2004.7 10235.6  2004.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9767.8     .07  9991.1    .045   10013     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9991.1   10013              206     206     206             .1       .3
Left Levee      Station=  9917.7      Elevation=  2005.3
Right Levee     Station= 10055.4      Elevation=  2004.7

CROSS SECTION          RIVER: W10.0555
REACH: R0100              RS: 0.917

INPUT
Description: XS upstream of split S10.0558
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9960  1999.2    99801998.494    9994    1998   10000  1997.9   10005    1998
   10008 1998.14   10020  1998.7   10038    1998   10049  1998.3   10104  1998.2
   10132    1999   10150  1998.7   10172  1998.8   10190    1998   10203  1999.1
```

```
   10235  1999.5   10275  1999.2   10330    2000

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9960     .07    9980    .045   10020     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9980   10020                 0       0       0             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10132   10330    2000

CROSS SECTION          RIVER: W10.0555
REACH: R0200              RS: 0.884

INPUT
Description: Q = 183 cfs left split flow at S10.0558
Station Elevation Data    num=      59
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9783  1992.3  9784.3  1992.2  9786.3  1992.3  9796.3  1991.9  9803.8  1991.5
  9805.7  1991.4  9814.9  1991.4  9825.7  1991.1  9828.8    1991  9833.4  1990.9
  9838.1  1990.8  9840.1  1990.6  9850.3  1990.4  9851.7  1990.4  9852.8  1990.5
  9855.1  1990.8  9856.2  1990.9  9857.5  1990.9  9859.5  1990.3  9860.1  1990.1
    9863  1990.6  9865.4  1991.1  9872.6  1991.6  9877.3    1992  9881.8  1992.3
  9891.7  1993.2  9893.4  1993.3  9894.9  1993.2  9903.7  1993.1  9907.3  1993.1
  9912.1    1993  9923.7  1993.9  9925.6  1994.1  9927.5  1994.1  9932.3    1994
  9960.4  1993.3  9965.7  1993.2  9976.5  1992.4  9978.7  1992.2  9982.7  1992.4
  9985.5  1992.4    9989  1992.2  9992.4  1992.1   10000  1991.9 10002.5  1992.2
 10008.4  1992.9 10020.5  1992.7 10023.7  1992.6 10024.4  1992.6 10033.4  1992.1
 10033.7    1992 10036.4  1992.6 10044.7  1992.8   10050    1993 10058.6  1992.8
   10060  1992.7 10065.1  1993.1 10066.4  1993.3 10078.1  1993.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9783     .07  9982.7    .045 10008.4     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9982.7 10008.4                451     451     451             .1       .3
Left Levee      Station=  9927.5      Elevation=  1994.1

CROSS SECTION          RIVER: W10.0555
REACH: R0200              RS: 0.799

INPUT
Description:
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9772.3  1982.7  9783.4  1981.8  9789.9  1981.7  9797.3    1982    9805  1982.1
  9814.1  1981.6    9818  1981.3  9830.8  1980.5  9841.9    1980    9847  1979.8
  9849.3  1979.6  9855.6  1979.9  9857.8  1980.1  9860.2  1980.3  9867.6  1980.2
  9873.5  1980.2  9881.9  1980.1  9883.1  1980.1  9884.2    1980  9895.1  1979.7
  9902.6  1979.7  9906.3  1979.1  9910.2  1978.6  9912.6  1978.9  9914.6  1979.4
    9931    1980  9935.3  1980.2  9949.6  1980.3  9950.3  1980.3  9951.2  1980.3
  9951.9  1980.3  9960.4  1980.3  9980.5  1980.2  9983.2  1980.2  9998.4  1979.4
   10000  1979.3 10008.1  1979.5 10013.4  1979.8   10027  1980.3 10034.9  1980.6
 10072.9  1981.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9772.3     .07  9983.2    .045 10013.4     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9983.2 10013.4                473     473     473             .1       .3
```

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Left Levee      Station=  9860.2      Elevation=  1980.3

CROSS SECTION          RIVER: W10.0555
REACH: R0200              RS: 0.710

INPUT
Description:
Station Elevation Data    num=      27
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9889.1  1969.3    9902  1968.9  9907.7  1968.5  9923.5  1967.8  9924.5  1967.5
  9940.6  1968.1  9957.1  1968.1  9962.9  1967.5  9963.2  1967.5  9964.3  1967.5
  9981.1  1967.7  9985.1  1967.4    9992  1967.1  9995.4    1967   10000  1966.9
 10002.9  1967.3 10007.4  1967.7 10024.1  1968.1 10027.6  1968.1 10031.9  1968.2
 10033.2  1968.2 10035.4  1968.2 10069.3  1969.2 10073.5  1969.4 10075.3  1969.4
 10077.5  1969.5 10083.3  1969.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9889.1     .07  9985.1    .045 10007.4     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9985.1 10007.4              207     207     207              .1       .3

CROSS SECTION          RIVER: W10.0555
REACH: R0200              RS: 0.670

INPUT
Description:
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9972    1964    99921962.786   10000  1962.3   100071962.611   10018  1963.1
   10029  1963.3   10045  1962.8   10057    1963   10065  1962.5   10070  1963.3
   10097  1963.2   10108  1962.2   10156    1964

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9972     .07    9992    .045   10007     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9992   10007              260     260     260              .1       .3

CROSS SECTION          RIVER: W10.0555
REACH: R0200              RS: 0.621

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9884.2  1957.5  9892.6  1957.2  9915.1  1955.9  9919.1  1955.8  9923.1  1955.8
  9924.1  1955.8  9925.7  1955.6  9929.4  1954.9  9932.5  1955.5  9934.8  1956.1
  9955.2  1956.2  9958.8  1956.3  9960.7  1956.3  9960.9  1956.3  9961.3  1956.3
  9962.1  1956.3  9967.4  1956.1  9994.5  1955.4    9998  1954.7   10000  1954.5
 10003.1    1955 10004.4    1955 10005.7  1955.2 10007.1  1955.2 10009.3  1955.1
 10013.1  1955.3 10014.3  1955.4 10016.3  1955.4 10018.8  1955.5 10025.2    1956
 10025.7    1956 10026.2    1956 10041.8  1956.4   10044  1956.5 10044.1  1956.5
 10044.4  1956.5 10051.9  1955.8 10057.9  1955.6 10060.1  1955.6 10061.7  1955.8
 10066.3  1956.1 10070.4  1956.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9884.2     .07  9994.5    .045 10007.1     .07

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

```
        9994.5 10007.1              496     496     496             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
  9884.2  9934.8  1956.8
Left Levee      Station=  9962.1      Elevation=  1956.3

CROSS SECTION          RIVER: W10.0555
REACH: R0200              RS: 0.527

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9744.1  1943.7  9745.7  1943.7  9753.4  1943.4  9759.9  1943.3  9762.2  1943.2
  9766.5    1943  9772.5  1942.2  9774.1    1942  9781.1  1942.4  9787.1  1942.7
  9796.4  1942.5  9800.3  1942.4  9809.5  1942.2    9814  1942.1  9819.7    1942
  9826.5  1941.8  9831.4  1941.8  9838.2  1941.8    9845  1941.9    9848    1942
  9864.4  1942.2  9864.5  1942.2  9864.6  1942.2  9872.9  1941.5    9879  1940.8
  9882.3  1940.5  9889.9  1940.8  9891.4  1940.9  9891.7  1940.9  9892.2  1940.9
    9894  1940.7  9898.9  1940.5  9902.4  1940.3    9905  1940.8  9908.5  1941.3
  9917.8  1941.6  9926.7  1941.8  9927.9  1941.8    9933    1942    9936  1942.1
  9944.1  1942.2  9959.7  1942.3  9959.8  1942.3  9963.4  1941.2  9963.9  1941.3
  9965.5  1941.5    9967  1941.9  9984.9  1942.4  9987.7  1942.4  9991.1  1942.5
    9998  1941.4   10000  1941.2 10003.3    1942 10006.6  1942.6 10008.9  1942.6
 10029.7  1942.9 10029.9  1942.9 10030.5  1942.9 10030.6  1942.9 10030.9  1942.9
 10031.2  1942.9 10039.3  1942.8 10050.6  1942.6 10055.9  1943.2 10061.1  1943.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9744.1     .07  9991.1    .045 10008.9     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9991.1 10008.9              502     502     502             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
  9744.1  9864.6    1943
Left Levee      Station=  9864.6      Elevation=  1942.2

CROSS SECTION          RIVER: W10.0555
REACH: R0200              RS: 0.432

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9870.6  1929.3  9893.3  1928.1  9895.1    1928  9898.5  1927.9  9908.6  1927.7
    9912  1927.5  9914.3  1927.4  9914.5  1927.4  9918.6  1927.2  9920.5  1927.1
  9926.2  1926.8  9930.9  1926.5  9937.2  1927.4    9940  1927.7  9947.5  1927.7
  9953.7  1927.7  9958.6  1927.6  9980.8  1927.6  9993.1  1927.7  9999.5  1926.8
   10000  1926.7 10008.3  1927.2 10008.7  1927.2 10017.6  1927.3   10020  1927.3
 10025.6  1927.3 10037.4  1927.9 10048.2  1927.5 10054.6  1927.4 10069.1  1927.1
 10078.2  1926.9 10081.3  1925.9 10084.1  1925.1 10086.8  1925.9 10091.3  1927.1
   10095  1927.3 10098.5  1927.4 10106.9  1927.6 10110.6  1927.7 10119.7  1927.9
 10119.9  1927.9 10120.2  1927.9 10121.9    1928 10127.8  1928.3 10129.2  1928.3
 10133.2  1928.3 10145.2  1928.3 10148.4    1928 10156.2  1927.1 10160.8  1927.6
 10165.6  1928.4 10180.2  1928.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9870.6     .07  9993.1    .045 10008.7     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9993.1 10008.7              291     291     291             .1       .3
```

```
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
  9870.6    9940  1928.5 10127.8 10180.2  1928.5
Left Levee      Station=  9993.1      Elevation=  1927.7
Right Levee     Station= 10127.8      Elevation=  1928.3

CROSS SECTION          RIVER: W10.0555
REACH: R0200              RS: 0.377

INPUT
Description:
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9935    1921    9956    1920    9967    1919    9977  1919.2    99901918.522
   10000    1918   10010  1918.5   10016  1918.8   10033    1918   10050    1918
   10088    1920   10095  1920.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9935     .07    9990    .045   10010     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10010              193     193     193             .1       .3
Left Levee      Station=    9977      Elevation=  1919.2

CROSS SECTION          RIVER: W10.0555
REACH: R0200              RS: 0.340

INPUT
Description:
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9900  1916.6  9902.7  1916.5  9917.7  1915.8  9930.8  1915.1  9944.7  1915.9
    9950  1916.2    9961  1915.5  9970.9  1914.9    9985    1914  9988.1  1913.7
  9989.3  1913.4  9999.5  1911.9   10000  1911.9 10003.3  1912.7 10006.4  1913.2
 10023.9  1914.3 10033.6  1914.9 10056.6  1913.8 10058.1  1913.7 10059.8  1913.5
 10067.6  1912.5 10075.7  1913.9 10076.9  1914.1 10079.2  1914.1 10082.8  1914.1
 10104.4    1914   10115  1913.8 10122.2  1914.3   10128  1914.7 10139.6  1914.5
 10139.7  1914.5 10139.8  1914.5 10148.7  1913.9   10159  1914.4 10173.1  1915.3
 10178.2  1915.4
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9900     .07  9989.3    .045 10006.4     .07
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9989.3 10006.4              517     517     517             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 10076.9 10178.2    1915
Right Levee     Station=   10128      Elevation=  1914.7

CROSS SECTION          RIVER: W10.0555
REACH: R0200              RS: 0.242
INPUT
Description:
Station Elevation Data    num=      35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9850.8    1902  9873.7  1901.3  9892.3  1900.8  9898.4  1900.7  9902.8  1900.5
  9908.1  1900.2  9910.2  1900.1  9914.8    1900  9918.7  1900.2  9920.4  1900.2
  9923.4    1900  9929.8  1899.7  9932.3  1899.5    9944    1900  9969.3  1901.4
  9975.4    1901  9991.5  1899.9  9993.7  1899.7  9995.5  1899.4   10000  1898.7
 10009.1  1899.8 10010.4  1899.9   10011  1899.9 10015.2  1899.9 10019.5  1899.8
 10025.1  1900.4 10031.5    1901 10048.4    1901 10048.7    1901 10052.1  1901.1
 10067.4  1901.4 10068.7  1901.4 10077.4  1901.4 10086.8  1901.5 10093.3  1901.6
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9850.8     .07  9993.7    .045 10009.1     .07
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9993.7 10009.1              449     449     449             .1       .3
Left Levee      Station=  9969.3      Elevation=  1901.4
CROSS SECTION          RIVER: W10.0555
REACH: R0200              RS: 0.157
INPUT
Description:
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
    9804    1890    9835  1889.4    9853    1890    9892  1889.4    9914  1889.3
    9935    1888    9963    1890    9990    1888   10000  1887.7   10007    1888
   10034  1889.8   10070    1890

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9804     .07    9990    .045   10007     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10007              424     424     424             .1       .3
Left Levee      Station=    9963      Elevation=    1890

CROSS SECTION          RIVER: W10.0555
REACH: R0200              RS: 0.077

INPUT
Description:
Station Elevation Data    num=      10
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9868    1880    9903    1878    9916  1876.7    9927  1876.8    9990 1876.196
   10000  1876.1   10008 1876.34   10030    1877   10043  1876.7   10065  1877.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9868     .07    9990    .045   10008     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10008              303     298     293             .1       .3
Right Levee     Station=   10030      Elevation=    1877

CROSS SECTION          RIVER: W10.0555
REACH: R0200              RS: 0.021

INPUT
Description:
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9953.7    1870  9970.7  1869.2  9974.2    1869  9980.7  1868.7  9983.3  1868.5
    9992 1868.031   10000  1867.6 10008.9  1868.2   10011  1868.4 10022.1  1868.7
 10030.9  1868.7 10039.8  1868.8 10047.8  1869.1 10050.8  1869.2   10076  1869.3
   10120    1870

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9953.7    .065    9992    .035 10008.9    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9992 10008.9                0       0       0             .1       .3

CROSS SECTION          RIVER: W10.0558
REACH: R0100              RS: 0.186

INPUT
Description: Q = 175 cfs right split flow at S10.0558
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9941.6  1993.5  9949.1  1993.3  9966.2  1993.1  9966.7  1993.1  9968.2  1993.1
  9973.1  1992.7  9975.7  1993.1  9979.3  1993.3  9989.4    1993   10000  1992.4
   10005  1992.5 10019.7    1993 10025.4  1992.8 10046.3  1992.1 10051.5  1992.2
 10054.2  1992.1 10059.3  1992.5 10059.7  1992.5 10060.1  1992.6 10065.4  1992.8
 10076.8  1992.9 10086.8  1993.1 10091.7  1993.1 10109.6  1993.2 10114.7  1992.8
 10119.8  1992.1 10130.7  1993.7 10131.2  1993.8 10131.5  1993.8 10134.1  1993.8
 10167.3  1993.5   10168  1993.5 10187.5  1993.6
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9941.6     .07  9989.4    .045   10005     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9989.4   10005              404     404     404             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10075 10187.5  1993.7
Left Levee      Station=  9941.6      Elevation=  1993.5
Right Levee     Station= 10131.2      Elevation=  1993.8

CROSS SECTION          RIVER: W10.0558
REACH: R0100              RS: 0.109

INPUT
Description:
Station Elevation Data    num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9977.6  1981.6  9981.7  1981.4  9995.9  1980.5  9998.9  1980.4   10000  1980.4
 10009.6  1980.6 10013.3    1981 10016.9    1981 10023.2    1981 10028.5  1980.8
 10030.1  1980.8 10038.3    1981 10039.9  1981.2   10057  1981.5 10066.1  1981.4
 10086.8  1980.7 10090.3  1980.6   10092  1980.4 10114.1  1980.9 10121.5  1981.1
 10130.2  1981.4 10139.8  1981.7 10140.7  1981.7 10143.2  1981.9 10150.8  1981.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9977.6     .07  9995.9    .045 10009.6     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9995.9 10009.6              314     309     274             .1       .3

CROSS SECTION          RIVER: W10.0558
REACH: R0100              RS: 0.050

INPUT
Description:
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9918  1974.3    9959    1974    9985  1973.5   10000  1972.2   10010  1972.6
   10015  1972.9   10030  1972.4   10037  1973.4   10073  1973.4   10099  1973.2
   10112  1973.9   10138    1974   10156  1974.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9918     .07    9985    .045   10010     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9985   10010                 0       0       0             .1       .3

CROSS SECTION          RIVER: W12.0100
REACH: R0100              RS: 0.083

INPUT
Description: Q = 179 cfs right split at S12.0100
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9981  1964.4    9984    1964    9995    1962   10000    1961   10006    1962
   10023  1963.7

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

```
    9981    .065    9995     .04   10006    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995   10006               195     195     195             .1       .3

CROSS SECTION          RIVER: W12.0100
REACH: R0100              RS: 0.046

INPUT
Description:
Station Elevation Data    num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9947  1958.3    9971  1957.5    9980  1957.8    9995  1956.6   10000  1956.2
   10006 1956.67   10023    1958   10056    1960

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9947    .065    9995     .04   10006    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995   10006                85      85      85             .1       .3

CROSS SECTION          RIVER: W12.0100
REACH: R0100              RS: 0.030

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9955    1957    9980    1956    9995  1954.5   10000    1954   100051954.417
   10024    1956   10052    1958

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9955    .065    9995     .04   10005    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995   10005                 0       0       0             .1       .3

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 2.050

INPUT
Description: Q = 600 cfs from HEC-1 FCD 93-07 = D578R + D532M
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9960  2124.2    9972    2124    9993 2122.32    9997    2122   10000  2121.8
   10005    2122   10016  2122.4   10032    2122   10077    2124   10110  2124.8
   10132    2125   10153    2124   10187  2123.3   10218  2124.1   10255  2123.3
   10270    2124   10293  2123.5   10317    2124   10361    2126

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9960    .065    9993     .04   10016    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9993   10016               345     344     350             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10218   10361    2125
Right Levee     Station=   10218      Elevation=  2124.1

CROSS SECTION          RIVER: W11.0100
```

```
REACH: R0100                RS: 1.984

INPUT
Description:
Station Elevation Data     num=      17
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9837  2114.6    9853    2114    9869  2113.5    9888    2114    9920  2114.2
    9927    2114    9934  2113.1    9945    2114    9960  2114.2    9975    2114
   10000  2112.6   10040    2114   10067  2114.5   10083    2114   10110    2113
   10140    2114   10160  2114.5

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9837    .065    9975     .04   10040    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9975   10040               463     463     463             .1       .3

CROSS SECTION          RIVER: W11.0100
REACH: R0100                RS: 1.897

INPUT
Description:
Station Elevation Data     num=      79
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9849.06  2103.1 9852.66  2102.9 9870.16  2101.9 9873.26  2101.7 9898.96  2101.3
 9908.46    2101 9911.66    2101 9916.76  2100.9 9922.16  2100.8 9923.56  2100.8
 9926.96  2100.9 9939.06  2101.1 9943.06  2100.9 9950.86  2100.8 9952.76  2100.3
 9954.46    2100 9958.76  2100.4 9962.16  2100.7 9963.16  2100.8 9965.66  2100.6
 9973.96    2100 9977.16  2100.7 9977.56  2100.8 9980.96  2100.6 9987.86  2100.1
 9988.66  2100.1 9989.56    2100 9998.36  2099.410000.86  2099.310009.06  2099.4
10013.46  2100.110016.66  2100.610026.46  2100.610030.36  2100.610037.56  2100.8
10038.76  2100.810043.66  2100.410047.16  2100.810051.06    210110052.66    2101
10058.26  2100.510060.36  2100.910061.86  2101.110067.66  2101.110072.26    2101
10077.56  2100.510079.76  2100.210087.36  2101.110088.16  2101.210088.46  2101.2
10096.06  2100.810100.76  2100.410105.56  2100.410110.66  2100.610118.06  2100.5
10118.86  2100.510125.86  2101.110126.96  2101.110140.06  2101.410141.86  2101.4
10143.16  2101.410149.16  2101.410153.36  2101.310166.56  2101.910186.36  2102.5
10201.26  2102.110235.16  2100.810237.96  2100.710244.96  2100.210250.26  2099.8
10261.76  2100.710264.56  2100.910280.86  2101.510312.66  2102.610319.06  2102.8
10320.16  2102.910329.86  2103.310348.66  2103.410370.06  2103.1

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9849.06    .065 9989.56     .0410013.46    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9989.5610013.46               480     480     480             .1       .3

CROSS SECTION          RIVER: W11.0100
REACH: R0100                RS: 1.806

INPUT
Description: Q = 541 cfs from HEC-1 FCD 93-07 = D532M + D573R
Station Elevation Data     num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9970.13  2089.3 9978.73  2087.7 9980.23  2087.5 9986.23  2087.510000.03  2087.4
10010.53  2087.210012.23  2087.210017.23  2087.610023.93    208810030.93  2088.1
10031.13  2088.110031.53  2088.110058.13  2088.210058.83  2088.310077.53  2089.9
10080.43  2089.910097.73  2089.810099.83  2089.710111.13  2089.410116.33  2089.3
10116.83  2089.310128.43  2089.410129.63  2089.510130.63  2089.510161.53  2089.7
10164.73  2089.710170.03  2089.610173.73  2089.510177.03  2089.510219.03  2090.3
10222.63  2090.410235.83  2088.210240.23  2087.510245.63  2088.510246.93  2088.8
```

```
10257.43    208910259.13    208910263.73  2089.110272.13  2089.410276.03  2088.9
10280.03  2088.410289.53  2089.610289.73  2089.710289.83  2089.710291.33  2089.8
10307.43  2090.810310.63  2090.910312.63    209110329.43  2091.510332.13  2091.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9970.13    .065 9986.23     .0410010.53    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9986.2310010.53               483     483     483             .1       .3

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 1.715

INPUT
Description:
Station Elevation Data    num=      58
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9845.86  2076.6 9846.36  2076.6 9856.16  2076.8 9860.76    2077 9867.96  2077.3
 9870.76  2077.4 9879.86  2077.8 9889.26  2078.2 9890.86  2078.2 9894.96  2078.2
 9902.26  2078.2 9905.46  2078.2 9911.86    2078 9914.16    2078 9936.36    2077
 9938.06    2077 9939.56  2076.9 9960.26    2076 9965.86  2075.7 9968.36  2075.7
 9969.96  2075.7 9972.76  2075.7 9974.86  2075.8 9984.26  2074.8 9986.76  2074.5
 9987.46  2074.5 9988.06  2074.5 9996.76    207510000.96  2074.810005.06  2074.7
10005.57 2075.7710007.86  2076.910008.96  2077.610019.06  2077.810021.66  2077.8
10022.16  2077.810029.86  2077.810032.06  2077.910037.06  2077.910042.26  2077.8
10044.26  2077.810046.86  2077.810067.96  2076.710068.16  2076.610068.46  2076.6
10078.56  2076.510083.96  2076.410104.36  2074.610112.96  2074.210114.66  2074.4
10132.86    207610138.96  2076.110184.26  2075.9   10211  2074.7   10231  2075.7
   10241    2075   10250    2076   10264  2076.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9845.86    .065 9974.86     .0410005.57    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9974.8610005.57               180     180     180             .1       .3

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 1.681

INPUT
Description:
Station Elevation Data    num=      40
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9905.38  2074.5 9911.38  2074.3 9916.68  2074.3 9921.88  2074.1 9949.98  2073.4
 9970.28  2072.9 9973.08  2072.9 9984.58  2072.4 9986.08  2072.3 9986.68  2072.1
 9989.61 2071.02 9993.18  2070.1 9996.08  2070.3 9998.38  2070.5   10000  2070.4
10002.88  2070.310005.38  2070.210009.68  2070.710017.08  2071.510028.88  2071.5
10030.88  2071.510032.18  2071.510034.18  2071.410041.38  2071.210047.98  2071.1
10058.18  2071.110064.88    207110072.58  2071.210075.78  2071.210078.88  2071.2
10085.08  2071.810086.68  2071.910088.48  2071.9   10148    2070   10165    2069
   10183    2070   10245  2071.6   10273  2070.3   10311  2071.2   10330  2071.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9905.38    .065 9989.61     .0410009.68    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9989.6110009.68               219     219     219             .1       .3

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 1.639
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```
INPUT
Description:
Station Elevation Data    num=      75
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9878.61  2067.6 9890.81  2067.8 9895.91  2067.6 9903.11  2067.5 9934.21  2066.1
 9942.41  2065.4 9945.11  2065.2 9952.31  2065.3 9968.51  2065.6 9981.71  2065.3
 9991.21  2065.1 9992.41    2065 9994.51  2064.9 9999.21  2064.9 9999.71  2064.9
10000.01  2064.910003.01  2064.810006.41  2065.510007.91  2065.910011.11  2065.9
10015.71    206610021.81  2065.810025.31  2065.710030.01  2065.810038.21  2064.8
10039.71  2064.710040.51  2064.810046.51  2065.810054.01  2064.910054.31  2064.9
10054.81  2064.810059.61  2063.810063.71    206410074.01  2064.210078.91  2064.3
10081.71  2064.410085.11    206410088.61  2063.510090.11  2063.610094.31  2063.9
10133.71  2066.910146.11  2066.810155.61  2066.610164.21  2065.110166.81  2064.6
10169.11  2064.910173.71  2065.410178.81  2065.210181.41  2064.910187.81  2065.6
10190.51  2065.910193.51  2065.910200.41  2065.910207.51  2065.910218.01  2064.7
10218.71  2064.610220.31  2064.910226.31  2065.910228.11  2065.910237.51  2066.1
10241.81  2066.410248.11  2065.710249.51  2065.510260.21  2066.510261.11  2066.6
10261.61  2066.610275.21  2066.710278.21  2066.110282.71  2065.310286.01  2065.7
10290.31  2066.510301.71    206710309.61  2067.310316.61  2067.710319.21  2067.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9878.61    .065 9981.71     .0410011.11    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9981.7110011.11              340     317     280             .1       .3
Right Levee     Station=10241.81      Elevation=  2066.4

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 1.579

INPUT
Description:
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9930  2058.3    9950    2058    9978  2057.1   10000  2056.2   10010  2057.6
   10020  2057.5   10030    2058   10042  2058.4   10060    2058   10077    2057
   10090  2057.3   10110  2056.8   10140    2058   10170  2058.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9930    .065    9978     .04   10010    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9978   10010              549     549     549             .1       .3

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 1.475

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9870.81  2042.5 9872.11  2042.5 9879.91  2042.8 9883.91  2042.9 9887.31  2043.1
 9895.01  2043.2 9899.11  2043.3 9912.31  2043.6 9924.21  2043.8 9928.51  2043.9
 9938.91  2044.2 9941.01  2044.2 9944.11  2044.1 9969.41    2044 9978.71  2043.3
 9983.31  2042.8 9990.96 2042.28 9995.91    2042 9999.81  2041.810000.01  2041.8
10008.61  2042.310015.51  2042.810019.71  2042.810035.91  2042.310043.01  2042.1
10045.21  2042.110054.01  2042.410071.71  2043.210078.31  2042.910095.11  2041.8
10096.01  2041.810099.01  2041.410106.21  2040.910108.81  2041.210113.91    2042
10132.81  2043.410144.51  2043.810153.21  2043.610163.51  2043.410172.51  2043.4
10177.91    204310180.21  2042.810180.81  2042.810182.41  2042.410186.41  2041.8
```

```
10189.51  2041.310190.51  2041.110193.91  2041.210195.21  2041.210202.41  2042.3
10204.31  2042.610206.21  2042.710235.11  2044.410236.11  2044.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9870.81    .065 9990.96     .0410008.61    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9990.9610008.61              332     332     332             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
10071.7110236.11    2044
Left Levee      Station= 9941.01      Elevation=  2044.2

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 1.412

INPUT
Description: Q = 536 cfs from C580 HEC-1 FCD 93-07
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9867.24  2036.2 9868.84  2036.2 9881.14  2035.7 9885.24  2035.6 9887.14  2035.5
 9891.94  2035.4 9899.24  2035.2 9904.24  2034.9 9907.34  2034.8 9918.14  2034.3
 9922.04  2034.1 9926.54  2033.7 9931.54  2033.5 9936.84  2033.8 9953.54  2034.7
 9955.34  2034.8 9956.54  2034.9 9981.94  2033.2 9986.64  2032.9 9990.34  2032.4
 9990.74  2032.310000.14  2032.110002.14  2032.110008.14  2032.210012.34  2032.2
10019.24  2032.610022.64    203310034.04  2032.710036.74  2032.710045.94  2033.1
10056.64  2033.710060.64  2033.910082.84    203310087.84  2032.610102.44  2033.2
10114.14  2033.510119.24  2033.710123.44  2033.410141.24  2032.310149.54  2031.8
10151.14    203210161.74  2033.310172.54  2031.810174.94  2031.510176.04  2031.6
10183.24  2032.710226.04  2034.510226.34  2034.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9867.24    .065 9990.34     .0410012.34    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9990.3410012.34              114     114     114             .1       .3
Left Levee      Station= 9956.54      Elevation=  2034.9

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 1.391

INPUT
Description:
Station Elevation Data    num=      54
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9840.36  2030.4 9852.86  2031.5 9862.36  2032.5 9868.66  2032.4 9878.16  2032.2
 9885.26  2032.4 9886.86  2032.5 9891.46  2032.6 9893.86  2032.6 9903.46    2032
 9908.76  2031.9 9915.26  2031.6 9919.36  2031.5 9922.06  2031.3 9925.86  2031.2
 9930.46  2030.9 9936.96  2030.7 9942.86  2030.1 9945.06    2030 9950.16  2029.8
 9959.56  2029.7 9970.86  2029.4 9986.06  2029.2 9987.86  2029.4 9991.86  2029.5
 9997.26  2029.3 9999.96  2029.210003.46  2029.210013.56  2029.210015.26  2029.2
10018.37 2029.4810025.16    203010042.56  2031.210053.76  2031.310058.66  2031.3
10063.56    203110074.36  2030.110082.66  2029.410084.36  2029.110088.06  2028.5
10090.76  2028.710102.36  2029.710109.16  2029.410130.26  2028.310142.76  2029.1
10156.86  2029.910173.66  2030.710180.26    203110204.46  2029.910212.36  2029.6
10219.76  2030.110233.56  2030.910240.16  2031.310242.76  2031.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9840.36    .065 9997.26     .0410018.37    .065
```

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Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9997.2610018.37              395     395     395             .1       .3
Left Levee      Station= 9893.86      Elevation=  2032.6
Right Levee     Station=10180.26      Elevation=    2031

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 1.316

INPUT
Description:
Station Elevation Data    num=      11
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9955  2020.7    9961    2020    99852019.385   10000    2019 10009.12019.135
   10027  2019.4   10047  2018.8   10087  2019.8   10126  2018.4   10153    2020
   10166  2020.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9955    .065    9985     .04 10009.1    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9985 10009.1              499     499     499             .1       .3

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 1.221

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9834.12  2008.5 9841.12  2008.1 9855.82  2007.3 9873.52  2006.3 9875.42  2006.2
 9880.42  2005.3 9882.22    2005 9886.92  2005.7 9889.12  2006.1 9891.02  2006.1
 9897.52  2006.6 9899.62  2006.6 9900.62  2006.6 9901.72  2006.7 9914.42  2006.8
 9916.62  2006.8 9917.62  2006.8 9923.22  2006.6 9933.82  2006.2 9948.52  2005.5
 9959.02  2005.9 9959.62  2005.9 9959.82  2005.9 9964.46  2005.7 9967.62 2005.09
 9971.31 2005.15 9977.52  2005.6 9978.02  2005.6 9980.42  2005.6 9995.62  2004.8
 9999.92  2004.710004.82  2004.710008.32  2004.810009.42  2004.910014.42  2005.1
10017.22  2005.210024.02  2005.110024.82  2005.110035.12  2006.110041.62  2006.8
10043.22  2006.810053.52  2006.510066.42  2006.310067.92  2006.210074.52  2006.7
10076.32  2006.810099.32  2008.110102.62  2008.510120.62    2010

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9834.12    .065 9995.62     .0410014.42    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9995.6210014.42              407     407     407             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
 9834.12 9917.62  2007.210041.6210120.62  2007.2

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 1.144

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9776.74  1997.1 9777.34  1997.1 9782.64  1997.1 9794.64  1996.5 9799.74  1996.3
 9805.44  1995.7 9817.54  1994.7 9818.14  1994.7 9819.14  1994.6 9830.04  1994.5
 9833.64  1994.5 9841.94  1994.2 9851.64  1994.4 9854.74  1994.4 9855.94  1994.5
 9860.74  1994.8 9881.94  1996.4 9893.34    1997 9893.84    1997 9894.64    1997
 9898.04  1996.9 9905.34  1996.8 9913.54  1996.6 9930.54  1995.9 9932.24  1995.8
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 9935.44  1995.7 9942.84  1995.2 9949.84  1994.7 9955.34  1994.9 9979.84  1995.5
 9985.44  1995.2 9990.44  1995.1 9995.64  1993.9 9995.84  1993.810000.04  1993.5
10019.34  1994.610023.34  1994.910030.04  1995.610037.54  1995.510044.54  1995.3
10048.84  1994.810052.74  1994.310057.44  1995.110057.74  1995.110057.94  1995.1
10090.04  1998.410103.54  1999.610104.04  1999.610126.84    199910127.44    1999
10128.44  1998.910128.64  1998.910129.64  1998.810156.64  1996.410158.44  1995.9
10161.04  1995.310162.44  1995.510166.24  1995.710168.24  1995.610169.94  1995.9
10173.14  1996.610176.44  1996.910181.54  1997.110218.44  1999.310219.94  1999.3
10221.94  1999.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9776.74    .065 9995.64     .0410019.34    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9995.6410019.34              496     496     496             .1       .3
Left Levee      Station= 9894.64      Elevation=    1997
Right Levee     Station=10103.54      Elevation=  1999.6

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 1.050

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9746.52  1983.7 9751.72  1983.4 9777.12  1982.2 9778.92  1982.1 9781.32  1981.9
 9786.32  1981.3 9791.52  1981.6 9797.12  1981.9 9801.22  1981.9 9811.72    1982
 9816.62  1982.5 9821.72  1982.8 9832.02  1983.5 9836.92  1983.9 9845.72  1984.4
 9853.42  1984.2 9859.42    1984 9889.72  1982.4 9904.72  1981.6 9913.42  1981.1
 9919.02    1981 9923.02  1981.3 9926.52  1981.6 9929.42  1981.4 9931.42  1981.2
 9933.52  1981.4 9939.82  1981.6 9946.12  1981.6 9949.12  1981.6 9957.42  1981.7
 9982.82  1981.9 9987.22  1982.1 9991.62  1981.8 9996.62  1981.510000.52    1982
10004.12  1982.510014.62  1983.310021.92  1983.910025.32  1984.210040.12  1984.8
10046.92  1984.810054.72  1985.110059.12  1984.910081.42  1984.410083.82  1984.4
10086.12  1984.310087.92  1984.210095.92  1983.710102.12    198310111.32  1982.5
10120.62  1982.610122.12  1982.610125.52  1982.110128.72  1981.710133.62  1982.6
10133.92  1982.710134.02  1982.710135.72  1982.810158.12  1984.310170.82  1985.5
10183.42  1986.210192.52  1986.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9746.52    .065 9987.22     .0410004.12    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9987.2210004.12              430     464     420             .1       .3
Left Levee      Station= 9845.72      Elevation=  1984.4
Right Levee     Station=10054.72      Elevation=  1985.1

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 0.963

INPUT
Description:
Station Elevation Data    num=      90
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9639.57  1971.7 9649.27    1971 9657.17  1970.4 9658.57  1970.3 9659.37  1970.2
 9667.47  1969.5 9669.97  1969.3 9703.67  1965.8 9705.87  1965.8 9707.27  1965.9
 9707.67    1966 9719.97    1968 9727.37  1969.3 9729.07  1969.6 9731.17  1969.5
 9756.37  1967.5 9758.77  1967.3 9771.77  1966.9 9783.17    1966 9784.97  1965.9
 9785.67  1965.9 9792.37  1966.2 9795.57  1966.6 9797.27  1966.8 9800.37  1967.5
 9802.37  1967.7 9803.57    1968 9808.97  1968.5 9810.27  1968.7 9817.77  1969.5
 9818.57  1969.6 9820.17  1969.8 9832.17  1971.1 9836.67  1971.6 9838.87  1971.6
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 9846.87  1971.3 9866.57    1971 9870.37  1971.4 9878.77  1971.7 9883.57  1971.8
 9898.37  1971.1 9910.07  1970.6 9933.07  1969.4 9939.17    1969 9942.97  1968.9
 9947.97  1969.1 9957.57  1969.5 9967.37  1968.3 9972.17  1967.8 9974.57  1968.2
 9979.17  1968.8 9983.47  1968.9 9985.17  1968.9 9989.27  1968.6 9993.77  1968.3
10000.07  1967.710007.88 1968.4310013.87    196910020.07  1969.810023.57  1969.7
10025.67  1969.610032.27  1969.710037.97  1969.710040.57  1969.710045.87  1969.8
10046.47  1969.810046.77  1969.810050.17    197010052.97  1970.410056.77  1970.7
10060.17    197110063.87  1971.310065.47  1971.410068.77  1971.610073.67  1972.2
10074.47  1972.210079.77  1972.410080.07  1972.410080.37  1972.410087.47  1972.9
10089.17  1973.110094.37  1973.610098.57  1973.910102.07  1974.310106.17  1974.6
10116.07  1975.110120.37  1975.410124.67  1975.710127.27  1975.910133.47  1976.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9639.57    .065 9993.77     .0410007.88    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9993.7710007.88               370     394     390             .1       .3
Left Levee      Station= 9883.57      Elevation=  1971.8
Right Levee     Station=10020.07      Elevation=  1969.8

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 0.888

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9750.6  1964.1  9770.8  1962.6  9784.8  1961.6  9792.4  1961.2  9799.8  1960.6
  9806.9    1961  9815.5  1961.5  9824.6  1961.9  9831.2  1962.3  9846.5  1962.7
  9848.4  1962.8  9848.8  1962.8  9849.7  1962.8  9851.3  1962.9  9856.6  1962.8
  9859.7  1962.5  9863.4    1962  9869.4  1961.4  9888.9  1959.6  9893.2  1959.2
    9894  1959.2  9894.6  1959.1  9899.5  1958.8  9899.8  1958.8  9901.9  1958.5
  9907.3  1957.9  9907.4  1957.9  9908.8  1957.9  9919.6  1958.1  9926.9  1958.4
  9932.9  1958.9  9934.4    1959    9935    1959  9936.4    1959  9975.3  1958.8
  9981.6  1958.6  9990.3  1957.4  9995.2  1956.8  9999.9  1956.8   10000  1956.8
 10010.6  1958.5 10014.6  1958.7   10020  1959.3 10021.3  1959.4 10033.7  1960.2
 10042.2  1960.6 10051.2  1960.8 10053.3  1960.8 10065.9  1960.4 10088.7  1959.5
 10089.4  1959.5 10092.4  1959.6 10099.9  1959.9 10102.5    1960 10109.5  1960.2
 10113.6  1960.4 10118.2  1960.6 10132.6  1961.4 10141.6  1962.2 10145.4  1962.4
 10160.8  1963.4 10160.9  1963.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9750.6    .065  9990.3     .04 10010.6    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9990.3 10010.6                91      91      91             .1       .3
Right Levee     Station= 10051.2      Elevation=  1960.8

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 0.871

INPUT
Description:
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9799.98  1961.4 9805.98    1961 9848.28  1958.8 9857.88  1957.9 9858.08  1957.8
 9863.88  1957.2 9870.98  1957.8 9893.28  1959.5 9902.98  1960.5 9903.18  1960.5
 9910.08  1959.8 9917.68  1959.1 9932.38  1957.8 9942.78  1956.9 9949.48  1956.6
 9957.48  1956.2 9967.78  1955.6 9971.68  1955.9 9976.38  1956.3 9983.38  1955.8
 9985.18  1955.6 9989.68  1955.6 9999.18  1955.410004.08  1955.110008.68  1954.9
10013.98  1956.510014.68  1956.610031.48  1956.610034.68  1956.610058.68  1956.1
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10058.98  1956.110059.08  1956.110059.28  1956.110101.48  1956.910107.08  1957.3
10117.28    195810125.98  1958.610134.78  1959.110153.58  1959.110161.58  1959.2
10177.08  1959.310186.68  1959.410189.58  1959.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9799.98    .065 9985.18     .0410013.98    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9985.1810013.98              128     128     128             .1       .3
Left Levee      Station= 9903.18      Elevation=  1960.5

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 0.847

INPUT
Description:
Station Elevation Data    num=      61
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9822.4    1958  9835.1  1957.3  9842.4  1956.9  9843.3  1956.8  9849.6  1956.1
  9850.8  1956.1  9859.3  1955.7  9860.2  1955.5  9864.1  1954.9  9869.7  1954.1
  9871.2    1954  9877.7  1953.4  9881.9    1953  9885.7  1952.6  9891.1  1952.2
  9891.3  1952.2  9891.5  1952.1  9894.5  1953.2  9894.9  1953.3  9898.6  1953.5
  9909.2  1954.2  9910.8  1954.3  9922.6  1954.3  9923.2  1954.3  9926.6  1954.5
  9935.9  1955.3  9940.3    1955    9948  1954.4  9968.4  1952.9  9977.7  1952.6
  9986.5  1952.3  9995.8  1952.3   10000  1952.3 10007.7  1952.8 10012.8  1953.2
 10015.1  1953.3 10022.2  1953.4 10025.4  1953.4 10032.2  1953.4 10045.8  1953.3
 10053.2  1953.4 10069.1  1953.5 10074.7  1953.6 10075.9  1953.6 10079.3  1953.5
 10087.7  1953.2   10090  1953.3 10093.1  1953.6 10100.7    1954 10118.2    1955
 10123.3  1955.5 10132.7  1955.9 10136.2  1955.9 10139.8  1955.9 10144.2  1955.8
 10151.3  1955.5 10166.7    1955 10170.5  1955.1 10202.7  1955.9 10209.7  1956.1
 10211.2  1956.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9822.4    .065  9977.7     .04 10007.7    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9977.7 10007.7              370     369     350             .1       .3
Left Levee      Station=  9935.9      Elevation=  1955.3

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 0.777

INPUT
Description:
Station Elevation Data    num=     147
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9627.7  1945.9    9639  1945.7  9644.2  1945.5  9645.9  1945.5    9651  1945.2
  9652.1  1945.2    9658    1945  9658.9    1945  9659.2    1945  9665.9  1944.7
    9668  1944.7  9673.1  1944.5  9676.1  1944.6  9680.2  1944.8  9683.2  1944.7
  9687.2  1944.7  9689.9  1944.7  9691.4  1944.6  9697.6  1944.6    9699  1944.6
  9700.2  1944.6    9708  1943.8  9708.2  1943.8  9708.4  1943.7  9710.5  1943.7
  9725.6  1943.1  9727.1  1942.9  9729.7  1942.7  9738.9  1941.9  9742.5  1941.8
  9746.1  1941.5  9751.9  1941.1  9754.9    1941  9761.2  1940.9  9767.4  1940.7
  9768.6  1940.6  9776.6  1940.5  9776.9  1940.5  9778.3  1940.4  9786.2  1940.7
  9790.1    1941  9793.1  1941.1  9799.5  1941.2  9801.2  1941.2  9803.4  1941.3
  9805.8  1940.9  9808.7  1940.4  9809.6  1940.3    9811  1940.2  9813.6  1940.2
  9814.1  1940.2  9819.6  1940.3  9822.8  1940.1    9825  1940.1  9827.6  1940.2
  9830.7  1940.2  9834.2  1939.8  9835.5  1939.7  9838.3  1939.6  9844.6  1940.2
    9845  1940.2  9846.3  1940.2  9849.5  1940.4  9851.2  1941.2  9853.1  1941.4
  9855.9  1941.7  9860.6  1942.3  9867.3  1943.3  9871.9  1943.9  9874.6  1944.5
    9877  1944.7  9878.6  1944.7  9880.9  1944.8  9882.5  1944.8  9884.2  1944.8
```

9887.8	1944.8	9902.4	1943.9	9905.6	1943.5	9911.5	1943	9913	1942.9
9914.4	1942.7	9916.8	1942.7	9919.5	1942.9	9924	1943.3	9933.3	1943.6
9946.1	1943.8	9951	1943.5	9959.7	1942.9	9960.9	1942.6	9963.8	1941.9
9968	1942	9978.9	1942.3	9982.2	1942.9	9982.4	1943	9987.6	1943
10000	1942.4	10001.5	1942.5	10003.2	1942.6	10018.2	1943.3	10020.8	1943.3
10023.7	1943.3	10027.9	1942.7	10028.2	1942.7	10028.4	1942.7	10036.4	1943.2
10043.6	1943.2	10052.1	1943.2	10055.6	1942.6	10057.5	1942.3	10060.1	1942.5
10061.2	1942.5	10067	1943.1	10070.1	1943.4	10075.3	1943.7	10078.3	1943.9
10080.4	1944.1	10086.4	1944.5	10111.1	1945.8	10112.2	1945.8	10113.1	1945.8
10114.8	1945.8	10127.5	1945.2	10151.4	1944.1	10162.7	1943.6	10166.2	1943.2
10167.4	1942.9	10170.3	1942	10171.7	1942.4	10174.5	1943	10176.7	1943.4
10181	1943.7	10192.3	1944.4	10199.3	1944.8	10210.5	1945.3	10222.7	1945.2
10223	1945.2	10224.7	1945.4	10237.9	1946.7	10244.7	1946.9	10247.3	1947
10256.9	1947.4	10260.3	1947.5	10266.1	1947.6	10276	1948.2	10278.6	1948.5
10280.9	1948.6	10284	1948.6						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9627.7	.065	9987.6	.04	10018.2	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.6	10018.2	398	398	398	.1	.3

Left Levee Station= 9887.8 Elevation= 1944.8
Right Levee Station= 10111.1 Elevation= 1945.8

CROSS SECTION RIVER: W11.0100
REACH: R0100 RS: 0.701

INPUT
Description:
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9935	1936.7	9944	1936	9957	1934	9967	1932.23	9990	1932.209
10000	1932.2	10010	1932.46	10050	1933.5	10089	1934	10106	1936
10125	1938								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9935	.065	9990	.04	10010	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9990	10010	371	371	371	.1	.3

CROSS SECTION RIVER: W11.0100
REACH: R0100 RS: 0.631

INPUT
Description:
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9596.9	1927	9604.4	1926.8	9614.5	1926.3	9635.6	1923.4	9637.3	1923.2
9639.1	1923	9640.1	1922.8	9641.1	1922.8	9645.7	1922.2	9646.8	1922.1
9648.2	1922.1	9650.1	1922.1	9654.9	1922.2	9658.1	1922.1	9662	1922.4
9666.8	1921.8	9672.5	1921.1	9679.3	1921.7	9695.7	1923.2	9699.6	1923.5
9715.8	1925.2	9719.9	1925.6	9724.5	1925.5	9732.9	1925.2	9749	1924.6
9754.6	1924.8	9769.1	1925.7	9771.1	1925.5	9778.2	1926.3	9782.2	1926.6
9786.8	1927.1	9789.1	1927.3	9790	1927.3	9808.3	1926.4	9856.4	1924.1
9860.1	1924.1	9866.9	1924.1	9869.3	1924.1	9873.6	1924	9881.9	1923.8
9884.3	1923.5	9889.2	1922.9	9889.8	1923	9892.8	1923.9	9903	1923.4
9910.3	1923.1	9921.2	1923.4	9945.8	1924.3	9956.5	1924.1	9966.9	1923.8
9975	1924.5	9975.8	1924.6	9977.3	1924.5	9981.4	1924.5	9986	1924.2
9990	1924	10000	1923.8	10005.6	1924	10010	1924.4	10020.7	1925.5
10038.8	1927	10041.4	1927.2	10054.4	1928.6	10056.9	1928.8	10073.4	1930.1

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 10079.7  1929.6 10085.1  1929.4 10091.5  1928.9 10094.7  1928.8 10095.9  1928.8
 10096.6  1928.8 10100.8  1928.9 10117.5  1928.7   10127  1928.5 10145.6  1928.5
 10151.9  1928.2 10155.6  1928.5 10171.4  1929.7   10186    1931 10192.2  1931.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9596.9    .065    9986     .04   10010    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9986   10010              462     462     462             .1       .3
Left Levee      Station=    9790      Elevation=  1927.3
Right Levee     Station= 10073.4      Elevation=  1930.1

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 0.544

INPUT
Description:
Station Elevation Data    num=      87
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9799.3  1915.6  9808.3  1914.8  9814.4  1914.3  9840.8    1913  9846.2  1912.7
  9862.8  1914.5  9865.6  1914.7  9893.3  1912.3  9903.4  1911.4    9916  1911.6
  9920.2  1911.7    9926  1911.3  9928.2  1911.2  9934.9  1911.8  9936.5    1912
  9947.4  1912.1    9958  1912.3  9962.6  1912.4  9968.8  1911.9  9974.7  1911.4
  9978.5  1911.4  9988.9  1911.4    9990 1911.371  9996.4  1911.2   10000    1911
 10002.8  1911.1 10010.8  1911.2 10011.4  1911.2 10011.6  1911.2   10020 1911.95
 10022.8  1912.2   10028  1912.2 10033.3  1912.3 10056.1  1914.7 10064.5  1915.5
 10073.4  1915.3 10095.9  1914.8   10098  1914.8 10100.2  1914.7 10104.3  1914.9
 10110.8    1915 10114.6    1915 10117.5  1914.8   10119  1914.6 10121.3  1914.4
 10127.3  1913.9 10127.8  1913.9 10128.6  1913.8 10135.2  1912.9 10136.2  1912.8
 10137.8  1912.7 10144.4  1912.1 10147.7  1911.8 10152.6  1911.2 10158.9  1910.5
 10160.7  1910.3 10163.4    1910 10164.4    1910 10175.7  1909.5 10187.1  1909.3
 10187.4  1909.3 10187.6  1909.3 10188.3  1909.3 10196.9  1908.7 10197.8  1908.7
 10199.8    1909 10205.9    1910 10208.3  1910.3 10211.1  1910.5 10213.6  1910.5
 10217.9  1910.9 10219.4  1911.1   10226    1912 10226.6  1912.1   10227  1912.1
 10229.2  1912.4 10234.3  1912.8 10236.7  1913.1 10244.8    1914 10252.8  1914.8
 10255.2  1914.9 10261.8    1915 10264.5  1915.3 10281.8  1916.4 10302.4  1917.4
 10303.8  1917.5 10303.9  1917.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9799.3    .065    9990     .04   10020    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10020              171     171     171             .1       .3
Left Levee      Station=    9865.6    Elevation=  1914.7
Right Levee     Station= 10064.5      Elevation=  1915.5

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 0.511

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9802.6  1910.1  9803.7  1910.2  9811.9  1909.8  9822.4  1909.4  9827.6  1909.3
  9838.5  1908.8    9851  1908.3  9859.8  1907.9    9861    1908  9862.2    1908
  9878.6  1909.9  9883.2  1910.5  9901.2  1909.4    9931  1907.7  9935.8  1907.5
 9952.11 1907.42  9972.4  1907.3    9981  1907.3   10000    1907 10007.7  1907.5
 10007.8  1907.5   10008  1907.5 10025.7  1907.6   10029  1907.4 10039.2  1906.8
 10039.4  1906.8 10039.5  1906.8 10046.4  1907.2 10056.02  1907.9 10062.8  1908.3
 10064.4  1908.4 10065.3  1908.4 10065.5  1908.4 10066.2  1908.4 10094.6  1906.1
 10111.1  1906.6 10115.8  1906.7 10121.6    1907 10127.9  1906.8 10148.3    1906
```

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 10153.2  1905.8 10156.6  1905.6 10167.8  1904.5   10169  1904.3 10182.4  1904.6
 10183.1  1904.6   10184  1904.6 10188.4  1904.8   10192  1905.2 10195.4  1905.1
   10199  1905.5 10204.5  1906.3 10208.8  1906.6 10212.6  1906.8   10219    1907
 10224.1  1907.2 10228.6  1907.8 10233.1  1908.1 10238.3    1909 10241.1  1909.3
 10244.6  1909.8 10250.3  1910.8 10254.1  1911.1 10267.3  1912.4 10271.4    1913
 10273.1  1912.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9802.6    .065    9981     .04   10008    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9981   10008               225     222     215             .1       .3
Left Levee      Station=  9883.2      Elevation=  1910.5
Right Levee     Station= 10064.4      Elevation=  1908.4

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 0.469

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9840.8  1903.1  9842.8  1903.1  9846.7  1902.9  9866.9  1902.1  9872.5    1902
  9891.7  1903.3  9896.3  1903.5  9901.6  1903.8  9903.2  1903.7  9920.7  1902.9
  9932.5  1902.6  9942.7  1902.4  9959.7  1901.9  9973.7  1901.3   10000  1900.6
 10004.9  1900.7 10010.8  1901.2 10012.7  1901.3 10016.7  1901.3 10032.2    1901
 10068.3  1901.6 10070.9  1901.7   10073  1901.8 10075.7  1901.7 10077.6  1901.7
 10085.3  1901.2 10089.9  1901.1 10092.2  1900.9 10100.1  1900.7 10104.4  1900.7
   10113  1900.6   10117  1900.7 10122.6  1900.7 10132.2  1900.4 10134.8    1900
 10139.5  1899.9 10141.1  1899.7 10142.5  1899.8 10153.3  1900.9 10169.9  1902.5
 10170.4  1902.6 10170.9  1902.6 10184.6  1902.6 10197.8  1902.3 10198.3  1902.3
 10210.5  1903.8 10219.6  1904.9 10224.2  1904.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9840.8    .065  9973.7     .04 10012.7    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9973.7 10012.7              165     165     165             .1       .3
Left Levee      Station=  9901.6      Elevation=  1903.8
Right Levee     Station=   10073      Elevation=  1901.8

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 0.438

INPUT
Description:
Station Elevation Data    num=      62
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9733.1  1897.6  9733.3  1897.6  9751.2  1896.5  9757.5  1895.9  9768.8  1895.2
  9775.1  1894.7  9778.1  1894.2  9781.1    1894  9786.3  1893.8  9791.3  1893.6
  9795.2  1893.1  9801.6    1893  9803.2  1892.9    9806  1892.8  9811.1  1893.6
    9825  1895.4  9828.7    1896  9832.2  1896.4  9842.5  1896.7  9850.6  1896.6
  9851.5  1896.6    9852  1896.7  9852.5  1896.7  9854.2  1896.9  9871.9  1898.9
  9872.3  1898.9  9882.7  1898.1  9915.4  1896.2  9919.3  1896.3  9924.6  1896.6
  9935.7  1897.2  9961.7  1896.6  9975.2  1896.4  9977.3  1896.4   10000  1896.3
 10003.5  1896.310016.26 1896.57 10029.4  1896.8 10031.3  1896.8 10046.4  1896.6
 10056.7  1896.1   10061    1896 10062.8    1896 10088.6  1896.1 10090.5    1896
 10103.8  1895.5 10107.5  1895.9 10117.4  1896.7 10120.4    1897 10123.4  1897.2
 10128.1  1897.6 10130.8  1898.1 10136.5    1899 10138.7  1899.2 10140.3  1899.5
 10147.7    1900 10148.9    1900 10149.8  1900.1   10151  1900.1 10157.4  1900.3
 10158.4  1900.4 10165.2  1900.6
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9733.1    .065  9977.3     .0410016.26    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9977.310016.26              390     435     440             .1       .3
Left Levee      Station=  9872.3      Elevation=  1898.9
Right Levee     Station=10029.82      Elevation= 1896.82

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 0.356

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9717.4    1887    9719  1886.9    9732  1886.3  9739.4  1885.9  9743.8  1885.7
    9753  1885.3  9756.1  1885.1  9777.6  1883.2  9799.4  1881.7  9806.9  1880.9
  9810.3  1880.6  9822.1  1882.2    9833  1883.7  9834.9    1884  9840.4  1884.6
  9842.4  1884.8  9859.3  1886.9  9873.3  1886.4  9873.6  1886.4    9880  1886.4
  9898.6  1886.4  9910.2  1886.4  9934.2  1886.5  9942.8  1886.3  9986.3  1884.8
    9991  1884.8  9994.9  1884.1   10000  1883.6 10009.1  1884.1 10041.5  1885.5
 10041.7  1885.5 10042.3  1885.5   10045  1885.5 10062.9  1885.3 10066.1  1885.2
   10075  1885.4 10116.5  1885.5 10122.7  1885.4 10147.7  1886.7 10159.2  1887.2
 10169.8  1887.7 10175.8  1887.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9717.4     .07    9991    .045 10009.1     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9991 10009.1              257     257     257             .1       .3
Left Levee      Station=  9859.3      Elevation=  1886.9

CROSS SECTION          RIVER: W11.0100
REACH: R0100              RS: 0.307

INPUT
Description: XS upstream of split S11.0155
Station Elevation Data    num=      69
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9733.45  1877.4 9737.25  1877.3 9762.15  1875.8 9772.55  1874.5 9783.35  1873.2
 9788.75  1873.6 9793.05  1874.1 9798.75  1874.5 9800.75  1874.7 9811.85  1876.1
 9827.85  1877.8 9833.15  1878.3 9838.75    1879 9848.85  1880.5 9855.05  1881.4
 9855.15  1881.4 9875.55    1880 9885.05  1879.7 9887.85  1879.4 9890.45  1879.4
 9896.05  1878.6 9903.25  1878.2 9904.35  1878.2 9909.45    1878 9926.35    1878
 9940.55  1878.1 9959.35  1878.7 9964.85  1878.8 9969.15  1878.7 9979.05  1878.3
 9987.25  1878.9 9990.35  1879.1 9991.45  1879.1 9999.65    1878 9999.95    1878
10006.45  1878.510006.65  1878.510009.95  1878.610021.15  1878.610025.45  1878.7
10033.65  1878.710046.15  1878.710048.95  1878.610051.85  1878.610056.55  1878.5
10067.25  1878.910075.55  1879.110079.55  1878.910081.45  1878.910089.75  1878.7
10093.85  1878.610098.25  1878.610101.25  1878.510108.55  1878.410110.55  1878.4
10111.75  1878.510120.15  1878.410126.85  1878.210130.75  1878.510131.95  1878.6
10140.15  1879.410144.95  1879.810151.85  1880.610155.95    188110163.55  1881.6
10168.65  1881.710173.85  1881.810182.15  1882.110189.05  1882.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9733.45    .065 9991.45    .03510009.95    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9991.4510009.95                0       0       0             .1       .3
```

```
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   1011510189.05    1881
Left Levee      Station= 9855.05      Elevation=  1881.4

CROSS SECTION          RIVER: W11.0100
REACH: R0200              RS: 0.262

INPUT
Description: Q = 226 cfs right split at S11.0155
Station Elevation Data    num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9925    1874    99921872.839   10000  1872.7   10008 1872.78   100101872.764
   10030  1872.6   10050    1874   10074  1875.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9925    .065    9992    .035   10010    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9992   10010              182     182     182             .1       .3

CROSS SECTION          RIVER: W11.0100
REACH: R0200              RS: 0.228

INPUT
Description:
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9822.6  1868.8  9876.6  1868.4  9879.3  1868.4  9897.7  1868.1  9905.2  1868.1
    9908  1868.1  9912.1  1867.8  9914.8  1867.6  9917.9  1867.7  9925.5  1868.2
  9936.8  1868.1  9974.3    1868    9983  1867.9  9989.8  1867.9 9992.92 1867.64
   10000  1867.110007.83 1867.83 10011.6  1868.2   10029  1867.6 10035.7  1867.4
 10043.1  1868.1   10062    1870

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9822.6    .065 9992.92    .03510007.83    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9992.9210007.83              104     104     104             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
  9822.6    9908  1869.5

CROSS SECTION          RIVER: W11.0100
REACH: R0300              RS: 0.208

INPUT
Description: Q = 409 cfs = S11.0155R + S10.0558L
Station Elevation Data    num=      20
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9850    1866    9877  1865.6    9905  1865.5    9918  1864.1    9977  1865.5
    9985 1865.43   10000  1865.3   10015  1865.6   10035  1865.7   10075  1865.5
   10090  1865.7   10112  1865.3   10128  1865.8   10140  1865.7   10169    1866
   10187  1865.6   10214  1865.8   10232  1865.3   10243    1866   10253  1866.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9850    .065    9985    .035   10015    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9985   10015              393     393     393             .1       .3
```

```
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10169   10253    1867
Right Levee     Station=   10169      Elevation=    1866

CROSS SECTION          RIVER: W11.0100
REACH: R0300              RS: 0.134

INPUT
Description:
Station Elevation Data    num=     103
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9562.7  1856.5  9568.6  1856.3  9570.2  1856.3  9605.7  1855.5  9605.8  1855.5
  9612.8  1854.7  9614.2    1855  9617.9  1855.5  9618.6  1855.7  9626.6  1855.4
  9629.2  1855.4  9634.9  1855.1  9644.9  1855.2  9650.7  1855.4  9658.1  1854.3
  9659.6  1854.2  9661.2  1854.4  9667.4  1855.7  9672.7  1855.5  9679.8  1855.3
  9695.5  1855.4  9704.4  1855.4  9709.1  1855.4  9712.1  1855.2  9715.7  1854.8
    9717  1854.8  9734.4    1855  9736.2    1855  9736.8    1855  9739.8    1855
  9750.7  1855.1  9753.1  1854.7  9758.2  1853.9    9769  1854.9  9773.6  1855.2
  9779.4  1855.6  9795.3    1856  9798.4    1856  9798.8    1856  9799.4    1856
  9823.2  1855.7  9834.8  1855.6  9843.8  1855.6  9849.2  1855.1  9852.9  1855.2
    9860  1855.6  9870.8  1855.4    9882  1855.3  9895.2  1855.7  9903.9  1855.9
  9906.2  1855.9  9912.1  1855.8    9923  1855.9  9926.7 1855.65  9930.4  1855.4
  9936.7  1855.1  9940.2 1855.67    9941  1855.8  9944.7  1856.1  9946.7  1856.1
  9949.4  1856.1  9969.6    1856  9983.6  1855.5    9990 1855.227   10000  1854.8
 10002.5    1855 10007.6  1855.3 10027.2  1855.4 10037.5  1855.5 10039.4  1855.5
 10042.7  1855.5 10044.4  1855.5 10047.9  1855.6 10062.4  1855.6 10070.4  1855.7
 10075.7  1854.6 10082.8  1853.9 10082.9  1853.9   10089    1854 10092.4  1854.3
   10101  1855.2 10116.5  1854.8 10126.4  1854.6   10132  1855.1 10135.7  1855.4
 10138.3  1855.6 10141.1  1855.4   10152  1854.4 10158.2  1853.9 10163.2  1855.5
 10163.8  1855.7 10178.3  1856.1 10196.3  1856.6 10201.6  1856.7 10204.4  1856.8
 10208.9  1856.9 10220.3  1856.4 10221.6  1856.3 10223.3  1856.4 10226.7  1856.6
 10231.2  1856.5 10248.5  1856.2 10249.5  1856.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9562.7    .065    9990    .035 10007.6    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990 10007.6              420     475     470             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev   Sta L   Sta R    Elev
  9562.7  9618.6  1856.5 10138.3 10249.5  1855.6
Left Levee      Station=  9618.6      Elevation=  1855.7
Right Levee     Station= 10138.3      Elevation=  1855.6

CROSS SECTION          RIVER: W11.0100
REACH: R0300              RS: 0.044

INPUT
Description:
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9587  1844.5    9614    1844    9677  1843.2    9700  1843.1    9717  1843.3
    9741  1842.3    9755    1844    9782    1844    9792  1843.7    9801    1842
    9872  1843.7    9887  1843.8    9899    1843    9952  1843.8    9972 1843.96
    9977    1844    9990 1842.841   10000    1842   10014  1842.2   10015 1842.278
   10037    1844   10052    1846

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9587    .065    9990    .035   10015    .065
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10015                 0       0       0             .1       .3

CROSS SECTION          RIVER: W11.0155
REACH: R0100              RS: 0.272

INPUT
Description: Q = 310 cfs left split at S11.0155
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9957  1874.3    9965    1874    9993    1872   10000  1871.3   10006    1872
   10076    1874

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9957    .065    9993    .035   10006    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9993   10006                182     182     182             .1       .3

CROSS SECTION          RIVER: W11.0155
REACH: R0100              RS: 0.237

INPUT
Description:
Station Elevation Data    num=      30
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9863.4  1869.2  9865.7  1868.9    9876  1867.9  9876.8  1867.7  9878.8  1867.5
  9887.4  1866.6    9893  1865.8    9894  1865.8  9894.6  1865.8  9899.3  1865.9
  9901.8  1865.9  9908.9  1865.8  9912.9  1865.1  9913.2  1865.1  9916.2  1864.7
  9920.3  1865.9  9925.7  1867.4  9933.4  1867.5    9948  1868.1  9956.9  1868.4
    9961  1868.3  9990.8  1867.8  9992.1  1867.6 9993.25 1867.37  9995.9  1866.9
   10000    1866 10000.8  1866.110006.75 1867.35 10012.2  1868.5 10013.6  1868.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9863.4    .065 9993.25    .03510006.75    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9993.2510006.75                93      93      93             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
  9863.4    9925  1869.5

CROSS SECTION          RIVER: W11.0155
REACH: R0100              RS: 0.219

INPUT
Description:
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9883  1867.4    9914    1866    9940    1864    9956  1865.8    9993    1864
    99951863.886   10000  1863.6   10005    1864   10026    1866

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9883    .065    9995    .035   10005    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995   10005                456     456     456             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9883    9956    1867
```

```
CROSS SECTION          RIVER: W11.0155
REACH: R0100              RS: 0.133

INPUT
Description:
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9849.8  1857.1  9865.1  1855.6  9889.7  1853.3  9893.6  1852.4  9895.4  1852.1
  9897.5  1852.7  9905.6  1854.7  9911.2  1854.4  9924.5  1853.6  9942.3  1854.3
    9960  1855.2  9969.4  1853.9 9982.38 1852.55  9988.3    1852  9995.6  1851.1
   10000  1850.610005.57 1852.61 10010.5    1854 10015.9  1855.4 10020.4    1855
 10023.1  1854.8 10026.5  1854.7 10028.6  1854.7 10035.5  1854.6 10055.1  1854.5
 10057.1  1854.5 10060.6  1854.5 10063.2  1854.4 10065.8  1854.4   10068  1854.3
 10073.3  1854.1 10078.5  1854.8 10079.6    1855 10081.6    1855 10108.6  1855.7
 10120.6  1856.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9849.8    .065  9988.3    .03510005.57    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9988.310005.57              348     348     348             .1       .3
Left Levee      Station=    9960      Elevation=  1855.2

CROSS SECTION          RIVER: W11.0155
REACH: R0100              RS: 0.067

INPUT
Description:
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9942  1846.4    9967  1846.3    9980    1846    9990  1844.9   10000  1843.9
   10010  1844.5   10038    1846   10087  1846.9   10180    1848

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9942    .065    9990    .035   10010    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10010               97      97     102             .1       .3

CROSS SECTION          RIVER: W11.0155
REACH: R0100              RS: 0.049

INPUT
Description:
Station Elevation Data    num=      10
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9974    1844    99941842.692   10000  1842.3   100061842.424   10034    1843
   10055    1842   10086  1843.2   10104    1843   10115    1844   10134  1844.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9974    .065    9994    .035   10006    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9994   10006                0       0       0             .1       .3

CROSS SECTION          RIVER: W11.0405
REACH: R0100              RS: 0.337

INPUT
```

```
Description: Q = 586 cfs from D534R HEC-1 FCD 93-07
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9953  1846.3    9966    1846    9987    1844    9995 1843.385   10000    1843
   10014  1843.5   10047    1844   10065    1846   10090  1846.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9953    .065    9995    .035   10014    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995   10014               210     220     230             .1       .3

CROSS SECTION          RIVER: W11.0405
REACH: R0100              RS: 0.296

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9914.8  1841.7  9937.5  1841.3  9943.4  1841.3  9947.7  1841.4  9951.5  1841.1
  9958.6  1840.5  9963.9  1840.5  9964.3  1840.5  9966.7  1840.3  9969.7  1839.8
  9977.4  1839.3  9994.1  1838.2  9997.4  1837.6   10000  1837.1 10004.4  1837.3
 10011.4  1837.6 10015.5  1837.7   10019  1837.8 10048.1  1838.4 10048.6  1838.4
 10050.3  1838.5 10065.2  1838.3 10072.4  1838.1 10073.6  1838.1   10077  1838.3
 10087.5  1838.6 10094.1  1838.9 10107.2  1839.4 10108.5  1839.3 10113.9  1839.4
   10116  1839.5 10118.2  1839.6 10134.4  1839.5 10143.3  1839.6 10149.5  1839.2
 10159.6  1838.5 10163.9  1839.6 10166.5    1840 10178.9  1839.6 10188.8  1838.6
 10192.6  1838.1 10194.3  1838.5 10195.1  1838.7 10198.8  1839.6   10209    1842
 10216.4  1843.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9914.8    .065  9994.1    .035 10004.4    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9994.1 10004.4               177     177     177             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 10118.2 10216.4  1839.6
Right Levee     Station= 10166.5      Elevation=    1840

CROSS SECTION          RIVER: W11.0405
REACH: R0100              RS: 0.262

INPUT
Description:
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9933.7  1837.1  9937.7  1836.7  9942.1  1836.3  9962.5  1834.4  9963.4  1834.3
    9964  1834.3  9970.6  1834.6  9982.1  1833.7  9990.8    1833  9992.6    1833
  9994.1  1832.8   10000  1832.1   10003  1832.6 10004.2  1832.8   10021  1833.4
 10021.6  1833.4 10021.7  1833.4 10022.5  1833.5 10024.8  1833.7   10041  1835.1
 10072.8  1832.7 10078.5  1832.3 10082.4    1833 10083.6  1833.3 10105.7  1834.2
 10112.6  1834.7 10121.9    1834 10124.6  1833.9 10129.8  1833.8 10131.5  1833.9
 10132.8  1833.8 10135.3  1833.7 10157.7  1832.7 10159.6  1832.9 10164.2    1833
 10165.7    1833   10174  1833.4 10181.2  1833.6 10184.5  1834.1   10190  1834.5
 10195.6  1834.8 10204.8  1835.4 10219.8  1834.7 10226.9  1834.4 10235.3    1834
 10235.7    1834 10236.2  1834.1 10244.3  1834.8 10253.5  1835.2 10254.2  1835.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9933.7    .065  9994.1    .035 10004.2    .065
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9994.1 10004.2              191     191     191             .1       .3
Right Levee     Station= 10204.8      Elevation=  1835.4

CROSS SECTION          RIVER: W11.0405
REACH: R0100              RS: 0.226

INPUT
Description:
Station Elevation Data    num=      68
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9860.5  1831.4  9890.8  1830.6  9905.6  1830.5    9910  1830.5  9910.4  1830.5
  9917.4  1830.5  9921.3  1830.1  9923.4    1830  9927.3  1829.9  9932.6  1829.6
    9938  1829.4    9942  1829.4  9944.9  1829.3  9947.8  1829.3  9953.1    1829
  9957.5  1828.7  9961.7  1828.2  9963.9  1828.6  9969.6  1829.1  9975.7    1829
  9984.8  1828.6  9995.4  1828.7  9996.1  1828.7  9996.4  1828.7  9999.4  1827.4
  9999.9  1827.2   10000  1827.2 10000.2  1827.3 10009.8  1828.6 10010.4  1828.6
   10015  1828.7 10017.7  1828.7 10021.3  1828.6 10044.5    1829 10057.6  1829.1
 10061.4  1828.7 10064.8  1828.5 10068.6  1829.2 10069.9  1829.4 10071.4  1829.7
 10074.2  1829.8 10074.9  1829.9 10080.3  1830.1 10087.1  1830.1 10088.2  1830.1
 10088.5  1830.1 10089.9  1830.2 10100.7  1831.2 10104.2  1830.6 10107.7  1830.5
   10113  1830.2 10118.9  1830.1   10137  1828.9 10157.5  1827.8 10159.1  1827.9
   10161  1827.8 10180.7  1827.2 10183.5  1827.3 10188.2  1827.3 10189.8  1827.3
 10193.1  1827.4 10229.6  1829.4   10233  1829.6   10255    1828   10273  1827.7
   10296    1828   10353    1830   10373    1832

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9860.5    .065  9995.4    .035 10009.8    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9995.4 10009.8              444     444     375             .1       .3
Right Levee     Station=   10233      Elevation=  1829.6

CROSS SECTION          RIVER: W11.0405
REACH: R0100              RS: 0.142

INPUT
Description:
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9909.5    1822  9925.1  1821.4  9952.2  1820.4  9952.9  1820.3  9954.1  1820.3
  9957.3  1820.3  9976.3  1819.7  9979.6  1819.8  9983.1  1818.9  9989.5  1817.3
    99951815.781   10000  1814.4 10003.1  1814.8 10007.5    1816   10009  1816.4
   10012    1817 10013.6  1817.8 10016.3  1818.5 10023.3  1820.9 10024.4  1821.2
   10025  1821.5 10025.9  1821.5 10031.4    1821 10034.7  1820.8 10039.5  1820.5
 10050.2  1818.8   10053  1818.4 10054.5  1818.1   10067  1820.2 10074.2  1821.3
 10079.3  1821.6 10082.4  1821.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9909.5     .07    9995    .045 10007.5     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995 10007.5              455     455     455             .1       .3

CROSS SECTION          RIVER: W11.0405
REACH: R0100              RS: 0.056

INPUT
Description:
Station Elevation Data    num=      27
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9934.6  1809.4  9948.6  1808.8  9970.1  1808.4    9979  1808.5  9983.4  1808.5
  9985.1  1807.7  9992.7  1803.8  9998.4  1803.5   10000  1803.4 10004.8  1806.1
 10008.3  1808.1 10012.3    1808 10019.8  1807.7 10024.1  1805.8 10026.4  1804.8
 10027.8  1805.6 10032.5  1808.1 10043.1  1808.5 10045.7  1808.6 10047.7  1808.6
 10051.3  1808.6 10066.4  1808.8 10069.9  1808.4 10070.7  1808.3   10074  1808.4
 10083.5  1808.9 10099.5    1809

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9934.6     .07  9992.7    .045 10004.8     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9992.7 10004.8              293     293     293             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 10008.3 10099.5  1808.5

CROSS SECTION          RIVER: W10.0600
REACH: R0100              RS: 3.445

INPUT
Description: Q = 570 cfs right split flow at S10.0600
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9930    1954    9995    1952   10000  1951.6   10009  1951.7   10015    1952
   10033  1953.3   10064  1953.3   10085    1952   10095  1951.3   10110    1952
   10138    1954   10160  1954.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9930     .07    9995    .045   10015     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995   10015              107     121     120             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10095   10160    1954
Right Levee     Station=   10033      Elevation=  1953.3

CROSS SECTION          RIVER: W10.0600
REACH: R0100              RS: 3.422

INPUT
Description:
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9898    1952    9967    1950    9980 1949.173    9995 1948.218   10000  1947.9
   10005 1948.357   10015 1949.27   10023    1950   10051    1952

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9898     .07    9980    .045   10015     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9980   10015              383     376     376             .1       .3

CROSS SECTION          RIVER: W10.0600
REACH: R0100              RS: 3.351

INPUT
Description:
Station Elevation Data    num=      55
```

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9828.4  1942.3  9837.4  1942.1  9849.5  1941.9  9854.6    1942  9858.8  1941.4
    9863  1941.7    9872  1941.4  9892.6  1940.7  9906.1  1940.7  9920.8  1940.8
  9921.4  1940.8  9928.8  1941.1  9955.3  1940.2  9963.5    1940    9966  1940.1
  9967.9    1940  9970.9    1940  9974.4  1939.7  9976.1  1939.6    9977  1939.5
  9978.2  1939.3  9981.4  1939.6  9982.4  1939.7  9983.4  1939.7  9986.1  1939.2
  9990.5  1938.9  9993.2  1938.5  9999.6  1938.2   10000  1938.2 10000.3  1938.2
 10005.2  1938.3 10008.4  1938.7 10010.6  1939.1 10015.7  1939.8   10022  1940.8
 10028.1  1940.8 10035.7    1941 10037.1  1940.9 10042.9  1940.7 10052.2  1940.5
 10055.4  1940.4 10057.6  1940.4 10057.7  1940.4   10063    1941 10065.5  1941.4
 10067.5  1941.5 10072.2  1941.9 10073.1  1942.1 10079.1  1942.3 10082.4  1942.6
   10087  1942.8 10099.8  1943.4 10100.5  1943.4 10102.1  1943.3 10110.3    1943

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9828.4     .07  9990.5    .045 10010.6     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9990.5 10010.6               228     228     228             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
  9828.4  9928.8  1941.5

CROSS SECTION          RIVER: W10.0600
REACH: R0100              RS: 3.308

INPUT
Description:
Station Elevation Data    num=      11
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9908  1935.8    9946  1934.4    9964  1934.7    9986  1934.5    9994    1934
   10000    1932   10004  1932.8   10010    1934   10017  1934.2   10047  1934.2
   10097    1936

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9908     .07    9994    .045   10010     .07

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9994   10010                 0       0       0             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
   10055   10097    1936

CROSS SECTION          RIVER: W12.0500
REACH: R0100              RS: 1.098

INPUT
Description: Q = 107 cfs right split at S12.0500
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9958  1710.2    9977    1710    99851709.583   10000  1708.8   100201709.432
   10038    1710   10058    1712

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9958    .055    9985    .035   10020    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9985   10020               190     189     190             .1       .3

CROSS SECTION          RIVER: W12.0500
REACH: R0100              RS: 1.063
```

```
INPUT
Description: 1.999
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9841  1706.2    9853    1706    9890  1705.3    9916  1705.7    9954  1704.8
    9983  1704.9   10000  1704.6   100081705.048   10010 1705.16   10015 1705.44
   10025    1706   10049  1705.4   10059    1706   100631707.367

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9841    .055    9983    .035   10008    .055

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9983   10008              344     344     344             .1       .3
Left Levee      Station=    9916      Elevation=  1705.7
Right Levee     Station=   10025      Elevation=    1706

CROSS SECTION          RIVER: W12.0500
REACH: R0100              RS: 0.997

INPUT
Description: 1.924
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9911  1697.6    9960    1696    99941693.705   10000  1693.3   100071693.727
   10041  1695.8   10080    1696   10168    1698   10221  1698.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9911     .06    9994     .04   10007     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9994   10007              134     134     134             .1       .3

CROSS SECTION          RIVER: W12.0500
REACH: R0100              RS: 0.972

INPUT
Description:
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9859  1693.7    9912    1692    9962  1692.8    9990    1692   10000    1691
   10010    1692   10020  1692.3   10027    1692   10032  1691.8   10040    1692
   10077  1693.3   10122    1694   10147  1694.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9859     .06    9990     .04   10010     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10010              203     203     203             .1       .3
Left Levee      Station=    9962      Elevation=  1692.8

CROSS SECTION          RIVER: W12.0500
REACH: R0100              RS: 0.934

INPUT
Description:
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9770  1688.6    9850    1688    9905    1686    9925  1687.8    9965    1688
    9980 1688.35    9995    1688   10000  1687.8   10006    1688   10020  1688.3
```

```
   10035    1688   10110  1689.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9770     .06    9995     .04   10006     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995   10006              213     213     213             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
    9770    9936    1689
Left Levee      Station=    9980      Elevation= 1688.35

CROSS SECTION          RIVER: W12.0500
REACH: R0100              RS: 0.893

INPUT
Description: 1.803
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9793  1684.4    9797    1684    9812  1683.9    9835    1684    9870  1683.5
    9885  1682.5    9901  1683.7    9910  1682.2    9921    1683    9950  1683.3
    9975  1683.6    9980 1683.48   10000    1683   100071683.466   100081683.533
   10015    1684   10029  1684.1   10043    1684   10055    1683   10065    1684
   10110  1685.6   10151    1686

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9793    .065    9980    .045   10007    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9980   10007              170     185     176             .1       .3

CROSS SECTION          RIVER: W12.0500
REACH: R0100              RS: 0.858

INPUT
Description: 1.752
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9822  1680.2    9869  1679.6    9894  1679.8    9920  1679.3    9934  1679.5
    9950  1679.3    9964  1679.5    9975  1678.9    9989  1679.8    99911679.636
   10000  1678.9   10014  1679.5   10039    1679   10052    1680   10082    1682
   10135  1682.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9822    .065    9991    .045   10014    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9991   10014              107     107     110             .1       .3
Left Levee      Station=    9894      Elevation=  1679.8

CROSS SECTION          RIVER: W12.0500
REACH: R0100              RS: 0.838

INPUT
Description:
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9817  1677.3    9855  1676.4    9899  1677.3    9920    1676    9937    1676
    9945  1675.6    9950    1676    9974  1677.7    99901676.592   10000  1675.9
   100051676.556   10016    1678   10046    1679
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```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9817    .065    9990    .045   10005    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10005               0       0       0             .1       .3
Left Levee      Station=    9899      Elevation=  1677.3

CROSS SECTION          RIVER: W12.0600
REACH: R0100              RS: 0.120

INPUT
Description: Q = 122 cfs right split at S12.0600
Station Elevation Data    num=       9
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9978  1688.7    9993    1688   10000  1687.5   10007    1688   10016  1688.2
   10032  1687.9   10042  1688.2   10057    1688   10090  1688.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9978     .06    9993     .04   10007     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9993   10007              200     200     200             .1       .3

CROSS SECTION          RIVER: W12.0600
REACH: R0100              RS: 0.082

INPUT
Description: 1.803
Station Elevation Data    num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9960  1684.6    9980    1684    99951682.725   10000  1682.3   100101682.742
   10034  1683.8   10065  1683.9   10108  1684.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9960    .065    9995    .045   10010    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995   10010              170     170     170             .1       .3

CROSS SECTION          RIVER: W12.0600
REACH: R0100              RS: 0.050

INPUT
Description: 1.752
Station Elevation Data    num=      10
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9935  1680.4    9975    1680    9985  1679.6    9993 1679.28    9995  1679.2
   10000    1679   100081679.333   100151679.625   10024    1680   10050  1680.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9935    .065    9985    .045   10015    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9985   10015              110     115     113             .1       .3

CROSS SECTION          RIVER: W12.0600
REACH: R0100              RS: 0.028
```

```
INPUT
Description:
Station Elevation Data    num=       5
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9942  1677.6    9992    1676   10000    1675   10005    1676   10024  1677.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9942    .065    9992    .045   10005    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9992   10005                 0       0       0              .1       .3

CROSS SECTION          RIVER: W12.0375
REACH: R0100              RS: 0.704

INPUT
Description: Q = 186 cfs left split at S12.0375
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9905  1719.2    9933    1718    9949  1717.4    9958  1717.7    9966  1717.3
    9972    1718    9980  1718.3    9987    1718    99951717.385   10000    1717
   100051717.313   10016    1718   10037    1719

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9905    .053    9995    .035   10005    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995   10005               395     398     400              .1       .3

CROSS SECTION          RIVER: W12.0375
REACH: R0100              RS: 0.628

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9960  1710.4    9980    1710    9993    1708   10000  1707.7   10005    1708
   10055    1710   10060  1710.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9960    .053    9993    .035   10005    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9993   10005               495     495     495              .1       .3

CROSS SECTION          RIVER: W12.0375
REACH: R0100              RS: 0.535

INPUT
Description:
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9918  1700.4    9929    1700    9955    1698    9974  1698.6    9986    1698
    9993    1697    99951696.714   10000    1696   100051696.833   100071697.166
   10012    1698   10044    1700   10057 1700.35   10080  1700.1   10108    1701

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9918    .053    9993    .035   10007    .053
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9993   10007              384     384     384             .1       .3

CROSS SECTION          RIVER: W12.0375
REACH: R0100              RS: 0.462

INPUT
Description:
Station Elevation Data    num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9927    1692    9978    1690    99901688.854   10000  1687.9   100051689.213
   10008    1690   10022  1690.7   10075  1690.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9927    .053    9990    .035   10005    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9990   10005              390     390     390             .1       .3

CROSS SECTION          RIVER: W12.0375
REACH: R0100              RS: 0.388

INPUT
Description:
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9979  1682.5    9990    1682    9997    1680   10000  1679.7   10006    1680
   10033    1682   10065  1682.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9979    .053    9997    .035   10006    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9997   10006              413     413     413             .1       .3

CROSS SECTION          RIVER: W12.0375
REACH: R0100              RS: 0.310

INPUT
Description:
Station Elevation Data    num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9955  1674.3    9963    1674    9995    1672   10000  1671.8   10008    1672
   10030    1674   10063    1676   10094  1677.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9955    .053    9995    .035   10008    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9995   10008                0       0       0             .1       .3
```

E.5.5: HEC-RAS Output (Tables 5.9.1, 5.9.2)

Table 5.9.1
HECRAS Output -- Floodplain

River	Reach	River Sta	Q Total	W.S. Elev	Crit W.S.	Vel Total	Top Width	Max Chl Dpth	Froude # XS	Sta W.S. Lft	Sta W.S. Rgt
			(cfs)	(ft)	(ft)	(ft/s)	(ft)	(ft)		(ft)	(ft)
W10.0000	R0100	4.971	2337	2164.45	2164.25	3.68	952.73	3.55	0.69	9477.5	10440.49
W10.0000	R0100	4.916	2337	2158.13	2157.87	3.23	987.32	3.33	0.6	9464.11	10451.43
W10.0000	R0200	4.85	921	2148.52	2148.23	4.29	215.53	2.12	0.7	9967.56	10250.45
W10.0000	R0200	4.79	921	2140.73	2140.52	3.73	259.22	2.63	0.67	9899.26	10158.48
W10.0000	R0200	4.711	921	2130.38	2130.37	4.51	177.86	2.18	0.74	9854.78	10032.63
W10.0000	R0200	4.64	921	2120.58	2120.57	4.52	212.78	2.58	0.81	9880.94	10093.72
W10.0000	R0200	4.545	921	2108.23	2108.23	3.48	315.1	3.53	0.67	9749.02	10064.13
W10.0000	R0200	4.459	921	2096.58	2096.25	3.21	599.64	3.48	0.58	9928.74	10530.25
W10.0000	R0200	4.406	921	2089.19	2089.19	3.55	634.9	3.09	0.78	9746.36	10508.87
W10.0000	R0200	4.344	921	2080.48	2080.48	3.2	488.12	2.58	0.65	9618.6	10241.87
W10.0000	R0200	4.266	921	2068.75	2068.54	3.28	411.88	2.35	0.7	9742.44	10191.07
W10.0000	R0200	4.197	921	2058.55	2058.4	3.82	225.67	1.95	0.65	9965.78	10191.46
W10.0000	R0200	4.138	921	2050.92	2050.68	3.74	401.96	2.32	0.67	9802.71	10206.62
W10.0000	R0200	4.062	921	2040.21	2040.1	4.39	222.08	2.51	0.8	9703.84	10015.67
W10.0000	R0200	4.017	921	2034.26	2034.03	4.01	235.27	1.56	0.71	9810.04	10045.31
W10.0000	R0300	3.977	555	2028.75	2028.75	4.25	146.14	2.15	0.79	9928.53	10074.67
W10.0000	R0300	3.888	555	2016.03	2016.01	5.01	104.46	1.93	0.86	9941.39	10045.85
W10.0000	R0300	3.842	555	2010.2	2010.2	3.57	198.05	2.9	0.71	9894.61	10092.66
W10.0000	R0300	3.805	555	2005.5	2005.5	3.5	175.36	2.6	0.65	9960.68	10136.04
W10.0000	R0300	3.717	555	1992.69	1992.69	3.63	187.01	1.69	0.71	9922.98	10110.46
W10.0000	R0300	3.638	555	1981.07	1981	4.93	111.07	1.97	0.86	9990.1	10141.52
W10.0000	R0300	3.58	555	1973.33	1973.29	3.54	178.8	1.83	0.66	9853.07	10031.87
W10.0000	R0400	3.539	913	1967.13	1967.13	4.34	236.77	2.13	0.81	9814.48	10051.24
W10.0000	R0400	3.491	913	1959.96	1959.64	3.11	351.22	2.66	0.57	9737.96	10131.24
W10.0000	R0400	3.468	913	1956.95	1956.9	3.46	491.42	1.95	0.76	9758.3	10277.04
W10.0000	R0500	3.448	343	1953.94	1953.68	2.46	236.78	1.44	0.57	9743.76	10018.31
W10.0000	R0500	3.359	343	1941.6	1941.43	3.38	184.4	2.4	0.8	9871.71	10056.59
W10.0000	R0500	3.264	343	1927.97	1927.97	3.33	142.59	2.47	0.69	9931	10073.59
W10.0000	R0500	3.17	343	1914.08	1914.08	3.98	90.26	2.08	0.72	9957.05	10047.31
W10.0000	R0500	3.074	343	1899.7	1899.59	2.92	188.6	2.6	0.65	9887.48	10112.06
W10.0555	R0100	1.128	358	2028.92	2028.92	3.37	167.01	2.12	0.71	9855.74	10098.79
W10.0555	R0100	1.042	358	2015.67	2015.44	3.36	130.86	1.77	0.66	9842.57	10022.68
W10.0555	R0100	0.995	358	2008.73	2008.58	3.48	125.73	2.63	0.68	9893.85	10019.57
W10.0555	R0100	0.956	358	2004.21	2004.03	3.62	98.48	3.41	0.64	9944.05	10042.53
W10.0555	R0100	0.917	358	1998.91	1998.9	3.79	224.21	1.01	0.87	9968.17	10200.77
W10.0555	R0200	0.884	183	1993.17	1993.14	3.08	99.41	3.07	0.7	9966.13	10065.54
W10.0555	R0200	0.799	183	1980.28	1980.2	3.03	147.85	1.68	0.84	9861.55	10026.5
W10.0555	R0200	0.71	183	1968.29		2.77	126.17	1.39	0.68	9912.38	10038.54
W10.0555	R0200	0.67	183	1963.36	1963.36	2.64	156.53	1.16	0.7	9982.49	10139.02
W10.0555	R0200	0.621	183	1956.37	1956.37	2.56	156.38	1.87	0.61	9906.97	10068.51
W10.0555	R0200	0.527	183	1942.03	1941.72	2.87	87.65	1.73	0.59	9866.62	10003.46
W10.0555	R0200	0.432	183	1927.71	1927.58	2.82	194.3	2.61	0.78	9908.02	10111.12
W10.0556	R0200	0.377	183	1919.04	1918.92	3.08	89.67	1.04	0.67	9980.08	10069.75
W10.0555	R0200	0.34	183	1913.94	1913.94	4.33	64.34	2.04	0.87	9985.61	10117.03
W10.0555	R0200	0.242	183	1900.72	1900.72	4.29	48.98	2.02	0.81	9979.52	10028.5
W10.0555	R0200	0.157	183	1889.18	1889.18	4.31	50.63	1.48	0.83	9974.07	10024.7
W10.0555	R0200	0.077	183	1877.04	1877.04	2.77	139.86	0.94	0.71	9912.57	10052.43
W10.0555	R0200	0.021	183	1869.19	1869.19	3.4	79.66	1.59	0.73	9970.86	10050.52
W10.0558	R0100	0.186	175	1993.27	1993.1	2.71	174.82	1.17	0.66	9951.51	10127.78
W10.0558	R0100	0.109	175	1981.35	1981.35	2.9	127.29	0.95	0.74	9982.47	10128.78
W10.0558	R0100	0.05	175	1973.88	1973.58	1.73	146.19	1.68	0.37	9965.39	10111.58
W10.0600	R0100	3.445	570	1953.64	1953.64	3.8	191.06	2.34	0.68	9941.84	10132.9
W10.0600	R0100	3.422	570	1950.59	1950.59	5.71	84.4	2.69	0.92	9946.8	10031.2
W10.0600	R0100	3.351	570	1941.15	1941.15	3.82	184.63	2.95	0.64	9879.32	10063.95
W10.0600	R0100	3.308	570	1935.39	1935.39	3.9	160.94	3.39	0.66	9919.12	10080.06
W11.0000	R0100	5.687	1398	2149.59	2149.53	3.21	744.92	2.39	0.68	9836.19	10599.69
W11.0000	R0100	5.626	1398	2140.29	2140.16	3.53	547.23	2.09	0.73	9987.4	10676.52
W11.0000	R0100	5.551	1398	2129.14	2129.14	3.19	646.1	2.14	0.68	9983.49	10656.6
W11.0000	R0200	5.511	791	2122.98	2122.98	3.69	314.58	1.88	0.79	9966.4	10313.44
W11.0000	R0200	5.437	791	2113	2113	4.84	123.87	2.3	0.74	9981.66	10105.53
W11.0000	R0200	5.347	791	2100.63	2100.63	5.84	100.85	1.93	0.89	9906.15	10007

Table 5.9.1
HECRAS Output -- Floodplain

River	Reach	River Sta	Q Total	W.S. Elev	Crit W.S.	Vel Total	Top Width	Max Chl Dpth	Froude # XS	Sta W.S. Lft	Sta W.S. Rgt
			(cfs)	(ft)	(ft)	(ft/s)	(ft)	(ft)		(ft)	(ft)
W11.0000	R0200	5.257	791	2089.01	2089.01	4.54	194.87	2.81	0.72	9903.14	10098.01
W11.0000	R0200	5.158	791	2075.39	2075.39	6.38	145.79	2.29	1.22	9876.04	10023.74
W11.0000	R0200	5.122	791	2070.99	2070.99	3.26	488.87	2.99	0.6	9525.58	10080.45
W11.0000	R0200	5.089	791	2066.13	2066.13	4.63	311	2.83	0.83	9600.49	10019.5
W11.0000	R0200	5.029	791	2058.68	2058.32	3.38	299.42	2.18	0.67	9723.06	10026.32
W11.0000	R0200	4.933	791	2044.79	2044.79	3.75	284.96	3.09	0.77	9867.25	10152.21
W11.0000	R0200	4.877	791	2036.16	2035.94	3.1	385.75	2.76	0.64	9726.69	10135.45
W11.0000	R0300	4.843	586	2031.97	2031.97	3.37	221.71	3.47	0.67	9900.1	10121.8
W11.0000	R0300	4.821	586	2028.9	2028.79	2.88	398.21	2.6	0.65	9834.44	10232.64
W11.0000	R0400	4.799	506	2025.69	2025.69	3.36	306.64	1.99	0.74	9987.07	10293.71
W11.0000	R0400	4.755	506	2019.77	2019.77	3.11	255.01	2.37	0.63	9882.31	10194.27
W11.0000	R0400	4.674	506	2006.9	2006.8	3.24	201.02	1.5	0.65	9910.08	10150.3
W11.0000	R0400	4.584	506	1993.84	1993.81	4.74	135.14	1.74	0.94	9978.85	10177.08
W11.0000	R0400	4.501	506	1982.2	1982.2	3.62	186.06	1.9	0.73	9905.08	10188.77
W11.0000	R0400	4.427	506	1973.26	1973.26	2.99	194.29	3.26	0.56	9849.97	10044.26
W11.0000	R0400	4.339	506	1961.48	1961.34	4.23	196.76	3.08	0.73	9833.95	10030.71
W11.0000	R0400	4.315	506	1957.9	1957.86	4.44	157.71	1.8	0.84	9869.22	10026.93
W11.0000	R0500	4.27	586	1952.46	1952.46	5.02	112.63	2.46	0.78	9910.92	10023.55
W11.0000	R0500	4.18	586	1940.31	1940.31	4.52	102	2.91	0.71	9951.38	10053.38
W11.0000	R0500	4.113	586	1930.58	1930.58	4.6	112.95	2.48	0.76	9936.59	10049.54
W11.0000	R0500	4.08	586	1926.51	1926.51	4.01	149.15	2.11	0.6	9929.85	10079
W11.0000	R0500	4.053	586	1921.82	1921.82	3.39	214.55	1.72	0.67	9911.45	10126
W11.0000	R0500	4.01	586	1915.2	1915.2	3.91	237.31	1.8	0.87	9937.67	10187.27
W11.0000	R0500	3.961	586	1908.05	1907.9	2.92	335.08	3.25	0.66	9957.3	10294.42
W11.0000	R0500	3.905	586	1900.55	1900.33	2.95	331.06	1.75	0.67	9929.28	10290.76
W11.0000	R0500	3.855	586	1893.45	1893.37	3.94	198.12	1.65	0.8	9975.88	10262.84
W11.0000	R0500	3.797	586	1885.41	1885.41	3.85	167.22	1.91	0.71	9953.95	10121.17
W11.0000	R0500	3.724	586	1874.76	1874.76	6.01	84.13	1.66	0.98	9937.57	10021.7
W11.0000	R0500	3.638	586	1863.44	1863.44	7.11	45.65	2.54	0.93	9979.69	10025.34
W11.0000	R0500	3.576	586	1855.86	1855.86	6.09	68.85	3.36	0.91	9956.55	10025.4
W11.0000	R0500	3.555	586	1852.51	1852.51	5.03	151.33	1.61	0.84	9940.57	10091.9
W11.0000	R0600	3.504	586	1846.49	1846.49	5.03	187.9	2.59	0.89	9930.52	10139.27
W11.0000	R0600	3.451	586	1841.02	1840.8	4.67	214.02	3.32	0.73	9979.84	10217.25
W11.0000	R0700	3.402	1107	1837.73	1837.73	2.82	490.34	2.33	0.55	9927.13	10439.06
W11.0000	R0700	3.356	1107	1835.57		3.08	226.68	2.77	0.43	9956.37	10249.11
W11.0000	R0700	3.266	1107	1830.75	1830.75	9.46	36.73	4.25	0.93	9982.37	10019.1
W11.0000	R0700	3.177	1107	1822.34		4.78	74.09	4.64	0.48	9977.44	10051.54
W11.0000	R0700	3.15	1107	1819.86	1819.86	9.43	40.31	5.86	0.97	9974.39	10014.7
W11.0000	R0700	3.057	1107	1808.96	1808.96	4.16	273.51	3.76	0.66	9879.82	10153.33
W11.0000	R0800	3.004	1107	1800.86	1800.55	6.16	107.21	3.66	0.84	9848.93	10043.9
W11.0000	R0800	2.96	1107	1796.03	1795.7	3.59	238.15	3.33	0.56	9761.84	10031.2
W11.0000	R0800	2.896	940	1789.43	1789.43	3.59	330.58	2.43	0.71	9938.42	10269
W11.0100	R0100	2.05	600	2124.11	2124.11	3.42	284.53	2.31	0.61	9965.54	10319.37
W11.0100	R0100	1.984	600	2114.35	2114.35	3.37	296.96	1.75	0.77	9843.75	10153.88
W11.0100	R0100	1.897	600	2101.32	2101.32	2.99	294.77	2.02	0.64	9897.61	10276
W11.0100	R0100	1.806	541	2089.03	2089.03	4.25	135.03	1.83	0.77	9971.61	10284.98
W11.0100	R0100	1.715	541	2076.02	2075.94	4.17	186.6	1.82	0.88	9959.73	10250.64
W11.0100	R0100	1.681	541	2071.24	2070.98	3.25	247.95	2.24	0.7	9989.01	10313.61
W11.0100	R0100	1.639	541	2065.68	2065.52	3.73	196.24	2.18	0.76	9939.11	10225
W11.0100	R0100	1.579	541	2058.12	2058.12	3.94	188.44	1.92	0.81	9942.16	10151.77
W11.0100	R0100	1.475	541	2043.67	2043.67	4.79	239.95	2.77	0.79	9973.73	10222.78
W11.0100	R0100	1.412	536	2033.49	2033.49	3.69	197.62	1.99	0.76	9977.66	10201.93
W11.0100	R0100	1.391	536	2030.27	2030.02	3.32	180.11	1.97	0.62	9941.2	10164.6
W11.0100	R0100	1.316	536	2019.97	2019.89	3.91	190.09	1.57	0.81	9962.33	10152.42
W11.0100	R0100	1.221	536	2006.56	2006.56	4.35	164.06	1.86	0.74	9868.97	10072.63
W11.0100	R0100	1.144	536	1995.99	1995.99	3.84	138.41	2.49	0.67	9928.24	10066.65
W11.0100	R0100	1.05	536	1982.56	1982.54	5.28	118.14	1.56	1	9886.74	10004.88
W11.0100	R0100	0.963	536	1970.11	1970.11	3.93	131.44	4.31	0.68	9919.49	10050.93
W11.0100	R0100	0.888	536	1959.52	1959.52	3.77	133.36	2.72	0.64	9889.77	10023.14
W11.0100	R0100	0.871	536	1957.12	1957.12	3.67	164.25	2.22	0.69	9940.27	10104.52
W11.0100	R0100	0.847	536	1954.12	1954.12	3.82	151.02	2.02	0.7	9951.8	10102.82
W11.0100	R0100	0.777	536	1943.76	1943.7	4.1	169.1	4.16	0.82	9903.55	10076.15
W11.0100	R0100	0.701	536	1933.91	1933.84	4.32	124.84	1.71	0.76	9957.48	10082.33
W11.0100	R0100	0.631	536	1924.74	1924.58	3.89	170.2	3.64	0.76	9843.08	10013.28

Table 5.9.1
HECRAS Output -- Floodplain

River	Reach	River Sta	Q Total	W.S. Elev	Crit W.S.	Vel Total	Top Width	Max Chl Dpth	Froude # XS	Sta W.S. Lft	Sta W.S. Rgt
			(cfs)	(ft)	(ft)	(ft/s)	(ft)	(ft)		(ft)	(ft)
W12.0000	R0500	2.294	147	1741.6	1741.6	4.22	50.33	1	0.89	9963.46	10013.79
W12.0000	R0500	2.241	147	1735.62	1735.62	2.04	294.65	1.32	0.61	9741.03	10035.68
W12.0000	R0500	2.193	147	1729.71	1729.71	0.59	375.1	2.71	0.1	9631.97	10007.08
W12.0000	R0500	2.153	147	1723.71	1723.71	0.82	274.38	1.11	0.18	9732.59	10006.98
W12.0000	R0600	2.112	380	1718.94	1718.81	2.45	336.48	1.24	0.64	9829.11	10165.59
W12.0000	R0600	2.078	380	1714.38	1714.26	3.13	267.43	1.38	0.82	9858.46	10146.08
W12.0000	R0700	2.045	273	1709.9	1709.77	3.2	143.33	1	0.73	9866.9	10010.23
W12.0000	R0700	2.007	273	1704.6	1704.51	3.35	188.85	1.2	0.77	9802.34	10004.72
W12.0000	R0700	1.945	273	1698.12	1697.91	2.32	252.14	0.92	0.54	9785.08	10037.22
W12.0000	R0700	1.906	273	1693.68	1693.6	2.91	212.16	2.18	0.77	9870	10082.16
W12.0000	R0800	1.871	151	1688.53	1688.53	3.63	70.48	1.33	0.83	9984.69	10055.17
W12.0000	R0800	1.846	151	1685.94	1685.94	4.19	128.49	1.84	0.97	9942.62	10082.35
W12.0000	R0800	1.816	151	1683.08	1682.86	2.92	198.24	1.88	0.58	9957.85	10214.76
W12.0000	R0800	1.765	370	1678.73	1678.56	3.47	444.45	2.13	0.7	9873.94	10361.25
W12.0000	R0800	1.667	370	1665.91	1665.87	3.69	167.4	1.81	0.84	9917.21	10134.3
W12.0100	R0100	0.083	179	1963.39	1963.39	5.01	32.52	2.39	0.84	9987.36	10019.88
W12.0100	R0100	0.046	179	1958.08	1958.08	3.38	70.6	1.88	0.69	9953.68	10024.28
W12.0100	R0100	0.03	179	1955.94	1955.94	4.32	42.7	1.94	0.77	9980.59	10023.29
W12.0300	R0100	2.982	303	1867.41	1867.41	4.42	72.93	1.71	0.8	9961.48	10034.4
W12.0300	R0100	2.942	303	1861.61	1861.61	5.23	54.3	1.41	0.89	9982.75	10037.06
W12.0300	R0100	2.868	303	1852.09	1852.09	3.48	137.71	1.89	0.71	9973.1	10110.81
W12.0300	R0100	2.809	303	1843.94	1843.94	3.6	150.91	1.34	0.85	9912.01	10065.71
W12.0300	R0100	2.771	303	1838.91	1838.91	2.28	323.69	2.71	0.47	9704.12	10027.81
W12.0300	R0100	2.716	303	1831.8	1831.8	2.74	327.63	0.99	0.74	9756.95	10107.07
W12.0300	R0100	2.667	303	1824.81	1824.74	3.07	217.47	1.01	0.8	9897.86	10168.63
W12.0300	R0100	2.577	303	1811.43	1811.33	3.9	123.49	1.43	0.87	9840.09	10154.39
W12.0300	R0200	2.516	593	1802.84	1802.83	3.05	430.93	1.84	0.8	9611.06	10078.89
W12.0300	R0200	2.494	536	1800.23	1800.23	2.45	556.01	1.03	0.69	9631.87	10187.88
W12.0300	R0200	2.44	536	1793.05	1793.05	3.6	291.64	1.15	0.89	9835.64	10252.72
W12.0300	R0200	2.382	536	1786.21	1786.21	1.77	404.11	2.61	0.33	9915.77	10319.89
W12.0300	R0200	2.362	536	1783.72	1783.72	3.14	251.81	2.72	0.63	9956.44	10283.81
W12.0300	R0200	2.311	536	1776.91	1776.91	3.11	388.31	2.31	0.59	9725.99	10114.31
W12.0300	R0200	2.292	536	1773.83	1773.83	3.68	287.62	1.63	0.76	9741.71	10100.77
W12.0300	R0200	2.246	536	1767.97	1767.74	3.88	326.11	1.97	0.88	9735.25	10085.35
W12.0300	R0300	2.191	303	1761.1	1761.1	2.49	276.75	1.1	0.66	9741.75	10019.06
W12.0300	R0300	2.18	303	1759.73	1759.73	2.34	338.41	1.33	0.58	9768.11	10106.51
W12.0300	R0400	2.132	233	1753.33	1753.33	4.63	52.24	1.83	0.83	9964.41	10016.65
W12.0300	R0400	2.091	233	1747.38	1747.38	3.94	82.38	1.38	0.82	9969.02	10051.4
W12.0300	R0400	2.05	233	1742.65	1742.65	2.77	141.89	2.05	0.63	9969.13	10111.01
W12.0300	R0400	1.993	233	1734.41	1734.41	3.18	135.22	1.21	0.76	9904	10099.2
W12.0300	R0450	1.917	303	1725.68	1725.68	2.47	218.24	2.38	0.58	9769.46	10036.03
W12.0300	R0450	1.891	303	1721.99	1721.99	3.24	172.04	1.74	0.77	9752.51	10014.89
W12.0300	R0500	1.863	117	1718.44	1718.44	2.25	122.76	1.64	0.61	9870.92	10023.29
W12.0300	R0500	1.815	117	1712.52	1712.52	3.06	84.41	1.02	0.8	9817.57	10018.47
W12.0300	R0500	1.769	117	1707.22	1707.22	4.56	32.26	1.32	0.9	9981.11	10013.38
W12.0300	R0500	1.678	117	1698.04	1697.8	3.31	63.63	1.69	0.78	9945.86	10009.49
W12.0300	R0500	1.608	117	1690.19	1690.19	3.29	111.88	2.13	1.03	9969.45	10083.16
W12.0300	R0500	1.544	387	1682.3	1682.3	2.36	360.31	2.3	0.49	9904.45	10264.76
W12.0300	R0500	1.493	387	1676.11	1675.99	4.12	150.11	1.86	0.92	9961.59	10111.69
W12.0355	R0100	0.374	233	1761.11	1761.11	3.34	110.58	1.71	0.74	9923.2	10033.78
W12.0355	R0100	0.32	233	1753.59	1753.49	3.86	147.47	1.79	0.76	9835.98	10007.94
W12.0355	R0100	0.273	233	1747.51	1747.51	5.09	96.39	1.91	1	9842.59	10003.14
W12.0355	R0100	0.221	233	1741.43	1741.43	4.53	120.66	1.73	0.84	9896.94	10017.6
W12.0355	R0100	0.164	233	1734.74	1734.74	3.11	232.81	1.34	0.71	9972.93	10205.74
W12.0355	R0100	0.116	233	1728.45	1728.45	3.19	210	0.75	0.95	9983.44	10193.43
W12.0355	R0100	0.084	233	1725.06		2.15	204.18	1.26	0.52	9944.89	10149.08
W12.0355	R0100	0.039	233	1722.17		3.55	85.13	1.47	0.71	9920.61	10005.75
W12.0365	R0100	0.212	70	1753.69	1753.69	2.32	109.8	0.69	0.78	9915.79	10047.23
W12.0365	R0100	0.164	70	1747.44	1747.44	4.09	38.11	1.24	1.07	9949.86	10008.25
W12.0365	R0100	0.129	70	1742.33	1742.33	3.18	50.72	0.93	0.85	9990.09	10044.53
W12.0365	R0100	0.068	70	1734.59	1734.59	3.11	50.83	0.99	0.82	9981.55	10032.38

Table 5.9.1
HECRAS Output -- Floodplain

River	Reach	River Sta	Q Total	W.S. Elev	Crit W.S.	Vel Total	Top Width	Max Chl Dpth	Froude # XS	Sta W.S. Lft	Sta W.S. Rgt
			(cfs)	(ft)	(ft)	(ft/s)	(ft)	(ft)		(ft)	(ft)
W12.0375	R0100	0.704	186	1718.36	1718.36	3.08	99.12	1.36	0.7	9924.51	10023.64
W12.0375	R0100	0.628	204	1709.39	1709.39	4.16	55.89	1.69	0.78	9983.94	10039.83
W12.0375	R0100	0.535	204	1698.48	1698.48	4.28	64.54	2.48	0.88	9948.79	10019.64
W12.0375	R0100	0.462	204	1690.19	1690.19	5.37	38.62	2.29	0.95	9973.17	10011.79
W12.0375	R0100	0.388	204	1681.75	1681.75	4.74	38.7	2.05	0.79	9990.88	10029.59
W12.0375	R0100	0.31	204	1673.42	1673.42	4.36	51.21	1.62	0.81	9972.36	10023.57
W12.0400	R0100	0.201	305	1832.44	1832.44	3.63	155.98	0.84	0.87	9922.01	10078
W12.0400	R0100	0.155	305	1825.7	1825.7	2.82	166.47	1.7	0.62	9964.32	10130.79
W12.0400	R0100	0.103	305	1818.24	1818.24	3.02	198.27	1.15	0.75	9921	10119.27
W12.0400	R0100	0.061	290	1812.3	1812.27	3	234.69	0.8	0.82	9845	10079.78
W12.0500	R0100	1.098	107	1709.82	1709.82	4.08	51.62	1.02	1.01	9980.54	10032.16
W12.0500	R0100	1.063	107	1705.32	1705.32	3.17	80.89	0.72	0.86	9931.99	10012.88
W12.0500	R0100	0.997	107	1694.63	1694.63	3.87	41.55	1.33	0.84	9980.28	10021.83
W12.0500	R0100	0.972	107	1692.45	1692.42	2.81	78.85	1.45	0.71	9974.09	10052.94
W12.0500	R0100	0.934	107	1688.45	1688.43	2.46	267.87	2.45	0.73	9789.73	10057.6
W12.0500	R0100	0.893	107	1683.56	1683.34	1.81	146.9	1.36	0.5	9865.89	10060.59
W12.0500	R0100	0.858	107	1679.69	1679.61	2.1	144.75	0.79	0.62	9899.97	10047.91
W12.0500	R0100	0.838	107	1676.71	1676.54	2.78	69.19	1.11	0.66	9908.58	10006.15
W12.0600	R0100	0.12	122	1688.53	1688.53	2.82	100.3	1.03	0.76	9981.66	10081.95
W12.0600	R0100	0.082	122	1683.7		3.62	48.16	1.4	0.76	9983.54	10031.71
W12.0600	R0100	0.05	122	1680.14	1680.14	3.61	81.77	1.14	0.99	9960.75	10042.52
W12.0600	R0100	0.028	122	1676.83	1676.83	3.68	51.12	1.83	0.81	9966.03	10017.15

Table 5.9.2
HECRAS Output -- Floodway

River	Reach	River Sta	Top Wdth Act	Area	Vel Total	W.S. Elev	Base WS	Prof Delta WS
			(ft)	(sq ft)	(ft/s)	(ft)	(ft)	(ft)
W10.0000	R0500	3.448	236.78	139.32	2.46	1953.94	1953.94	
W10.0000	R0500	3.448	242.41	146.08	2.35	1953.97	1953.94	0.03
W10.0000	R0500	3.359	184.4	101.56	3.38	1941.6	1941.6	
W10.0000	R0500	3.359	176.92	96.73	3.55	1941.57	1941.6	-0.03
W10.0000	R0500	3.264	142.59	103.11	3.33	1927.97	1927.97	
W10.0000	R0500	3.264	144	107.12	3.2	1928	1927.97	0.03
W10.0000	R0500	3.17	90.26	86.24	3.98	1914.08	1914.08	
W10.0000	R0500	3.17	90.15	85.8	4	1914.07	1914.08	0
W10.0000	R0500	3.074	188.6	117.47	2.92	1899.7	1899.7	
W10.0000	R0500	3.074	188.58	117.45	2.92	1899.7	1899.7	0
W10.0555	R0100	1.128	152.05	114.71	3.37	2028.92	2028.92	
W10.0555	R0100	1.128	151.47	105.28	3.42	2028.91	2028.92	-0.01
W10.0555	R0100	1.042	130.86	106.49	3.36	2015.67	2015.67	
W10.0555	R0100	1.042	131.21	107.05	3.34	2015.68	2015.67	0
W10.0555	R0100	0.995	125.73	102.83	3.48	2008.73	2008.73	
W10.0555	R0100	0.995	125.66	102.58	3.49	2008.73	2008.73	0
W10.0555	R0100	0.956	98.48	99	3.62	2004.21	2004.21	
W10.0555	R0100	0.956	98.54	99.16	3.61	2004.21	2004.21	0
W10.0555	R0100	0.917	160.74	113.54	3.79	1998.91	1998.91	
W10.0555	R0100	0.917	160.65	94.3	3.8	1998.91	1998.91	0
W10.0555	R0200	0.884	99.41	59.47	3.08	1993.17	1993.17	
W10.0555	R0200	0.884	99.56	60.18	3.04	1993.18	1993.17	0.01
W10.0555	R0200	0.799	147.85	60.32	3.03	1980.28	1980.28	
W10.0555	R0200	0.799	166	63.28	2.89	1980.3	1980.28	0.02
W10.0555	R0200	0.71	126.17	66.01	2.77	1968.29	1968.29	
W10.0555	R0200	0.71	125.39	64.28	2.85	1968.28	1968.29	-0.01
W10.0555	R0200	0.67	156.53	69.24	2.64	1963.36	1963.36	
W10.0555	R0200	0.67	156.87	70.48	2.6	1963.37	1963.36	0.01
W10.0555	R0200	0.621	128.54	88.44	2.56	1956.37	1956.37	
W10.0555	R0200	0.621	128.54	71.75	2.56	1956.37	1956.37	0
W10.0555	R0200	0.527	87.65	63.67	2.87	1942.03	1942.03	
W10.0555	R0200	0.527	86.62	62.7	2.92	1942.02	1942.03	-0.01
W10.0555	R0200	0.432	162.32	83.37	2.82	1927.71	1927.71	
W10.0555	R0200	0.432	163.16	66.48	2.75	1927.72	1927.71	0.01
W10.0555	R0200	0.34	54.86	42.88	4.33	1913.94	1913.94	
W10.0555	R0200	0.34	54.63	41.99	4.36	1913.94	1913.94	0
W10.0555	R0200	0.242	48.98	42.71	4.29	1900.72	1900.72	
W10.0555	R0200	0.242	49.02	42.78	4.28	1900.72	1900.72	0
W10.0555	R0200	0.157	50.63	42.45	4.31	1889.18	1889.18	
W10.0555	R0200	0.157	51	44.74	4.09	1889.22	1889.18	0.05
W10.0555	R0200	0.077	139.86	66.01	2.77	1877.04	1877.04	
W10.0555	R0200	0.077	140.07	66.78	2.74	1877.05	1877.04	0.01
W10.0555	R0200	0.021	79.66	53.88	3.4	1869.19	1869.19	
W10.0555	R0200	0.021	81	58.46	3.13	1869.25	1869.19	0.06
W10.0558	R0100	0.186	122.03	81.3	2.71	1993.27	1993.27	
W10.0558	R0100	0.186	121.98	64.57	2.71	1993.27	1993.27	0
W10.0558	R0100	0.109	127.29	60.36	2.9	1981.35	1981.35	
W10.0558	R0100	0.109	128.46	61.55	2.84	1981.36	1981.35	0.01

Table 5.9.2
HECRAS Output -- Floodway

River	Reach	River Sta	Top Wdth Act	Area	Vel Total	W.S. Elev	Base WS	Prof Delta WS
			(ft)	(sq ft)	(ft/s)	(ft)	(ft)	(ft)
W10.0558	R0100	0.05	146.19	101.21	1.73	1973.88	1973.88	
W10.0558	R0100	0.05	139.66	87.98	1.99	1973.78	1973.88	-0.09
W10.0600	R0100	3.445	153.16	198.47	3.8	1953.64	1953.64	
W10.0600	R0100	3.445	153.5	151.52	3.76	1953.65	1953.64	0.01
W10.0600	R0100	3.422	84.4	99.9	5.71	1950.59	1950.59	
W10.0600	R0100	3.422	86	106.55	5.35	1950.66	1950.59	0.08
W10.0600	R0100	3.351	135.15	166.03	3.82	1941.15	1941.15	
W10.0600	R0100	3.351	135.14	149.3	3.82	1941.15	1941.15	0
W10.0600	R0100	3.308	135.88	157.6	3.9	1935.39	1935.39	
W10.0600	R0100	3.308	136	151.69	3.76	1935.43	1935.39	0.04
W11.0000	R0100	5.687	637.9	568.6	3.21	2149.59	2149.59	
W11.0000	R0100	5.687	639.42	442.4	3.16	2149.6	2149.59	0.01
W11.0000	R0100	5.626	547.23	395.61	3.53	2140.29	2140.29	
W11.0000	R0100	5.626	540.47	384.98	3.63	2140.27	2140.29	-0.02
W11.0000	R0100	5.551	646.1	437.98	3.19	2129.14	2129.14	
W11.0000	R0100	5.551	650.64	448.9	3.11	2129.15	2129.14	0.02
W11.0000	R0200	5.511	314.58	214.51	3.69	2122.98	2122.98	
W11.0000	R0200	5.511	312.22	211.53	3.74	2122.97	2122.98	-0.01
W11.0000	R0200	5.437	123.87	163.39	4.84	2113	2113	
W11.0000	R0200	5.437	124.13	165.18	4.79	2113.01	2113	0.01
W11.0000	R0200	5.347	100.85	135.39	5.84	2100.63	2100.63	
W11.0000	R0200	5.347	101	140.12	5.64	2100.67	2100.63	0.05
W11.0000	R0200	5.257	194.61	218.06	3.63	2089	2089	
W11.0000	R0200	5.257	194.86	219.48	3.6	2089.01	2089	0.01
W11.0000	R0200	5.158	145.79	123.89	6.38	2075.39	2075.39	
W11.0000	R0200	5.158	145.79	123.89	6.38	2075.39	2075.39	0
W11.0000	R0200	5.122	265.9	581.57	3.26	2070.99	2070.99	
W11.0000	R0200	5.122	265.9	242.91	3.26	2070.99	2070.99	0
W11.0000	R0200	5.089	177.49	334	4.63	2066.13	2066.13	
W11.0000	R0200	5.089	177.49	170.66	4.63	2066.13	2066.13	0
W11.0000	R0200	5.029	299.42	234.12	3.38	2058.68	2058.68	
W11.0000	R0200	5.029	299.84	236.17	3.35	2058.68	2058.68	0.01
W11.0000	R0200	4.933	284.96	211.1	3.75	2044.79	2044.79	
W11.0000	R0200	4.933	284.57	209.43	3.78	2044.78	2044.79	-0.01
W11.0000	R0200	4.877	352.44	271.58	3.1	2036.16	2036.16	
W11.0000	R0200	4.877	351.51	252.29	3.14	2036.16	2036.16	-0.01
W11.0000	R0300	4.843	221.71	173.87	3.37	2031.97	2031.97	
W11.0000	R0300	4.843	221.94	175.77	3.33	2031.98	2031.97	0.01
W11.0000	R0300	4.821	335.56	300.02	2.88	2028.9	2028.9	
W11.0000	R0300	4.821	335.17	201.87	2.9	2028.89	2028.9	0
W11.0000	R0400	4.799	232.93	228.75	3.36	2025.69	2025.69	
W11.0000	R0400	4.799	232.95	150.83	3.35	2025.69	2025.69	0
W11.0000	R0400	4.755	217.74	196.68	3.11	2019.77	2019.77	
W11.0000	R0400	4.755	204.15	146.62	3.45	2019.69	2019.77	-0.08
W11.0000	R0400	4.674	201.02	156.04	3.24	2006.9	2006.9	
W11.0000	R0400	4.674	200.23	154.05	3.28	2006.89	2006.9	-0.01
W11.0000	R0400	4.584	135.14	106.64	4.74	1993.84	1993.84	
W11.0000	R0400	4.584	136.57	109.08	4.64	1993.86	1993.84	0.02

Table 5.9.2
HECRAS Output -- Floodway

River	Reach	River Sta	Top Wdth Act	Area	Vel Total	W.S. Elev	Base WS	Prof Delta WS
			(ft)	(sq ft)	(ft/s)	(ft)	(ft)	(ft)
W11.0000	R0400	4.501	186.06	139.96	3.62	1982.2	1982.2	
W11.0000	R0400	4.501	185.35	138.46	3.65	1982.2	1982.2	-0.01
W11.0000	R0400	4.427	194.29	169.3	2.99	1973.26	1973.26	
W11.0000	R0400	4.427	194.1	167.92	3.01	1973.25	1973.26	-0.01
W11.0000	R0400	4.339	113.71	225.05	4.23	1961.48	1961.48	
W11.0000	R0400	4.339	113.7	119.44	4.24	1961.48	1961.48	0
W11.0000	R0400	4.315	129.93	142.18	4.44	1957.9	1957.9	
W11.0000	R0400	4.315	130	114.67	4.41	1957.91	1957.9	0.01
W11.0000	R0500	4.27	90.55	133.48	5.02	1952.46	1952.46	
W11.0000	R0500	4.27	90.55	116.75	5.02	1952.46	1952.46	0
W11.0000	R0500	4.18	102	129.61	4.52	1940.31	1940.31	
W11.0000	R0500	4.18	103	135.91	4.31	1940.38	1940.31	0.06
W11.0000	R0500	4.113	112.95	127.33	4.6	1930.58	1930.58	
W11.0000	R0500	4.113	113.04	127.66	4.59	1930.58	1930.58	0
W11.0000	R0500	4.08	106	163.73	4.01	1926.51	1926.51	
W11.0000	R0500	4.08	106	146.2	4.01	1926.51	1926.51	0
W11.0000	R0500	4.053	214.55	172.92	3.39	1921.82	1921.82	
W11.0000	R0500	4.053	214.64	173.39	3.38	1921.83	1921.82	0
W11.0000	R0500	4.01	237.31	149.8	3.91	1915.2	1915.2	
W11.0000	R0500	4.01	244	160.91	3.64	1915.24	1915.2	0.05
W11.0000	R0500	3.961	335.08	200.8	2.92	1908.05	1908.05	
W11.0000	R0500	3.961	334.72	199.04	2.94	1908.04	1908.05	-0.01
W11.0000	R0500	3.905	331.06	198.33	2.95	1900.55	1900.55	
W11.0000	R0500	3.905	331.98	200.72	2.92	1900.56	1900.55	0.01
W11.0000	R0500	3.855	198.12	148.9	3.94	1893.45	1893.45	
W11.0000	R0500	3.855	197.34	147.21	3.98	1893.44	1893.45	-0.01
W11.0000	R0500	3.797	167.22	152.31	3.85	1885.41	1885.41	
W11.0000	R0500	3.797	167.51	154.03	3.8	1885.42	1885.41	0.01
W11.0000	R0500	3.724	84.13	97.47	6.01	1874.76	1874.76	
W11.0000	R0500	3.724	84.14	97.56	6.01	1874.76	1874.76	0
W11.0000	R0500	3.638	45.65	82.41	7.11	1863.44	1863.44	
W11.0000	R0500	3.638	45.64	82.36	7.11	1863.44	1863.44	0
W11.0000	R0500	3.576	68.85	96.16	6.09	1855.86	1855.86	
W11.0000	R0500	3.576	68.8	96.02	6.1	1855.86	1855.86	0
W11.0000	R0500	3.555	104.43	153.8	5.03	1852.51	1852.51	
W11.0000	R0500	3.555	104.55	117.48	4.99	1852.52	1852.51	0.01
W11.0000	R0600	3.504	118.14	220.79	5.03	1846.49	1846.49	
W11.0000	R0600	3.504	119.07	117.93	4.97	1846.5	1846.49	0.01
W11.0000	R0600	3.451	99.55	314.51	4.67	1841.02	1841.02	
W11.0000	R0600	3.451	99.57	125.72	4.66	1841.02	1841.02	0
W11.0000	R0700	3.402	490.34	393.17	2.82	1837.73	1837.73	
W11.0000	R0700	3.402	490.37	393.53	2.81	1837.73	1837.73	0
W11.0000	R0700	3.356	226.68	359.49	3.08	1835.57	1835.57	
W11.0000	R0700	3.356	226.99	359.96	3.08	1835.57	1835.57	0
W11.0000	R0700	3.266	36.73	116.97	9.46	1830.75	1830.75	
W11.0000	R0700	3.266	36.7	116.69	9.49	1830.75	1830.75	-0.01
W11.0000	R0700	3.177	74.09	231.44	4.78	1822.34	1822.34	
W11.0000	R0700	3.177	74.1	231.46	4.78	1822.34	1822.34	0
W11.0000	R0700	3.15	40.31	117.44	9.43	1819.86	1819.86	
W11.0000	R0700	3.15	40.31	117.42	9.43	1819.86	1819.86	0

Table 5.9.2
HECRAS Output -- Floodway

River	Reach	River Sta	Top Wdth Act	Area	Vel Total	W.S. Elev	Base WS	Prof Delta WS
			(ft)	(sq ft)	(ft/s)	(ft)	(ft)	(ft)
W11.0000	R0700	3.057	213.49	304.94	4.04	1809.00	1809.00	
W11.0000	R0700	3.057	213.37	268.45	4.12	1808.97	1809.00	-0.03
W11.0000	R0800	3.004	113.23	186.31	5.97	1800.91	1800.91	
W11.0000	R0800	3.004	111.12	182.53	6.06	1800.88	1800.91	-0.02
W11.0000	R0800	2.96	244.48	308.64	3.59	1796.13	1796.13	
W11.0000	R0800	2.96	247.02	313.03	3.54	1796.15	1796.13	0.02
W11.0000	R0800	2.896	330.58	261.99	3.59	1789.43	1789.43	
W11.0000	R0800	2.896	330.3	256.75	3.66	1789.41	1789.43	-0.02
W11.0100	R0100	2.05	183.16	214.49	3.42	2124.11	2124.11	
W11.0100	R0100	2.05	153.4	140.18	4.28	2123.9	2124.11	-0.21
W11.0100	R0100	1.984	296.96	177.78	3.37	2114.35	2114.35	
W11.0100	R0100	1.984	298.9	182.58	3.29	2114.36	2114.35	0.02
W11.0100	R0100	1.897	294.77	200.74	2.99	2101.32	2101.32	
W11.0100	R0100	1.897	298.1	206.75	2.9	2101.34	2101.32	0.02
W11.0100	R0100	1.806	135.03	127.29	4.25	2089.03	2089.03	
W11.0100	R0100	1.806	135.52	128.11	4.22	2089.03	2089.03	0.01
W11.0100	R0100	1.715	186.6	129.77	4.17	2076.02	2076.02	
W11.0100	R0100	1.715	160.91	114.84	4.71	2075.94	2076.02	-0.09
W11.0100	R0100	1.681	247.95	166.42	3.25	2071.24	2071.24	
W11.0100	R0100	1.681	259.42	185.51	2.92	2071.32	2071.24	0.08
W11.0100	R0100	1.639	196.24	145.04	3.73	2065.68	2065.68	
W11.0100	R0100	1.639	187.99	127.56	4.24	2065.59	2065.68	-0.09
W11.0100	R0100	1.579	188.44	137.35	3.94	2058.12	2058.12	
W11.0100	R0100	1.579	194.34	151.42	3.57	2058.19	2058.12	0.07
W11.0100	R0100	1.475	97.98	266.76	4.79	2043.67	2043.67	
W11.0100	R0100	1.475	98.16	114.45	4.73	2043.69	2043.67	0.01
W11.0100	R0100	1.412	197.62	145.24	3.69	2033.49	2033.49	
W11.0100	R0100	1.412	197.7	145.36	3.69	2033.49	2033.49	0
W11.0100	R0100	1.391	180.11	161.23	3.32	2030.27	2030.27	
W11.0100	R0100	1.391	181.35	165.6	3.24	2030.29	2030.27	0.02
W11.0100	R0100	1.316	190.09	137.25	3.91	2019.97	2019.97	
W11.0100	R0100	1.316	188.41	131.57	4.07	2019.94	2019.97	-0.03
W11.0100	R0100	1.221	115	143.66	4.35	2006.56	2006.56	
W11.0100	R0100	1.221	115.72	127.58	4.2	2006.59	2006.56	0.04
W11.0100	R0100	1.144	138.41	139.55	3.84	1995.99	1995.99	
W11.0100	R0100	1.144	138.92	143.43	3.74	1996.02	1995.99	0.03
W11.0100	R0100	1.05	118.14	101.55	5.28	1982.56	1982.56	
W11.0100	R0100	1.05	118.2	101.79	5.27	1982.56	1982.56	0
W11.0100	R0100	0.963	131.44	136.3	3.93	1970.11	1970.11	
W11.0100	R0100	0.963	131.51	136.64	3.92	1970.11	1970.11	0
W11.0100	R0100	0.888	133.36	142.11	3.77	1959.52	1959.52	
W11.0100	R0100	0.888	132.91	139.82	3.83	1959.5	1959.52	-0.02
W11.0100	R0100	0.871	164.25	145.87	3.67	1957.12	1957.12	
W11.0100	R0100	0.871	164.37	146.63	3.66	1957.12	1957.12	0
W11.0100	R0100	0.847	151.02	140.4	3.82	1954.12	1954.12	
W11.0100	R0100	0.847	151.01	140.38	3.82	1954.12	1954.12	0
W11.0100	R0100	0.777	169.1	130.69	4.1	1943.76	1943.76	
W11.0100	R0100	0.777	168.72	130.07	4.12	1943.75	1943.76	0
W11.0100	R0100	0.701	124.84	124.02	4.32	1933.91	1933.91	

Table 5.9.2
HECRAS Output -- Floodway

River	Reach	River Sta	Top Wdth Act	Area	Vel Total	W.S. Elev	Base WS	Prof Delta WS
			(ft)	(sq ft)	(ft/s)	(ft)	(ft)	(ft)
W11.0100	R0100	0.701	125.27	124.66	4.3	1933.92	1933.91	0.01
W11.0100	R0100	0.631	170.2	137.78	3.89	1924.74	1924.74	
W11.0100	R0100	0.631	169.83	135.75	3.95	1924.72	1924.74	-0.01
W11.0100	R0100	0.544	147.2	133.43	4.02	1912.64	1912.64	
W11.0100	R0100	0.544	147.42	135	3.97	1912.65	1912.64	0.01
W11.0100	R0100	0.511	141.73	121.8	4.4	1908.28	1908.28	
W11.0100	R0100	0.511	141.52	120.94	4.43	1908.28	1908.28	-0.01
W11.0100	R0100	0.469	201.68	165.92	3.23	1901.83	1901.83	
W11.0100	R0100	0.469	201.85	167.15	3.21	1901.84	1901.83	0.01
W11.0100	R0100	0.438	208.14	129.3	4.15	1897.02	1897.02	
W11.0100	R0100	0.438	207.31	127.47	4.2	1897.01	1897.02	-0.01
W11.0100	R0100	0.356	185.96	165.12	3.25	1886.07	1886.07	
W11.0100	R0100	0.356	186.15	165.85	3.23	1886.07	1886.07	0
W11.0100	R0100	0.307	223.02	162.5	3.65	1879.18	1879.18	
W11.0100	R0100	0.307	222.78	139.46	3.84	1879.15	1879.18	-0.03
W11.0100	R0200	0.262	100.38	63.09	3.58	1873.66	1873.66	
W11.0100	R0200	0.262	101.51	65.89	3.43	1873.69	1873.66	0.03
W11.0100	R0200	0.228	138.97	92.23	2.72	1868.49	1868.49	
W11.0100	R0200	0.228	139	84.45	2.68	1868.5	1868.49	0.01
W11.0100	R0300	0.208	319	205.52	2.25	1866	1866	
W11.0100	R0300	0.208	319	181.76	2.25	1866	1866	0
W11.0100	R0300	0.134	256.84	106.55	3.84	1855.39	1855.39	
W11.0100	R0300	0.134	243.76	101.99	4.01	1855.38	1855.39	-0.02
W11.0100	R0300	0.044	256.23	145.62	2.81	1843.5	1843.5	
W11.0100	R0300	0.044	258.86	148.99	2.75	1843.51	1843.5	0.01
W11.0155	R0100	0.272	89.65	84.84	3.65	1873.56	1873.56	
W11.0155	R0100	0.272	90	91.01	3.41	1873.63	1873.56	0.07
W11.0155	R0100	0.237	88.53	224.47	3.43	1868.79	1868.79	
W11.0155	R0100	0.237	88.5	89.85	3.45	1868.78	1868.79	-0.01
W11.0155	R0100	0.219	68.79	118.93	3.87	1865.88	1865.88	
W11.0155	R0100	0.219	68.83	80.37	3.86	1865.89	1865.88	0
W11.0155	R0100	0.133	35.75	50.17	6.18	1853.52	1853.52	
W11.0155	R0100	0.133	35.96	51.79	5.99	1853.57	1853.52	0.05
W11.0155	R0100	0.067	57.98	60.45	5.13	1846	1846	
W11.0155	R0100	0.067	58	66.85	4.64	1846.11	1846	0.11
W11.0155	R0100	0.049	125.53	86.2	3.6	1843.41	1843.41	
W11.0155	R0100	0.049	125.67	86.83	3.57	1843.42	1843.41	0.01
W11.0205	R0100	0.248	106.21	36.74	2.18	2025.72	2025.72	
W11.0205	R0100	0.248	107	39.29	2.04	2025.74	2025.72	0.02
W11.0205	R0100	0.207	45.45	21.98	3.64	2019.53	2019.53	
W11.0205	R0100	0.207	46	23.52	3.4	2019.56	2019.53	0.03
W11.0205	R0100	0.129	100.52	34.44	2.32	2008.73	2008.73	
W11.0205	R0100	0.129	100.1	34.1	2.35	2008.73	2008.73	0
W11.0205	R0100	0.031	50.13	25.63	3.12	1994.13	1994.13	
W11.0205	R0100	0.031	52.7	28.07	2.85	1994.18	1994.13	0.05
W11.0405	R0100	0.337	84.83	117.45	4.99	1845.27	1845.27	
W11.0405	R0100	0.337	85.54	120.55	4.86	1845.31	1845.27	0.04

Table 5.9.2
HECRAS Output -- Floodway

River	Reach	River Sta	Top Wdth Act	Area	Vel Total	W.S. Elev	Base WS	Prof Delta WS
			(ft)	(sq ft)	(ft/s)	(ft)	(ft)	(ft)
W11.0405	R0100	0.296	139.85	159.72	3.87	1839.45	1839.45	
W11.0405	R0100	0.296	128.98	133.36	4.39	1839.32	1839.45	-0.13
W11.0405	R0100	0.262	185.71	170.05	3.45	1834.33	1834.33	
W11.0405	R0100	0.262	184.95	168.76	3.47	1834.32	1834.33	-0.01
W11.0405	R0100	0.226	183.81	130.38	4.49	1829.01	1829.01	
W11.0405	R0100	0.226	186.11	131.96	4.44	1829.02	1829.01	0.01
W11.0405	R0100	0.142	44.46	85.86	6.83	1818.92	1818.92	
W11.0405	R0100	0.142	45.27	88.2	6.64	1818.97	1818.92	0.05
W11.0405	R0100	0.056	23.36	86.71	8.86	1807.92	1807.92	
W11.0405	R0100	0.056	23.4	66.49	8.81	1807.93	1807.92	0.01
W12.0000	R0100	4.38	144.24	76.52	3.28	2031.95	2031.95	
W12.0000	R0100	4.38	145.51	77.98	3.22	2031.96	2031.95	0.01
W12.0000	R0100	4.288	123.84	68.68	3.65	2018.11	2018.11	
W12.0000	R0100	4.288	126.22	71.34	3.52	2018.13	2018.11	0.02
W12.0000	R0100	4.218	38.06	45.13	5.56	2007.73	2007.73	
W12.0000	R0100	4.218	38.41	46.23	5.43	2007.76	2007.73	0.03
W12.0000	R0100	4.115	116.16	76.1	3.3	1994.17	1994.17	
W12.0000	R0100	4.115	116.54	77.83	3.22	1994.18	1994.17	0.01
W12.0000	R0200	4.084	162.83	104.93	3.3	1989.53	1989.53	
W12.0000	R0200	4.084	154.82	101.85	3.4	1989.51	1989.53	-0.02
W12.0000	R0200	4.029	80.56	67.01	5.16	1982.27	1982.27	
W12.0000	R0200	4.029	80.7	67.79	5.1	1982.28	1982.27	0.01
W12.0000	R0200	3.963	67.63	69.7	4.96	1973.76	1973.76	
W12.0000	R0200	3.963	67.59	69.42	4.98	1973.76	1973.76	0
W12.0000	R0200	3.909	79.97	72.72	4.76	1966.01	1966.01	
W12.0000	R0200	3.909	79.52	71.26	4.86	1965.99	1966.01	-0.02
W12.0000	R0300	3.89	82.63	51.53	3.49	1963.65	1963.65	
W12.0000	R0300	3.89	84	55.03	3.27	1963.69	1963.65	0.04
W12.0000	R0300	3.856	72.26	47.01	3.83	1958.41	1958.41	
W12.0000	R0300	3.856	73.6	48.89	3.68	1958.44	1958.41	0.03
W12.0000	R0300	3.807	131.52	66.94	2.69	1951.33	1951.33	
W12.0000	R0300	3.807	131.34	66	2.73	1951.33	1951.33	-0.01
W12.0000	R0300	3.731	89.55	49.94	3.6	1939.74	1939.74	
W12.0000	R0300	3.731	91	51.1	3.52	1939.75	1939.74	0.01
W12.0000	R0300	3.665	122.87	79.81	2.26	1929.51	1929.51	
W12.0000	R0300	3.665	122.87	79.81	2.26	1929.51	1929.51	0
W12.0000	R0300	3.567	75.6	42.44	4.24	1916.57	1916.57	
W12.0000	R0300	3.567	76.46	43.48	4.14	1916.58	1916.57	0.01
W12.0000	R0300	3.513	100.36	54.33	3.31	1909.49	1909.49	
W12.0000	R0300	3.513	101.52	56.19	3.2	1909.51	1909.49	0.02
W12.0000	R0300	3.453	31.71	32.69	5.51	1901.33	1901.33	
W12.0000	R0300	3.453	31.69	32.64	5.51	1901.33	1901.33	0
W12.0000	R0300	3.402	60.44	115.02	4.3	1893.63	1893.63	
W12.0000	R0300	3.402	60.74	42.43	4.28	1893.63	1893.63	0
W12.0000	R0300	3.32	311.71	230.93	2.96	1882.47	1882.47	
W12.0000	R0300	3.32	313	249.29	2.74	1882.53	1882.47	0.06
W12.0000	R0300	3.261	265.27	323.37	3.69	1874.26	1874.26	
W12.0000	R0300	3.261	254.33	156.99	4.35	1874.15	1874.26	-0.11
W12.0000	R0400	3.209	192.28	114.39	3.32	1867.48	1867.48	

Table 5.9.2
HECRAS Output -- Floodway

River	Reach	River Sta	Top Wdth Act	Area	Vel Total	W.S. Elev	Base WS	Prof Delta WS
			(ft)	(sq ft)	(ft/s)	(ft)	(ft)	(ft)
W12.0000	R0400	3.209	193	137.31	2.77	1867.6	1867.48	0.12
W12.0000	R0400	3.168	176.39	116.35	3.27	1861.9	1861.9	
W12.0000	R0400	3.168	177	120.7	3.15	1861.92	1861.9	0.02
W12.0000	R0400	3.098	195.29	114.99	3.3	1851.51	1851.51	
W12.0000	R0400	3.098	195.44	116.13	3.27	1851.51	1851.51	0.01
W12.0000	R0400	3.001	239.44	170.68	2.23	1838.4	1838.4	
W12.0000	R0400	3.001	239.44	170.68	2.23	1838.4	1838.4	0
W12.0000	R0500	2.964	74.41	30.69	2.44	1832.68	1832.68	
W12.0000	R0500	2.964	74.93	31.08	2.41	1832.69	1832.68	0.01
W12.0000	R0500	2.912	82.59	30.62	2.45	1825.78	1825.78	
W12.0000	R0500	2.912	82.43	30.21	2.48	1825.77	1825.78	0
W12.0000	R0500	2.862	73.51	23.34	3.21	1817.49	1817.49	
W12.0000	R0500	2.862	74	24.04	3.12	1817.5	1817.49	0.01
W12.0000	R0500	2.798	66.59	29.85	3.02	1808.21	1808.21	
W12.0000	R0500	2.798	67	31.3	2.88	1808.23	1808.21	0.02
W12.0000	R0500	2.75	72.36	29.14	3.09	1801.47	1801.47	
W12.0000	R0500	2.75	72.36	29.14	3.09	1801.47	1801.47	0
W12.0000	R0500	2.652	32.9	28.15	5.22	1787.75	1787.75	
W12.0000	R0500	2.652	32.9	28.15	5.22	1787.75	1787.75	0
W12.0000	R0500	2.603	53.52	32.48	4.53	1782.04	1782.04	
W12.0000	R0500	2.603	53.52	32.48	4.53	1782.04	1782.04	0
W12.0000	R0500	2.531	69.06	38.19	3.85	1772.28	1772.28	
W12.0000	R0500	2.531	69	38.1	3.86	1772.28	1772.28	0
W12.0000	R0500	2.476	37.3	109.67	5.16	1764.24	1764.24	
W12.0000	R0500	2.476	37.22	28.4	5.18	1764.24	1764.24	0
W12.0000	R0500	2.389	58.41	35.81	4.11	1752.63	1752.63	
W12.0000	R0500	2.389	58.37	35.75	4.11	1752.63	1752.63	0
W12.0000	R0500	2.294	50.33	34.87	4.22	1741.6	1741.6	
W12.0000	R0500	2.294	50.83	35.77	4.11	1741.62	1741.6	0.02
W12.0000	R0500	2.241	203.68	139.65	2.04	1735.62	1735.62	
W12.0000	R0500	2.241	203.8	72.71	2.02	1735.62	1735.62	0
W12.0000	R0500	2.193	245.08	445.14	0.59	1729.71	1729.71	
W12.0000	R0500	2.193	245.08	248.49	0.59	1729.71	1729.71	0
W12.0000	R0500	2.153	274.38	179.99	0.82	1723.71	1723.71	
W12.0000	R0500	2.153	274.38	179.99	0.82	1723.71	1723.71	0
W12.0000	R0600	2.112	336.48	155.24	2.45	1718.94	1718.94	
W12.0000	R0600	2.112	336.04	151.42	2.51	1718.93	1718.94	-0.01
W12.0000	R0600	2.078	267.43	121.29	3.13	1714.38	1714.38	
W12.0000	R0600	2.078	270.26	124.8	3.04	1714.39	1714.38	0.01
W12.0000	R0700	2.045	143.33	85.24	3.2	1709.9	1709.9	
W12.0000	R0700	2.045	142.58	82.88	3.29	1709.88	1709.9	-0.02
W12.0000	R0700	2.007	140.19	105.02	3.35	1704.6	1704.6	
W12.0000	R0700	2.007	141.81	84.36	3.24	1704.62	1704.6	0.02
W12.0000	R0700	1.945	207.22	146.48	2.32	1698.12	1698.12	
W12.0000	R0700	1.945	206.91	116.87	2.34	1698.12	1698.12	0
W12.0000	R0700	1.906	212.16	93.78	2.91	1693.68	1693.68	
W12.0000	R0700	1.906	212.39	94.22	2.9	1693.68	1693.68	0
W12.0000	R0800	1.871	70.48	41.61	3.63	1688.53	1688.53	
W12.0000	R0800	1.871	70.77	42.14	3.58	1688.54	1688.53	0.01
W12.0000	R0800	1.846	62.32	54.03	4.19	1685.94	1685.94	

Table 5.9.2
HECRAS Output -- Floodway

River	Reach	River Sta	Top Wdth Act	Area	Vel Total	W.S. Elev	Base WS	Prof Delta WS
			(ft)	(sq ft)	(ft/s)	(ft)	(ft)	(ft)
W12.0000	R0800	1.846	62.95	36.96	4.09	1685.96	1685.94	0.01
W12.0000	R0800	1.816	66.5	210.56	2.92	1683.08	1683.08	
W12.0000	R0800	1.816	67.18	52.82	2.86	1683.1	1683.08	0.02
W12.0000	R0800	1.765	139.17	333.78	3.47	1678.73	1678.73	
W12.0000	R0800	1.765	139.07	106.32	3.48	1678.73	1678.73	0
W12.0000	R0800	1.667	167.4	100.34	3.69	1665.91	1665.91	
W12.0000	R0800	1.667	167.22	100.26	3.69	1665.91	1665.91	0
W12.0100	R0100	0.083	32.52	35.71	5.01	1963.39	1963.39	
W12.0100	R0100	0.083	32.92	37.4	4.79	1963.44	1963.39	0.05
W12.0100	R0100	0.046	70.6	52.93	3.38	1958.08	1958.08	
W12.0100	R0100	0.046	72	57.39	3.12	1958.14	1958.08	0.06
W12.0100	R0100	0.03	42.7	41.43	4.32	1955.94	1955.94	
W12.0100	R0100	0.03	43.35	42.7	4.19	1955.97	1955.94	0.03
W12.0300	R0100	2.982	72.93	68.58	4.42	1867.41	1867.41	
W12.0300	R0100	2.982	74	72.74	4.17	1867.47	1867.41	0.06
W12.0300	R0100	2.942	54.3	57.97	5.23	1861.61	1861.61	
W12.0300	R0100	2.942	54.26	57.86	5.24	1861.61	1861.61	0
W12.0300	R0100	2.868	118.2	94.33	3.48	1852.09	1852.09	
W12.0300	R0100	2.868	118.3	88.76	3.42	1852.1	1852.09	0.01
W12.0300	R0100	2.809	150.91	84.18	3.6	1843.94	1843.94	
W12.0300	R0100	2.809	152.38	87.75	3.45	1843.97	1843.94	0.02
W12.0300	R0100	2.771	181.01	267.37	2.28	1838.91	1838.91	
W12.0300	R0100	2.771	181.01	133.87	2.28	1838.91	1838.91	0
W12.0300	R0100	2.716	256.44	131.79	2.74	1831.8	1831.8	
W12.0300	R0100	2.716	255.56	109.7	2.76	1831.79	1831.8	0
W12.0300	R0100	2.667	217.47	98.82	3.07	1824.81	1824.81	
W12.0300	R0100	2.667	221.08	102.86	2.95	1824.83	1824.81	0.02
W12.0300	R0100	2.577	123.49	77.66	3.9	1811.43	1811.43	
W12.0300	R0100	2.577	119.49	75.65	4.01	1811.41	1811.43	-0.02
W12.0300	R0200	2.516	430.93	194.73	3.05	1802.84	1802.84	
W12.0300	R0200	2.516	431.19	197.78	3	1802.84	1802.84	0.01
W12.0300	R0200	2.494	556.01	218.89	2.45	1800.23	1800.23	
W12.0300	R0200	2.494	555.14	215.3	2.49	1800.22	1800.23	-0.01
W12.0300	R0200	2.44	291.64	148.92	3.6	1793.05	1793.05	
W12.0300	R0200	2.44	292.33	149.92	3.58	1793.05	1793.05	0
W12.0300	R0200	2.382	343.23	311.24	1.77	1786.21	1786.21	
W12.0300	R0200	2.382	276.82	181.26	2.96	1785.83	1786.21	-0.38
W12.0300	R0200	2.362	224.42	180.65	3.14	1783.72	1783.72	
W12.0300	R0200	2.362	218.27	162.65	3.3	1783.68	1783.72	-0.04
W12.0300	R0200	2.311	201.31	318.55	3.11	1776.91	1776.91	
W12.0300	R0200	2.311	201.2	171.55	3.12	1776.9	1776.91	0
W12.0300	R0200	2.292	201.5	201.3	3.68	1773.83	1773.83	
W12.0300	R0200	2.292	202.42	148.23	3.62	1773.84	1773.83	0.01
W12.0300	R0200	2.246	232.02	180.86	3.88	1767.97	1767.97	
W12.0300	R0200	2.246	229.37	130.01	4.12	1767.94	1767.97	-0.04
W12.0300	R0300	2.191	276.75	121.69	2.49	1761.1	1761.1	
W12.0300	R0300	2.191	276.8	121.76	2.49	1761.1	1761.1	0
W12.0300	R0300	2.18	259.89	184.62	2.34	1759.73	1759.73	

Table 5.9.2
HECRAS Output -- Floodway

River	Reach	River Sta	Top Wdth Act	Area	Vel Total	W.S. Elev	Base WS	Prof Delta WS
			(ft)	(sq ft)	(ft/s)	(ft)	(ft)	(ft)
W12.0300	R0300	2.18	259.54	128.36	2.36	1759.72	1759.73	-0.01
W12.0300	R0400	2.132	52.24	50.28	4.63	1753.33	1753.33	
W12.0300	R0400	2.132	52.87	52.61	4.43	1753.37	1753.33	0.04
W12.0300	R0400	2.091	82.38	59.18	3.94	1747.38	1747.38	
W12.0300	R0400	2.091	82.8	61.1	3.81	1747.4	1747.38	0.02
W12.0300	R0400	2.05	141.89	84.1	2.77	1742.65	1742.65	
W12.0300	R0400	2.05	141.86	84.06	2.77	1742.65	1742.65	0
W12.0300	R0400	1.993	135.22	73.34	3.18	1734.41	1734.41	
W12.0300	R0400	1.993	136.61	75.3	3.09	1734.42	1734.41	0.01
W12.0300	R0450	1.917	218.24	122.8	2.47	1725.68	1725.68	
W12.0300	R0450	1.917	218.92	123.41	2.46	1725.68	1725.68	0
W12.0300	R0450	1.891	172.04	93.64	3.24	1721.99	1721.99	
W12.0300	R0450	1.891	173.04	94.8	3.2	1721.99	1721.99	0.01
W12.0300	R0500	1.863	122.76	52.08	2.25	1718.44	1718.44	
W12.0300	R0500	1.863	121.81	50.93	2.3	1718.43	1718.44	-0.01
W12.0300	R0500	1.769	32.26	25.63	4.56	1707.22	1707.22	
W12.0300	R0500	1.769	32.5	26.12	4.48	1707.24	1707.22	0.02
W12.0300	R0500	1.678	63.63	35.33	3.31	1698.04	1698.04	
W12.0300	R0500	1.678	63.96	35.82	3.27	1698.04	1698.04	0.01
W12.0300	R0500	1.608	111.88	35.62	3.29	1690.19	1690.19	
W12.0300	R0500	1.608	111.88	35.62	3.29	1690.19	1690.19	0
W12.0300	R0500	1.544	225.55	314.87	2.36	1682.3	1682.3	
W12.0300	R0500	1.544	225.55	164.08	2.36	1682.3	1682.3	0
W12.0300	R0500	1.493	150.11	93.92	4.12	1676.11	1676.11	
W12.0300	R0500	1.493	93	83.34	4.64	1676.06	1676.11	-0.05
W12.0355	R0100	0.374	110.58	69.79	3.34	1761.11	1761.11	
W12.0355	R0100	0.374	111	76.54	3.04	1761.17	1761.11	0.06
W12.0355	R0100	0.32	75.45	115.66	3.86	1753.59	1753.59	
W12.0355	R0100	0.32	75.43	60.35	3.86	1753.59	1753.59	0
W12.0355	R0100	0.273	56.98	92.67	5.09	1747.51	1747.51	
W12.0355	R0100	0.273	57.42	46.2	5.04	1747.52	1747.51	0.01
W12.0355	R0100	0.221	56.6	96.94	4.53	1741.43	1741.43	
W12.0355	R0100	0.221	56.59	51.31	4.54	1741.43	1741.43	0
W12.0355	R0100	0.164	127.07	94.65	3.11	1734.74	1734.74	
W12.0355	R0100	0.164	127.16	75.37	3.09	1734.74	1734.74	0
W12.0355	R0100	0.116	210	73.08	3.19	1728.45	1728.45	
W12.0355	R0100	0.116	210.24	74.03	3.15	1728.46	1728.45	0
W12.0355	R0100	0.084	204.18	108.2	2.15	1725.06	1725.06	
W12.0355	R0100	0.084	201.31	103.99	2.24	1725.04	1725.06	-0.02
W12.0355	R0100	0.039	85.13	65.69	3.55	1722.17	1722.17	
W12.0355	R0100	0.039	85.85	67.73	3.44	1722.19	1722.17	0.02
W12.0365	R0100	0.212	109.8	30.2	2.32	1753.69	1753.69	
W12.0365	R0100	0.212	110.71	30.91	2.26	1753.7	1753.69	0.01
W12.0365	R0100	0.164	38.11	17.13	4.09	1747.44	1747.44	
W12.0365	R0100	0.164	38.2	17.17	4.08	1747.44	1747.44	0
W12.0365	R0100	0.129	50.72	22.03	3.18	1742.33	1742.33	
W12.0365	R0100	0.129	50.96	22.35	3.13	1742.33	1742.33	0.01
W12.0365	R0100	0.068	50.83	22.5	3.11	1734.59	1734.59	

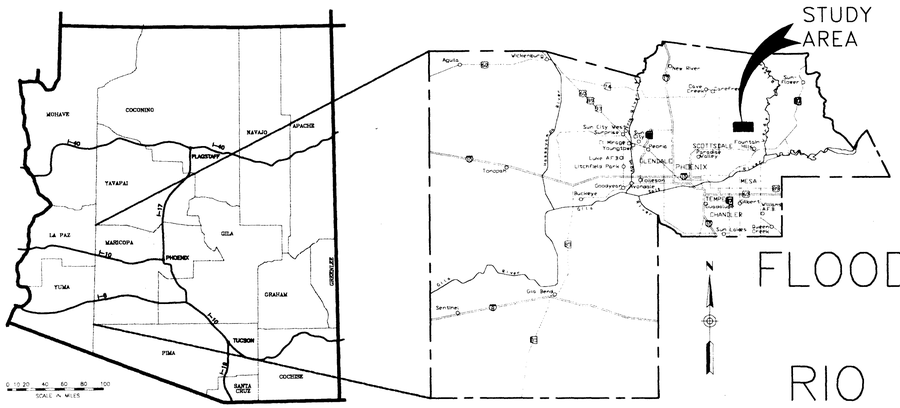
Table 5.9.2
HECRAS Output -- Floodway

River	Reach	River Sta	Top Wdth Act	Area	Vel Total	W.S. Elev	Base WS	Prof Delta WS
			(ft)	(sq ft)	(ft/s)	(ft)	(ft)	(ft)
W12.0365	R0100	0.068	51.16	22.77	3.07	1734.6	1734.59	0.01
W12.0375	R0100	0.704	99.12	60.31	3.08	1718.36	1718.36	
W12.0375	R0100	0.704	99.6	61.39	3.03	1718.37	1718.36	0.01
W12.0375	R0100	0.628	55.89	49.09	4.16	1709.39	1709.39	
W12.0375	R0100	0.628	56.28	51.01	4	1709.43	1709.39	0.03
W12.0375	R0100	0.535	64.54	47.63	4.28	1698.48	1698.48	
W12.0375	R0100	0.535	67.27	50.06	4.08	1698.51	1698.48	0.04
W12.0375	R0100	0.462	38.62	38	5.37	1690.19	1690.19	
W12.0375	R0100	0.462	39	41.23	4.95	1690.27	1690.19	0.08
W12.0375	R0100	0.388	38.7	43.03	4.74	1681.75	1681.75	
W12.0375	R0100	0.388	39.32	45.31	4.5	1681.81	1681.75	0.06
W12.0375	R0100	0.31	51.21	46.74	4.36	1673.42	1673.42	
W12.0375	R0100	0.31	52	49.97	4.08	1673.48	1673.42	0.06
W12.0400	R0100	0.201	155.98	84.03	3.63	1832.44	1832.44	
W12.0400	R0100	0.201	156	85.25	3.58	1832.44	1832.44	0.01
W12.0400	R0100	0.155	166.47	108.2	2.82	1825.7	1825.7	
W12.0400	R0100	0.155	167	112.05	2.72	1825.72	1825.7	0.02
W12.0400	R0100	0.103	198.27	100.95	3.02	1818.24	1818.24	
W12.0400	R0100	0.103	198.8	103.23	2.95	1818.26	1818.24	0.01
W12.0400	R0100	0.061	234.69	96.59	3	1812.3	1812.3	
W12.0400	R0100	0.061	231.82	91.67	3.16	1812.28	1812.3	-0.02
W12.0500	R0100	1.098	51.62	26.21	4.08	1709.82	1709.82	
W12.0500	R0100	1.098	51.96	26.55	4.03	1709.82	1709.82	0.01
W12.0500	R0100	1.063	80.89	33.76	3.17	1705.32	1705.32	
W12.0500	R0100	1.063	80.97	33.87	3.16	1705.32	1705.32	0
W12.0500	R0100	0.997	41.55	27.66	3.87	1694.63	1694.63	
W12.0500	R0100	0.997	42	29.08	3.68	1694.67	1694.63	0.03
W12.0500	R0100	0.972	78.85	38.04	2.81	1692.45	1692.45	
W12.0500	R0100	0.972	78.28	37.34	2.87	1692.45	1692.45	-0.01
W12.0500	R0100	0.934	121.6	174.85	2.46	1688.45	1688.45	
W12.0500	R0100	0.934	121.88	44.13	2.42	1688.46	1688.45	0.01
W12.0500	R0100	0.893	146.9	58.98	1.81	1683.56	1683.56	
W12.0500	R0100	0.893	145.36	58.09	1.84	1683.55	1683.56	-0.01
W12.0500	R0100	0.858	144.75	51.03	2.1	1679.69	1679.69	
W12.0500	R0100	0.858	144.75	51.03	2.1	1679.69	1679.69	0
W12.0500	R0100	0.838	69.19	38.54	2.78	1676.71	1676.71	
W12.0500	R0100	0.838	69.19	38.54	2.78	1676.71	1676.71	0
W12.0600	R0100	0.12	100.3	43.28	2.82	1688.53	1688.53	
W12.0600	R0100	0.12	100.67	44.79	2.72	1688.54	1688.53	0.02
W12.0600	R0100	0.082	48.16	33.67	3.62	1683.7	1683.7	
W12.0600	R0100	0.082	46.99	32.06	3.81	1683.66	1683.7	-0.03
W12.0600	R0100	0.05	81.77	33.82	3.61	1680.14	1680.14	
W12.0600	R0100	0.05	83	36.4	3.35	1680.17	1680.14	0.03
W12.0600	R0100	0.028	51.12	33.15	3.68	1676.83	1676.83	
W12.0600	R0100	0.028	51.57	34.64	3.52	1676.86	1676.83	0.03

STUDY WORK MAPS

Rio Verde South Extension FDS
FCD 97-13
May, 1999

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

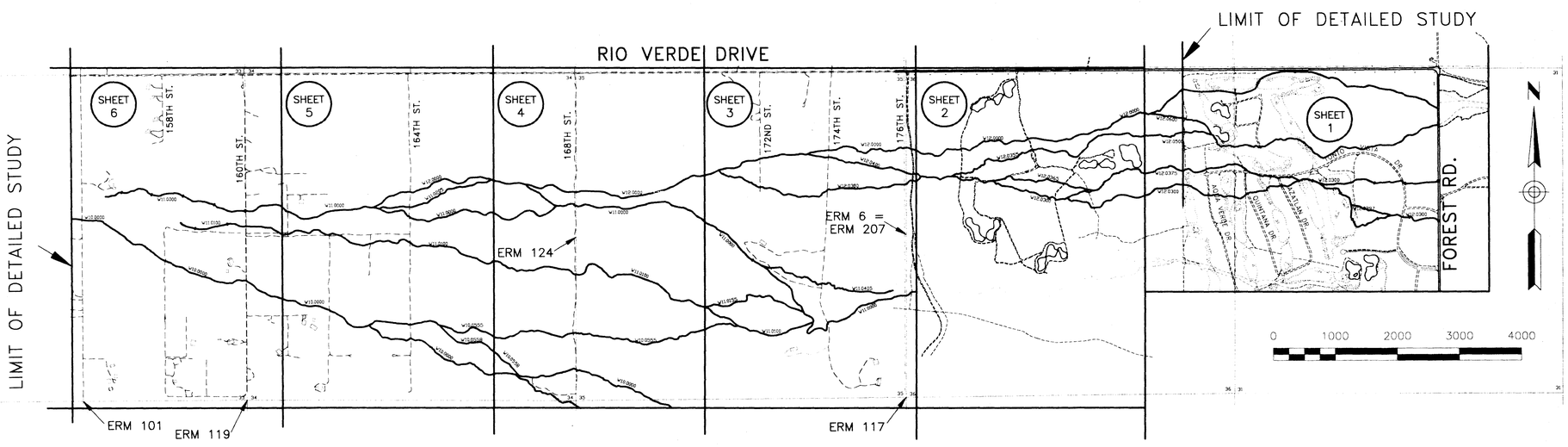


ARIZONA

MARICOPA COUNTY
Not to Scale

FLOODPLAIN DELINEATION STUDY OF RIO VERDE SOUTH EXTENSION

FCD 97-13



LEGEND

HYDRAULIC BASE LINE

SHEET 12 — SHEET LABEL

NOTES

1. ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929
2. ALL HORIZONTAL COORDINATES USE ARIZONA STATE PLANE COORDINATES BASED ON THE 1983 NORTH AMERICAN DATUM
3. ALL FLOW RATES ARE IN CUBIC FEET PER SECOND.
4. ALSO SEE FCD CONTRACT NO. 93-07, RIO VERDE SOUTH FLOODPLAIN DELINEATION, PREPARED IN SEPTEMBER 1996.

STATEMENTS OF PROFESSIONAL REGISTRANTS

THE GROUND CONTROL SURVEY FOR SHEETS 3 THROUGH 6 WAS PREPARED UNDER MY DIRECT SUPERVISION.

THIS IS TO CERTIFY THAT THIS DOCUMENT WAS PREPARED UNDER MY SUPERVISION UTILIZING FIELD CONTROL PROVIDED BY LOUIS De PRISCO, AND THAT THIS DOCUMENT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS DOCUMENT IS AN INSTRUMENT OF PROFESSIONAL SERVICES ONLY. AERIAL MAPPING COMPANY, INC., MAKES NO WARRANTIES TO THIRD PARTIES.

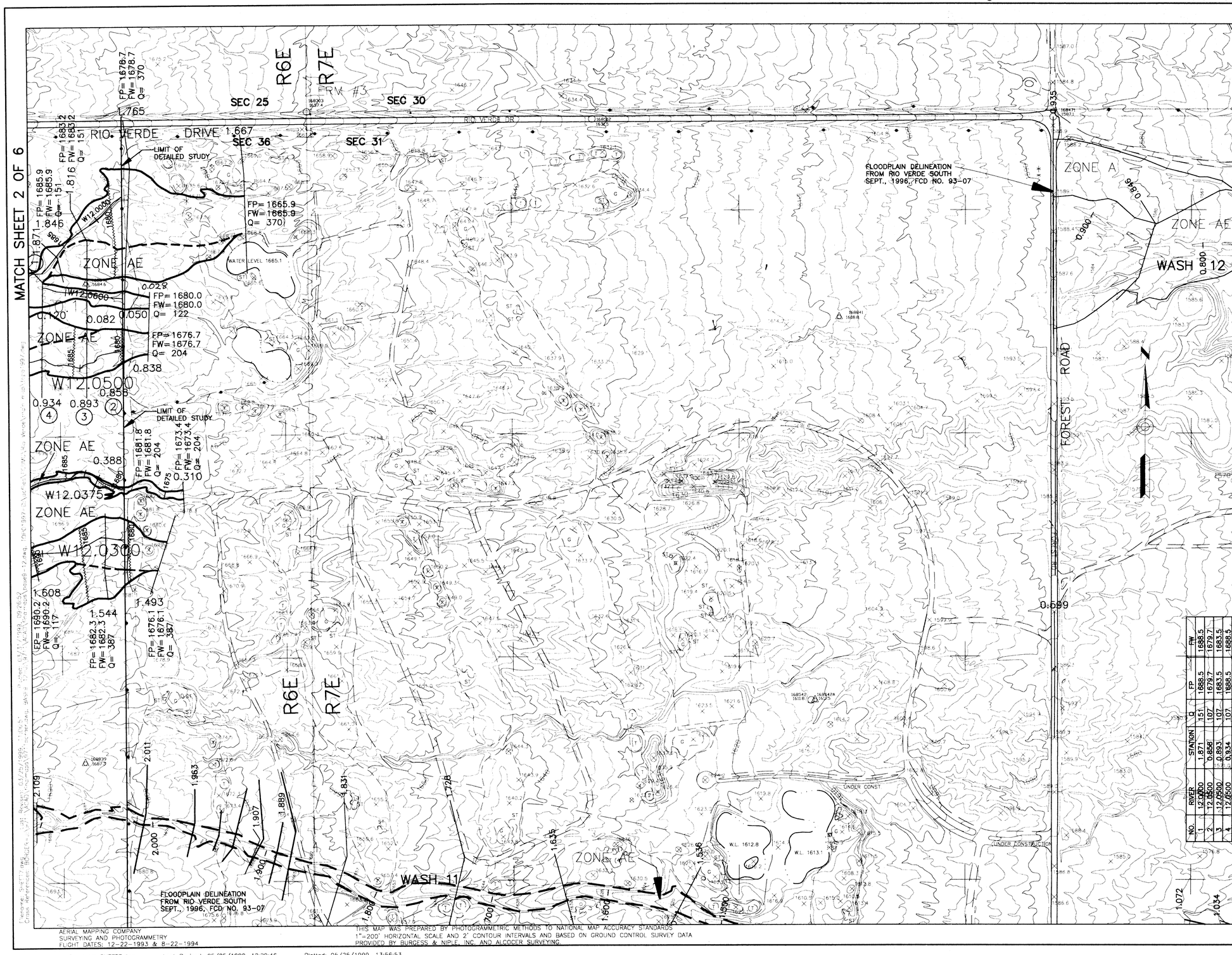
THE FLOODPLAIN DELINEATION WAS PREPARED UNDER MY DIRECT SUPERVISION, USING HYDROLOGY FROM FCD 93-07.

29325 BRIAN R. ISERMAN

FLOWN BY:
AERIAL MAPPING COMPANY, INC.
FLIGHT DATES 12-22-93 & 10-18-97

JE FULLER HYDROLOGY & GEOMORPHOLOGY, INC.
in association with
DIBBLE & ASSOCIATES CONSULTING ENGINEERS

	BY	DATE	
DESIGN	BRI	5-99	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	JEF	5-99	RECOMMENDED BY: DATE
PLANS	AFS	5-99	APPROVED BY: DATE
PLANS CHK.	BRI	5-99	CHIEF ENGINEER AND GENERAL MANAGER
SUBMITTED BY: DATE			SHEET COVER SHEET



NO.	RIVER	STATION	Q	FP	FW
1	12.0600	1.871	151	1688.5	1688.5
2	12.0500	0.856	107	1679.7	1679.7
3	12.0500	0.893	107	1683.5	1683.5
4	12.0500	0.934	107	1688.5	1688.5

AERIAL MAPPING COMPANY
SURVEYING AND PHOTOGRAMMETRY
FLIGHT DATES: 12-22-1993 & 8-22-1994

THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS
1"=200' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS AND BASED ON GROUND CONTROL SURVEY DATA
PROVIDED BY BURGESS & NIPLE, INC. AND ALCOCER SURVEYING.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FLOODPLAIN DELINEATION STUDY OF RIO VERDE SOUTH EXTENSION

FCD 97-13

MAY 1999

LEGEND

100-YR FLOODPLAIN BOUNDARY
FLOODWAY BOUNDARY
HYDRAULIC BASE LINE & RIVER MILE — 2.0
CROSS SECTION — 5.519 — FP=100 Yr WSEL, FW=Floodway WSEL, Q=100 Yr Flow
ELEVATION REFERENCE MARK — OR OR ERM #2
BASE FLOOD ELEVATIONS — 1221
ZONE DESIGNATIONS — ZONE AE
ROADS
SECTION LINE

ELEVATION REFERENCE MARKS

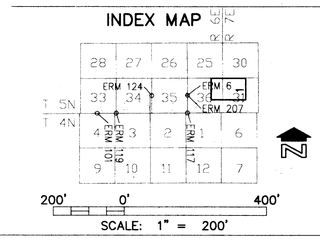
NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929

I.D. NUM.	ELEV. (FT)	DESCRIPTION/LOCATION
ERM 207	1793.91	GLO BRASS CAP, E. 1/4 COR. OF SEC. 35, T5N, R6E
ERM 6	1793.98	BLM BRASS CAP, W. 1/4 COR. OF SEC. 36, T5N, R6E (THIS INFORMATION TAKEN FROM F.C.D. CONTRACT NO. 93-07)

NOTES

1. The Floodplain & Floodway on sheets 1 and 2 are from FCD93-07, as noted.
2. Where Floodplain & Floodway are coincident only Floodplain is shown.
3. The topography on sheets 1 & 2 are from FCD 93-07.
4. Vertical Datum Equation: NGVD1929 + 1.903 Ft. = NAVD1988.

INDEX MAP



JE FULLER HYDROLOGY & GEOMORPHOLOGY, INC.
in association with
DIBBLE & ASSOCIATES CONSULTING ENGINEERS

	BY	DATE
DESIGN	BRI	5-99
DESIGN CHK.	JEF	5-99
PLANS	AFS	5-99
PLANS CHK.	BRI	5-99

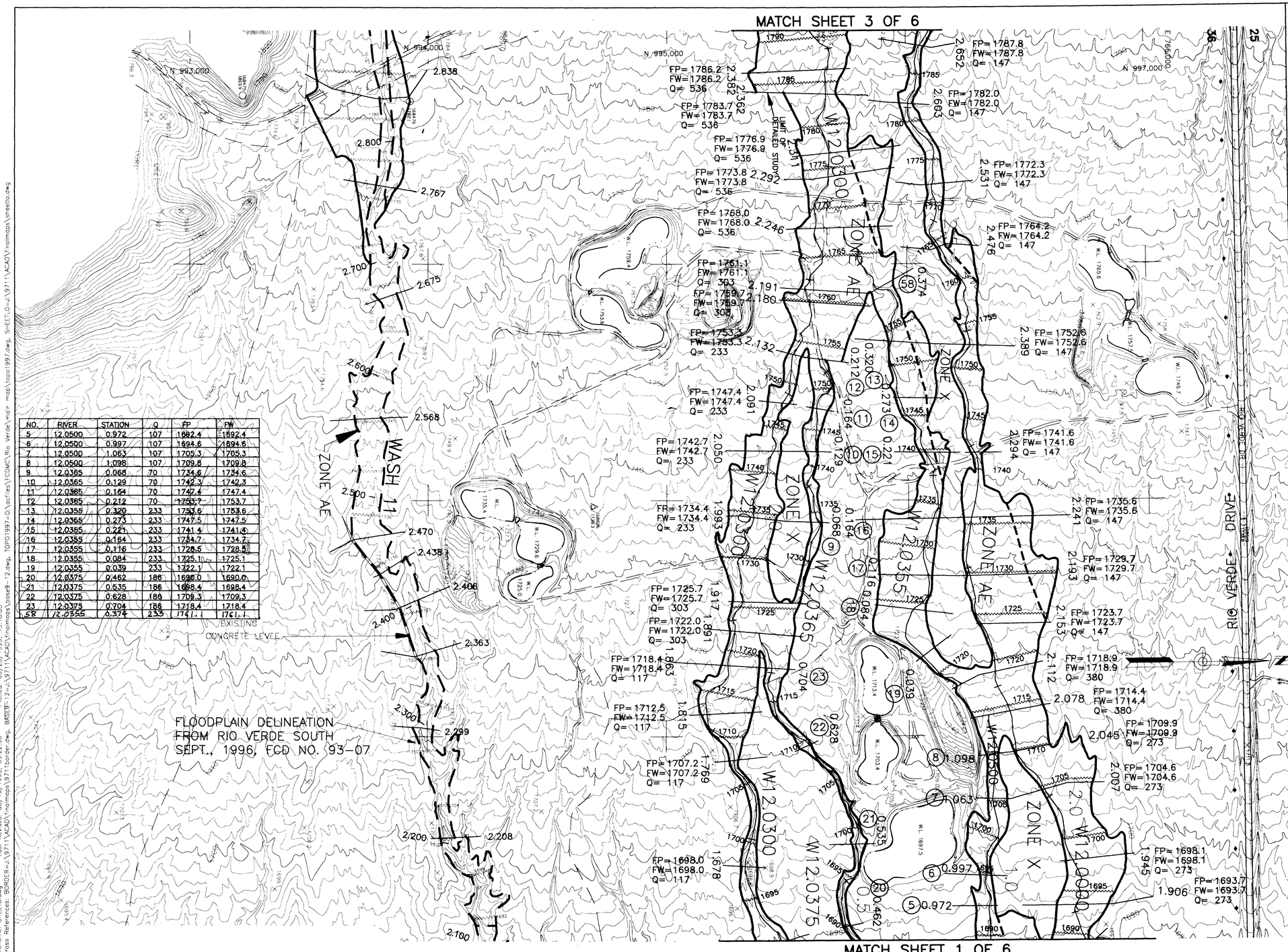
SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE
APPROVED BY: DATE
CHIEF ENGINEER AND GENERAL MANAGER

SHEET 1 OF 6

Filename: SHEET7.dwg Last Revised: 05/25/1999, 12:29:46 Plotted: 05/25/1999, 13:56:53
Cross References: BORDER=J:\9711\ACAD\finalmaps\9711border.dwg, BASE9-12=J:\9711\ACAD\finalmaps\base9-12.dwg, TOPO1997=J:\9711\ACAD\finalmaps\topo1997.dwg



NO.	RIVER	STATION	Q	FP	FW
5	12.0500	0.972	107	1692.4	1692.4
6	12.0500	0.997	107	1694.6	1694.6
7	12.0500	1.063	107	1705.3	1705.3
8	12.0500	1.098	107	1709.8	1709.8
9	12.0365	0.068	70	1734.6	1734.6
10	12.0365	0.129	70	1742.3	1742.3
11	12.0365	0.164	70	1747.4	1747.4
12	12.0365	0.212	70	1753.7	1753.7
13	12.0355	0.320	233	1753.6	1753.6
14	12.0355	0.273	233	1747.5	1747.5
15	12.0355	0.221	233	1741.4	1741.4
16	12.0355	0.164	233	1734.7	1734.7
17	12.0355	0.116	233	1728.5	1728.5
18	12.0355	0.084	233	1725.1	1725.1
19	12.0355	0.039	233	1722.1	1722.1
20	12.0375	0.462	186	1690.0	1690.0
21	12.0375	0.535	186	1698.4	1698.4
22	12.0375	0.628	186	1709.3	1709.3
23	12.0375	0.704	186	1718.4	1718.4
58	12.0355	0.374	233	1761.1	1761.1

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FLOODPLAIN DELINEATION STUDY OF RIO VERDE SOUTH EXTENSION

FCD 97-13

MAY 1999

LEGEND

100-YR FLOODPLAIN BOUNDARY
FLOODWAY BOUNDARY
HYDRAULIC BASE LINE & RIVER MILE — 2.0
CROSS SECTION — 5.19 — FP=100 Yr WSEL, FW=Floodway WSEL, Q=100 Yr Flow
ELEVATION REFERENCE MARK — ○ OR △ OR ⊠ ERM #2
BASE FLOOD ELEVATIONS — 1221
ZONE DESIGNATIONS — ZONE AE
ROADS
SECTION LINE

ELEVATION REFERENCE MARKS

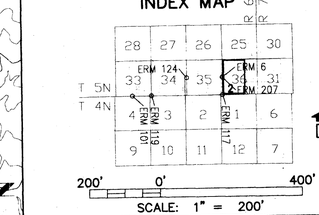
NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929

I.D. NUM.	ELEV. (FT)	DESCRIPTION/LOCATION
ERM 6	1793.98	BLM BRASS CAP, W. 1/4 COR. OF SEC. 36, T5N, R6E (THIS INFORMATION TAKEN FROM F.C.D. CONTRACT NO. 93-07)

NOTES

1. The Floodplain & Floodway on sheets 1 and 2 are from FCD93-07, as noted.
2. Where Floodplain & Floodway are coincident only Floodplain is shown.
3. The topugraphy on sheets 1 & 2 are from FCD 93-07.
4. Vertical Datum Equation: NGVD1929 + 1.903 Ft. = NAVD1988.

INDEX MAP



JE FULLER HYDROLOGY & GEOMORPHOLOGY, INC.

in association with

DIBBLE & ASSOCIATES CONSULTING ENGINEERS

	BY	DATE
DESIGN	BRI	5-99
DESIGN CHK.	JEF	5-99
PLANS	AFS	5-99
PLANS CHK.	BRI	5-99

SUBMITTED BY: DATE

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

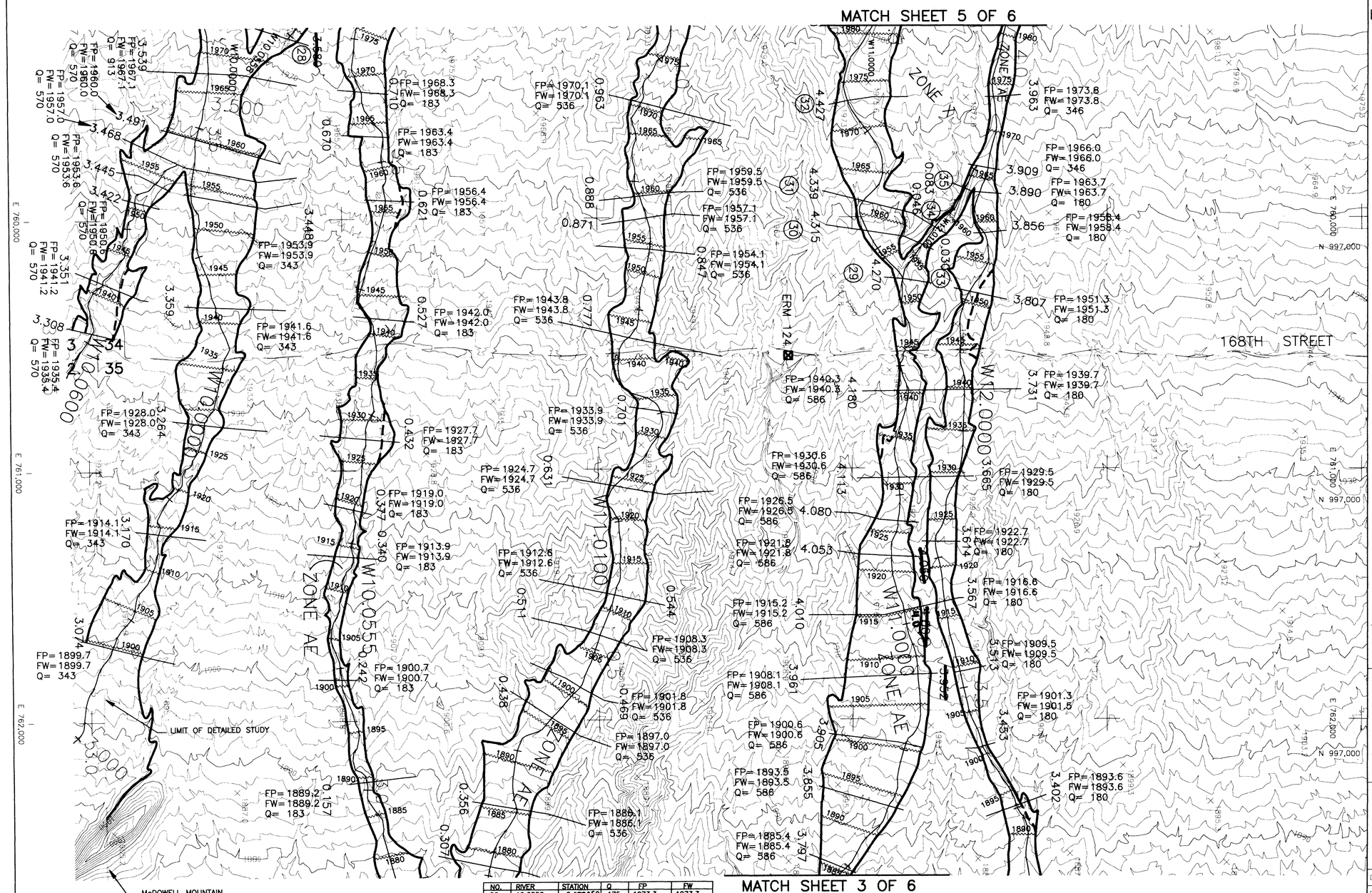
CHIEF ENGINEER AND GENERAL MANAGER

SHEET 2 OF 6

AERIAL MAPPING COMPANY
SURVEYING AND PHOTOGRAMMETRY
FLIGHT DATE: 12-22-1993

THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS 1"=200' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS AND BASED ON GROUND CONTROL SURVEY DATA PROVIDED BY BURGESS & NIPLE, INC. AND ALCOCER SURVEYING.

Filename: SHEET8.dwg Last Revised: 03/16/1999, 09:22:35 Plotted: 03/23/1999, 13:18:05
Cross References: BORDER=J:\9711\ACAD\finalmaps\9711border.dwg, BASE=T-12=J:\9711\ACAD\finalmaps\base9-12.dwg, TOPO1997=D:\cadfiles\FCDMC\Rio Verde\main map\topo1997.dwg, SHEET1.0=J:\9711\ACAD\finalmaps\sheet10.dwg



NO.	RIVER	STATION	Q	FP	FW
28	10.0558	0.4[illegible]050	175	1973.3	1973.3
29	11.0000	4.2[illegible]70	586	1952.5	1952.5
30	11.0000	4.31[illegible]5	506	1957.9	1957.9
31	11.0000	4.33[illegible]1	506	1961.5	1961.5
32	11.0000	4.42[illegible]7	506	1973.3	1973.3
33	12.0100	0.030	179	1955.9	1955.9
34	12.0100	0.046	179	1958.1	1958.1
35	12.0100	0.083	179	1963.4	1963.4

AERIAL MAPPING COMPANY
SURVEYING AND PHOTOGRAMMETRY
FLIGHT DATE: 10-18-97

THIS MAP WAS PREPARED BY PHOTOGAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS
1"=200' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS AND BASED ON GROUND CONTROL
SURVEY DATA PROVIDED BY URBAN ENGINEERING.

Filename: SHEET10.dwg Last Revised: 05/25/1999, 13:18:30 Plotted: 05/25/1999, 13:52:42
Cross References: BORDER=J:\9711\ACAD\finalmaps\9711border.dwg, BASE9-12=J:\9711\ACAD\finalmaps\base9-12.dwg, TOPO1997=J:\9711\ACAD\finalmaps\topo1997.dwg

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FLOODPLAIN DELINEATION STUDY OF RIO VERDE SOUTH EXTENSION

FCD 97-13

MAY 1999

LEGEND

100-YR FLOODPLAIN BOUNDARY
FLOODWAY BOUNDARY
HYDRAULIC BASE LINE & RIVER MILE — 2.0
CROSS SECTION — 5.519 — FP=100 Yr WSEL, FW=Floodway WSEL, Q=100 Yr Flow
ELEVATION REFERENCE MARK — ○ OR △ OR ⊠ ERM #2
BASE FLOOD ELEVATIONS — 1221
ZONE DESIGNATIONS — ZONE AE
ROADS
SECTION LINE

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929

I.D. NUM.	ELEV. (FT)	DESCRIPTION/LOCATION
ERM 124	1941.64	GLO BRASS CAP, W. 1/4 COR. OF SEC. 35, T5N, R6E

NOTES

1. The Floodplain & Floodway on sheets 1 and 2 are from FCD93-07, as noted.
2. Where Floodplain & Floodway are coincident only Floodplain is shown.
3. The topography on sheets 1 & 2 are from FCD 93-07.
4. Vertical Datum Equation: NGVD1929 + 1.903 Ft. = NAVD1988.

INDEX MAP

5-19-99

Registered Professional Engineer (Civil) CERTIFICATE NO. 29825 BRIAN R. ISERMAN ARIZONA U.S.A.

JE FULLER HYDROLOGY & GEOMORPHOLOGY, INC.
in association with
DIBBLE & ASSOCIATES CONSULTING ENGINEERS

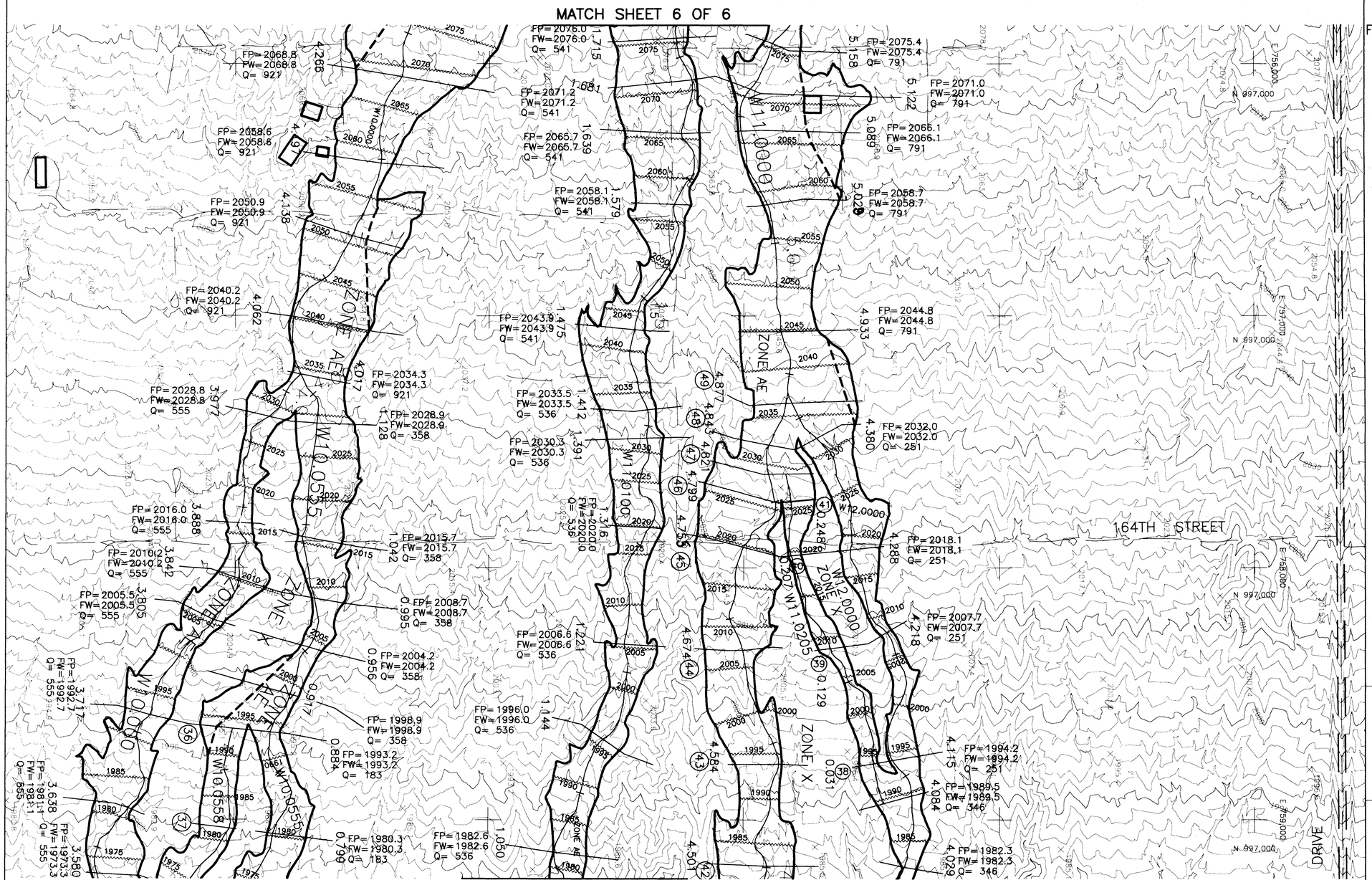
	BY	DATE
DESIGN	BRI	5-99
DESIGN CHK.	JEF	5-99
PLANS	AFS	5-99
PLANS CHK.	BRI	5-99

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE
APPROVED BY: DATE
CHIEF ENGINEER AND GENERAL MANAGER

SHEET 4 OF 6



NO.	RIVER	STATION	Q	FP	FW
36	10.0558	0.186	175	1993.3	1993.3
37	10.0558	0.109	175	1981.4	1981.4
38	11.0205	0.031	80	1994.1	1994.1
39	11.0205	0.129	80	2008.7	2008.7
40	11.0205	0.207	80	2019.5	2019.5
41	11.0205	0.248	80	2025.7	2025.7

NO.	RIVER	STATION	Q	FP	FW
42	11.0000	4.501	506	1982.2	1982.2
43	11.0000	4.584	506	1993.8	1993.8
44	11.0000	4.674	506	2006.9	2006.9
45	11.0000	4.753	506	2019.8	2019.8
46	11.0000	4.799	506	2025.7	2025.7
47	11.0000	4.821	586	2028.9	2028.9
48	11.0000	4.843	586	2032.0	2032.0
49	11.0000	4.877	791	2036.2	2036.2

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FLOODPLAIN DELINEATION STUDY OF RIO VERDE SOUTH EXTENSION

FCD 97-13

MAY 1999

LEGEND

100-YR FLOODPLAIN BOUNDARY
FLOODWAY BOUNDARY
HYDRAULIC BASE LINE & RIVER MILE — 2.0
CROSS SECTION — 5.519 — FP=100 Yr WSEL, FW=Floodway WSEL, Q=100 Yr Flow
ELEVATION REFERENCE MARK — ○ OR △ OR ⊠ — ERM #2
BASE FLOOD ELEVATIONS — 1221
ZONE DESIGNATIONS — ZONE AE
ROADS
SECTION LINE

ELEVATION REFERENCE MARKS

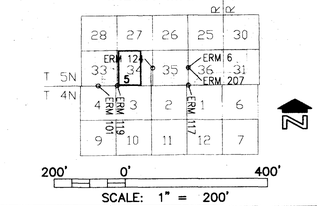
NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929

I.D. NUM.	ELEV. (FT)	DESCRIPTION/LOCATION
ERM 119	2086.42	GLO BRASS CAP, S.W. COR. OF SEC. 34, T5N, R6E

NOTES

1. The Floodplain & Floodway on sheets 1 and 2 are from FCD93-07, as noted.
2. Where Floodplain & Floodway are coincident only Floodplain is shown.
3. The topography on sheets 1 & 2 are from FCD 93-07.
4. Vertical Datum Equction: NGVD1929 + 1.903 Ft. = NAVD1988.

INDEX MAP



JE FULLER HYDROLOGY & GEOMORPHOLOGY, INC.

in association with

DIBBLE & ASSOCIATES CONSULTING ENGINEERS

	BY	DATE
DESIGN	BRI	5-99
DESIGN CHK.	JEF	5-99
PLANS	AFS	5-99
PLANS CHK.	BRI	5-99

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

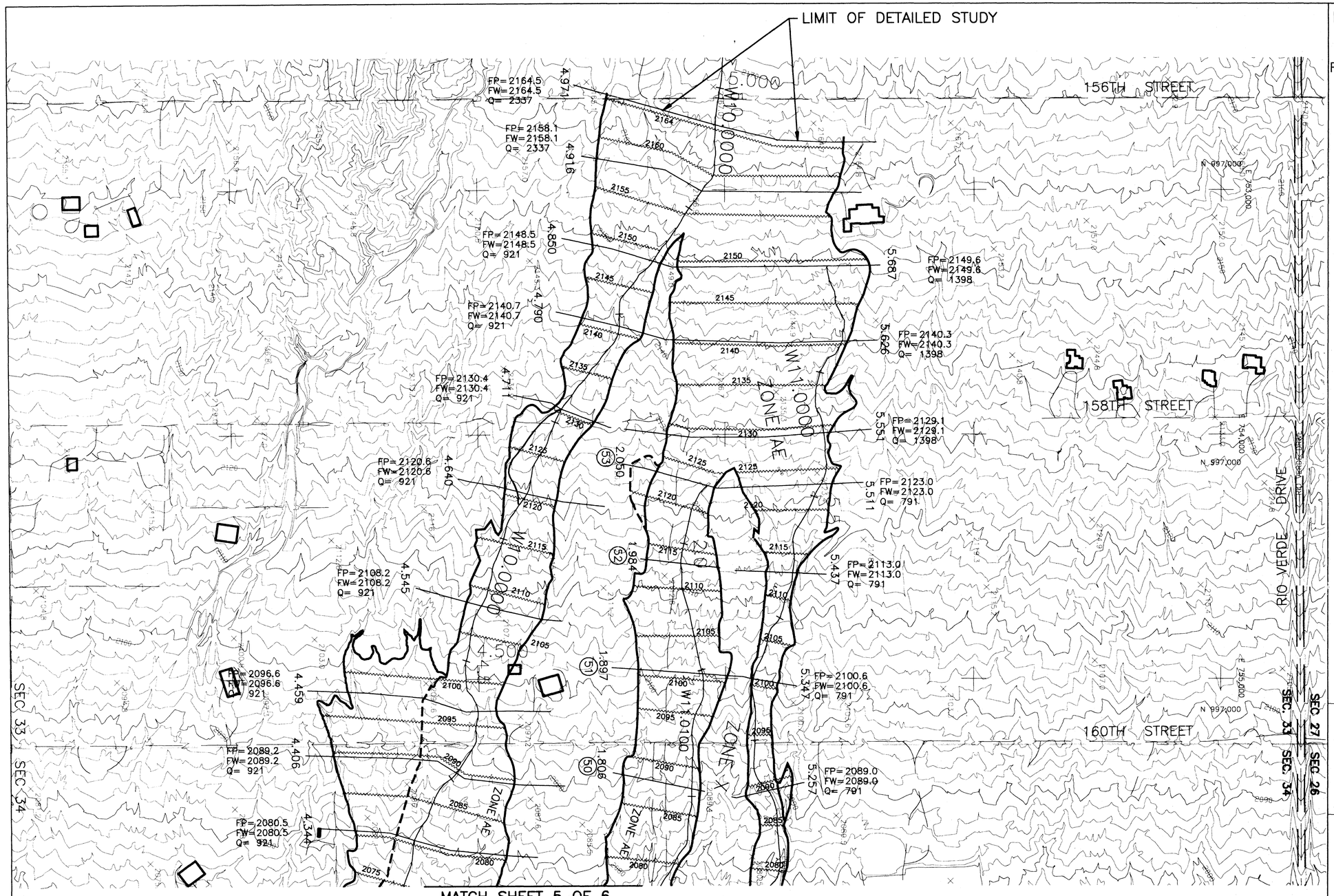
CHIEF ENGINEER AND GENERAL MANAGER

SHEET 5 OF 6

AERIAL MAPPING COMPANY
SURVEYING AND PHOTOGRAMMETRY
FLIGHT DATE: 10-18-97

THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS 1"=200' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS AND BASED ON GROUND CONTROL SURVEY DATA PROVIDED BY URBAN ENGINEERING.

Filename: SHEET11.dwg Last Revised: 05/25/1990, 13:28:24 Plotted: 05/25/1999, 13:51:41
Cross References: BORDER=J:\9711\ACAD\finalmaps\9711border.*wg, BASE9-12=J:\9711\ACAD\finalmaps\base9-12.dwg, TOPO1997=J:\9711\ACAD\finalmaps\topo1997.dwg



NO.	RIVER	STATION	Q	FP	FW
50	11.0100	1.806	541	2089.0	2089.0
51	11.0100	1.897	600	2101.3	2101.3
52	11.0100	1.984	600	2114.4	2114.4
53	11.0100	2.050	600	2124.1	2124.1

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FLOODPLAIN DELINEATION STUDY OF RIO VERDE SOUTH EXTENSION

FCD 97-13

MAY 1999

LEGEND

100-YR FLOODPLAIN BOUNDARY
FLOODWAY BOUNDARY
HYDRAULIC BASE LINE & RIVER MILE — 2.0
CROSS SECTION — 5.519 — FP=100 Yr WSEL, FW=Floodway WSEL, Q=100 Yr Flow
ELEVATION REFERENCE MARK — ○ OR △ OR ☒ ERM #2
BASE FLOOD ELEVATIONS — 1221
ZONE DESIGNATIONS — ZONE AE
ROADS
SECTION LINE

ELEVATION REFERENCE MARKS

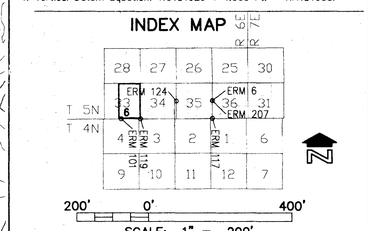
NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929

I.D. NUM.	ELEV. (FT)	DESCRIPTION/LOCATION
ERM 101	2161.28	GLO BRASS CAP, S. 1/4 COR. OF SEC. 33, T5N, R6E
ERM 119	2086.42	GLO BRASS CAP, S.W. COR. OF SEC. 34, T5N, R6E

NOTES

1. The Floodplain & Floodway on sheets 1 and 2 are from FCD93-07, as noted.
2. Where Floodplain & Floodway are coincident only Floodplain is shown.
3. The topography on sheets 1 & 2 are from FCD 93-07.
4. Vertical Datum Equation: NGVD1929 + 1.903 Ft. = NAVD1988.

INDEX MAP



Registered Professional Engineer (Civil) CERTIFICATE NO. 23325 BRIAN R. ISERMAN Date Signed 5-4-99

JE FULLER HYDROLOGY & GEOMORPHOLOGY, INC.

in association with

DIBBLE & ASSOCIATES CONSULTING ENGINEERS

	BY	DATE
DESIGN	BRI	5-99
DESIGN CHK.	JEF	5-99
PLANS	AFS	5-99
PLANS CHK.	BRI	5-99

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 6 OF 6

AERIAL MAPPING COMPANY
SURVEYING AND PHOTOGRAMMETRY
FLIGHT DATE: 10-18-97

THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS 1"=200' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS AND BASED ON GROUND CONTROL SURVEY DATA PROVIDED BY URBAN ENGINEERING.

Essential Reference Files: BORDER=J:\9711\ACAD\findmaps\9711border.dwg, BASE9=J:\9711\ACAD\findmaps\base9-12.dwg, TOPO1997=J:\9711\ACAD\findmaps\topo1997.dwg