North Peoria Area Drainage Master Plan

Attachment 2
Hydrology and Hydraulics

Book 3 of 3

January 2002

Prepared for the
Flood Control District
of Maricopa County

and the
City of Peoria

Project No. 82000146
Contract FCD 99-45

NORTH PEORIA AREA DRAINAGE MASTER PLAN

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Attachment 2
Hydrologic and Hydraulic Technical Data Notebook

Book 3 of 3

PREPARED FOR:

FLOOD CONTROL DISTRICT
of
Maricopa County
and
City of Peoria

PREPARED BY:

STANTEC CONSULTING INC.
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January 2002

STANTEC CONSULTING Inc.
Project No. 82000146

Contract FCD 99-45

APPENDIX J: MANNING'S N-VALUE CALCULATIONS AND PHOTOGRAPHS

Manning's n-value Calculation Sheets-Unnamed Wash 1

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

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 1
Reach: UN1-1 By: srg Date: 12-Jun-00
Photo Location WPT34

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			0.026
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.039	0.051
Round values to the nearest 0.005:					**0.040**	**0.050**
Photograph No.:					2-4	5-7

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

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 1
Reach: UN1-1 **(Appreciable Meander)** By: srg Date: 12-Jun-00
Photo Location WPT34

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			0.026
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15		1.150	1.150
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.045	0.059
Round values to the nearest 0.005:					**0.045**	**0.060**
Photograph No.:					2-4	5-7

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

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 1
Reach: UN1-1**(Severe Meander)** By: srg Date: 12-Jun-00
Photo Location WPT34

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			0.026
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30		1.300	1.300
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.051	0.066
Round values to the nearest 0.005:					**0.050**	**0.065**
Photograph No.:					2-4	5-7

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

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 1
Reach: UN1-2 By: srg Date: 12-Jun-00
Photo Location WPT35

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050		0.035	
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.005	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004			
	Minor		0.005 - 0.015		0.005	
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.053	0.000
Round values to the nearest 0.005:					**0.055**	
Photograph No.:					8-10	

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

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 1
Reach: UN1-2 By: srg Date: 12-Jun-00
Photo Location WPT36

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050		0.035	
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.005	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004			
	Minor		0.005 - 0.015		0.005	
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.053	0.000
Round values to the nearest 0.005:					**0.055**	
Photograph No.:					13-15	

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

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 1
Reach: UN1-2 **(Appreciable Meander)** By: srg Date: 12-Jun-00
Photo Location WPT36

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050		0.035	
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.005	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004			
	Minor		0.005 - 0.015		0.005	
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15		1.150	
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.061	0.000
Round values to the nearest 0.005:					**0.060**	
Photograph No.:					13-15	

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

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 1
Reach: UN1-2 By: srg Date: 12-Jun-00
Photo Location WPT37

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050		0.035	
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.005	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004			
	Minor		0.005 - 0.015		0.005	
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010			
	Medium		0.010 - 0.025		0.008	
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.053	0.000
Round values to the nearest 0.005:					**0.055**	
Photograph No.:					16-18	

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

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 1
Reach: UN1-2 **(Appreciable Meander)** By: srg Date: 12-Jun-00
Photo Location WPT37

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050		0.035	
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.005	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004			
	Minor		0.005 - 0.015		0.005	
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010			
	Medium		0.010 - 0.025		0.008	
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15		1.150	
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.061	0.000
Round values to the nearest 0.005:					**0.060**	
Photograph No.:					16-18	

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

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 1
Reach: UN1-2 **(Severe Meander)** By: srg Date: 12-Jun-00
Photo Location WPT37

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050		0.035	
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.005	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004			
	Minor		0.005 - 0.015		0.005	
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010			
	Medium		0.010 - 0.025		0.008	
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30		1.300	
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.069	0.000
Round values to the nearest 0.005:					**0.070**	
Photograph No.:					16-18	

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

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 1
Reach: UN1-2 By: srg Date: 12-Jun-00
Photo Location WPT38

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.035	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.005	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004			
	Minor		0.005 - 0.015		0.005	
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.053	0.000
Round values to the nearest 0.005:					**0.055**	
Photograph No.:					21-23	

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

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 1
Reach: UN1-2 **(Appreciable Meander)** By: srg Date: 12-Jun-00
Photo Location WPT38

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.035	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.005	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004			
	Minor		0.005 - 0.015		0.009	
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15		1.150	
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.066	0.000
Round values to the nearest 0.005:					**0.065**	
Photograph No.:					21-23	

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

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 1
Reach: UN1-3 By: srg Date: 12-Jun-00
Photo Location WPT40

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032	0.025		
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			0.035
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000		0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025	0.025		0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00	1.000	1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.050	0.039	0.060
Round values to the nearest 0.005:				**0.050**	**0.040**	**0.060**
Photograph No.:				31-33	28-30	34-36

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

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 1
Reach: UN1-3 **(Appreciable Meander)** By: srg Date: 12-Jun-00
Photo Location WPT40

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032	0.025		
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			0.035
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000		0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025	0.025		0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15	1.150	1.150	1.150
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.058	0.045	0.069
Round values to the nearest 0.005:				**0.060**	**0.045**	**0.070**
Photograph No.:				31-33	28-30	34-36

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

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 1
Reach: UN1-3 By: srg Date: 12-Jun-00
Photo Location WPT41

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026	0.025		
	Coarse Sand		0.026 - 0.035			0.035
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000		0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000	0.000	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025	0.025		0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00	1.000	1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.050	0.039	0.060
Round values to the nearest 0.005:				**0.050**	**0.040**	**0.060**
Photograph No.:				40-42	37-39	43-45

Manning's n-value Calculation Sheets-Unnamed Wash 2

Table J-2
Determination of Manning's n-value by the FCDMC method

Project: North Peoria WMP
Steam: Unnamed Wash 2
Reach: UN2-1 By: srg Date: June 13, 2000
Photo Location WPT22

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.039	0.000
Round values to the nearest 0.005:					**0.040**	
Photograph No.:					1-6	

Table J-2
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 2
Reach: UN2-1 **(Appreciable Meander)** By: srg Date: June 13, 2000
Photo Location WPT22

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15		1.150	
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.045	0.000
Round values to the nearest 0.005:					**0.045**	
Photograph No.:					1-6	

Table J-2
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 2
Reach: UN2-1 By: srg Date: June 13, 2000
Photo Location WPT25

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.039	0.000
Round values to the nearest 0.005:					**0.040**	
Photograph No.:					9-11	

Table J-2
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 2
Reach: UN2-1 **(Appreciable Meander)** By: srg Date: June 13, 2000
Photo Location WPT25

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15		1.150	
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.045	0.000
Round values to the nearest 0.005:					**0.045**	
Photograph No.:					9-11	

Table J-2
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 2
Reach: UN2-1 By: srg Date: June 13, 2000
Photo Location WPT26

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			0.030
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.039	0.055
Round values to the nearest 0.005:					**0.040**	**0.055**
Photograph No.:					12-14	15-17

Table J-2
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 2
Reach: UN2-1**(Appreciable Meander)** By: srg Date: June 13, 2000
Photo Location WPT26

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			0.030
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15		1.150	1.150
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.045	0.063
Round values to the nearest 0.005:					**0.045**	**0.065**
Photograph No.:					12-14	15-17

Table J-2
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 2
Reach: UN2-2 By: srg Date: June 13, 2000
Photo Location WPT29

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			0.025
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.039	0.050
Round values to the nearest 0.005:					**0.040**	**0.050**
Photograph No.:					23-25	26-28

Table J-2
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 2
Reach: UN2-2 **(Severe Meander)** By: srg Date: June 13, 2000
Photo Location WPT29

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			0.025
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30		1.300	1.300
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.051	0.065
Round values to the nearest 0.005:					**0.050**	**0.065**
Photograph No.:					23-25	26-28

Table J-2
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 2
Reach: UN2-2 By: srg Date: June 13, 2000
Photo Location WPT30

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026	0.025		
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000		
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000	0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025	0.025		
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00	1.000	1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.050	0.039	0.000
Round values to the nearest 0.005:				**0.050**	**0.040**	
Photograph No.:				32-34	29-31	

Table J-2
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 2
Reach: UN2-2 **(Appreciable Meander)** By: srg Date: June 13, 2000
Photo Location WPT30

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026	0.025		
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000		
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000	0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025	0.025		
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15	1.150	1.150	
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.058	0.045	0.000
Round values to the nearest 0.005:				**0.060**	**0.045**	
Photograph No.:				32-34	29-31	

Table J-2
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 2
Reach: UN2-2 **(Severe Meander)** By: srg Date: June 13, 2000
Photo Location WPT30

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026	0.025		
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000		
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000	0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025	0.025		
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30	1.300	1.300	
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.065	0.051	0.000
Round values to the nearest 0.005:				**0.065**	**0.050**	
Photograph No.:				32-34	29-31	

Table J-2
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 2
Reach: UN2-3 By: srg Date: June 13, 2000
Photo Location WPT32

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			0.030
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.039	0.055
Round values to the nearest 0.005:					**0.040**	**0.055**
Photograph No.:					36-38	39-41

Table J-2
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 2
Reach: UN2-3 **(Severe Meander)** By: srg Date: June 13, 2000
Photo Location WPT32

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			0.030
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30		1.300	1.300
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.051	0.072
Round values to the nearest 0.005:					**0.050**	**0.070**
Photograph No.:					36-38	39-41

Table J-3
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 3
Reach: UN3-1 By: mmz Date: 13-Jun-00
Photo Location WPT12

Channel Conditions	Manning's n Adjustment			Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			0.025
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035	0.030	0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000		0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000		0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025	0.025		0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00	1.000	1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.055	0.039	0.050
Round values to the nearest 0.005:				**0.055**	**0.040**	**0.050**
Photograph No.:				4-6	1-3	7-9

Table J-3
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 3
Reach: UN3-2 By: mmz Date: 13-Jun-00
Photo Location WPT13

Channel Conditions	Manning's n Adjustment			Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035	0.030	0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000		
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025	0.025		
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00	1.000	1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.055	0.039	
Round values to the nearest 0.005:				**0.055**	**0.040**	
Photograph No.:				14-16	11-13	

Table J-3
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 3
Reach: UN3-2 **(Appreciable Meander)** By: mmz Date: 13-Jun-00
Photo Location

Channel Conditions	Manning's n Adjustment			Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035	0.030	0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000		
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025	0.025		
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15	1.150	1.150	
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.063	0.045	
Round values to the nearest 0.005:				**0.065**	**0.045**	
Photograph No.:						

Table J-3
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 3
Reach: UN3-2 **(Severe Meander)** By: mmz Date: 13-Jun-00

Channel Conditions	Manning's n Adjustment			Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035	0.030	0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000		
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025	0.025		
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30	1.300	1.300	
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.0715	0.0507	
Round values to the nearest 0.005:				**0.070**	**0.050**	
Photograph No.:						

Table J-3
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 3
Reach: Uun-3-3 By: mmz Date: 13-Jun-00
Photo Location WPT14

Channel Conditions	Manning's n Adjustment			Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035			0.030
	Cobble		0.030 - 0.050		0.040	
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$					0.049	0.055
Round values to the nearest 0.005:					**0.050**	**0.055**
Photograph No.:					19-21	22-24

Table J-3
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 3
Reach: UN3-3 **(Appreciable Meander)** By: mmz Date: 13-Jun-00
Photo Location

Channel Conditions	Manning's n Adjustment			Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035			0.030
	Cobble		0.030 - 0.050		0.040	
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15		1.150	1.150
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$					0.056	0.063
Round values to the nearest 0.005:					**0.055**	**0.065**
Photograph No.:						

Table J-3
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 3
Reach: UN3-4 By: mmz Date: 13-Jun-00
Photo Location WPT15

Channel Conditions	Manning's n Adjustment			Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050		0.040	
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.005	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004			
	Minor		0.005 - 0.015		0.005	
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$					0.058	
Round values to the nearest 0.005:					**0.060**	
Photograph No.:					25-27	

Table J-3
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 3
Reach: UN3-4**(Appreciable Meander)** By: mmz Date: 13-Jun-00
Photo Location

Channel Conditions	Manning's n Adjustment			Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050		0.040	
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.005	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004			
	Minor		0.005 - 0.015		0.005	
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15		1.150	
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$					0.067	
Round values to the nearest 0.005:					**0.070**	
Photograph No.:						

Table J-3
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 3
Reach: UN3-5 By: mmz Date: 13-Jun-00
Photo Location WPT16

Channel Conditions	Manning's n Adjustment			Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035	0.026		0.026
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000		0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000	0.000	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025	0.025		0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00	1.000	1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.051	0.039	0.051
Round values to the nearest 0.005:				**0.050**	**0.040**	**0.050**
Photograph No.:				31-33	28-30	34-36

Table J-3
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 3
Reach: UN3-5 **(Appreciable Meander)** By: mmz Date: 13-Jun-00
Photo Location

Channel Conditions	Manning's n Adjustment			Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035	0.026		0.026
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000		0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000	0.000	0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025	0.025		0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15	1.150	1.150	1.150
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.059	0.045	0.059
Round values to the nearest 0.005:				**0.060**	**0.045**	**0.060**
Photograph No.:						

Table J-3
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 3
Reach: UN3-5 By: mmz Date: 13-Jun-00
Photo Location WPT17

Channel Conditions	Manning's n Adjustment			Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035	0.026		0.026
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000		0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000		0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025	0.025		0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00	1.000	1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.051	0.039	0.051
Round values to the nearest 0.005:				**0.050**	**0.040**	**0.050**
Photograph No.:				40-42	37-39	43-45

Table J-3
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 3
Reach: UN3-5 **(Appreciable Meander)** By: mmz Date: 13-Jun-00
Photo Location

Channel Conditions	Manning's n Adjustment			Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035	0.026		0.026
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000		0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000		0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025	0.025		0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15	1.150	1.150	1.150
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.059	0.045	0.059
Round values to the nearest 0.005:				**0.060**	**0.045**	**0.060**
Photograph No.:						

Table J-3
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 3
Reach: UN3-5 **(Severe Meander)** By: mmz Date: 13-Jun-00
Photo Location

Channel Conditions	Manning's n Adjustment			Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035	0.026		0.026
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000		0.000
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000		0.000
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025	0.025		0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	0.000
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30	1.300	1.300	1.300
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.066	0.051	0.066
Round values to the nearest 0.005:				**0.065**	**0.050**	**0.065**
Photograph No.:						

Table J-3
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 3
Reach: UN3-6 By: mmz Date: 13-Jun-00
Photo Location WPT18

Channel Conditions	Manning's n Adjustment			Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050		0.035	
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$					0.044	
Round values to the nearest 0.005:					**0.045**	
Photograph No.:					46-48	

Table J-3
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 3
Reach: UN3-6 **(Appreciable Meander)** By: mmz Date: 13-Jun-00
Photo Location

Channel Conditions	Manning's n Adjustment			Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050		0.035	
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.008	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15		1.150	
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$					0.051	
Round values to the nearest 0.005:					**0.050**	
Photograph No.:						

Manning's n-value Calculation Sheets-Approximate Method Reaches

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Tributary 1 to Unnamed Wash 1
Reach: Tributary 1 Approximate Methods By: PJE Date: 30-Aug-00
Photo Location WPT48

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.009	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.040	0.000
Round values to the nearest 0.005:					**0.040**	
Photograph No.:					46-48	

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 2
Reach: Approximate Method By: PJE Date: 30-Aug-00
Photo Location PZA1

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.009	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.040	0.000
Round values to the nearest 0.005:					**0.040**	
Photograph No.:					42-44	

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 2
Reach: Approximate Method By: PJE Date: 30-Aug-00
Photo Location PZA2

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.009	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.040	0.000
Round values to the nearest 0.005:					**0.040**	
Photograph No.:					45-47	

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Tributary 2 to Unnamed Wash 2
Reach: Tributary 2 By: PJE Date: 30-Aug-00
Photo Location PZA3

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.009	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.040	0.000
Round values to the nearest 0.005:					**0.040**	
Photograph No.:					48-50	

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Tributary 2 to Unnamed Wash 2
Reach: Tributay 2 By: PJE Date: 30-Aug-00
Photo Location PZA4

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.009	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.040	0.000
Round values to the nearest 0.005:					**0.040**	
Photograph No.:				54	51-53	

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Tributary 1 to Unnamed Wash 2
Reach: Tributary 1 By: PJE Date: 30-Aug-00
Photo Location PZA5

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050		0.040	
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.009	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.050	0.000
Round values to the nearest 0.005:					**0.050**	
Photograph No.:					55-57	

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Tributary 1 to Unnamed Wash 2
Reach: Tributary 1 By: PJE Date: 30-Aug-00
Photo Location PZA6

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050		0.040	
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.009	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.050	0.000
Round values to the nearest 0.005:					**0.050**	
Photograph No.:					58-59	

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Twin Buttes
Reach: Approximate Method By: PJE Date: 30-Aug-00
Photo Location PZA7

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			0.025
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.009	
	Medium		0.010 - 0.025			0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.040	0.050
Round values to the nearest 0.005:					**0.040**	
Photograph No.:					1-3	4-6

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Twin Buttes
Reach: Approximate Method By: PJE Date: 30-Aug-00
Photo Location PZA8

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025		0.025	
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005			
	Moderate		0.006 - 0.010		0.006	
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004			
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.000	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050		0.020	
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.051	0.000
Round values to the nearest 0.005:					**0.050**	
Photograph No.:					7-8	

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Twin Buttes
Reach: Approximate Method By: PJE Date: 30-Aug-00
Photo Location PZA9

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			0.030
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.009	
	Medium		0.010 - 0.025			0.025
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	1.000
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.040	0.055
Round values to the nearest 0.005:					**0.040**	**0.055**
Photograph No.:					9-11	13-15

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Caterpillar Tanks
Reach: Approximate Method By: PJE Date: 30-Aug-00
Photo Location PZA10

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.009	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.040	0.000
Round values to the nearest 0.005:					**0.040**	
Photograph No.:					16-18	

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 4
Reach: UN4-2 By: PJE Date: 30-Aug-00
Photo Location PZA11

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.009	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.040	0.000
Round values to the nearest 0.005:					**0.040**	
Photograph No.:					19-21	

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 5
Reach: Approximate Method By: MMZ Date: 19-Apr-01
Photo Location PZA12

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.035	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000		0.000	
	Minor		0.001 - 0.005			
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004			
	Minor		0.005 - 0.015		0.005	
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.005	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000			
	Alternating (occasionally)		0.001 - 0.005		0.001	
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00		1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.046	0.000
Round values to the nearest 0.005:					**0.045**	
Photograph No.:					28-29	

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 6
Reach: Approximate Method By: MMZ Date: 19-Apr-01
Photo Location PZA13

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.009	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15		1.000	
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.040	0.000
Round values to the nearest 0.005:					**0.040**	
Photograph No.:					26-27	

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 7
Reach: Approximate Method By: MMZ Date: 19-Apr-01
Photo Location

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.009	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15		1.000	
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.040	0.000
Round values to the nearest 0.005:					**0.040**	
Photograph No.:						

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 8
Reach: Approximate Method By: MMZ Date: 19-Apr-01
Photo Location

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.009	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15		1.000	
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.040	0.000
Round values to the nearest 0.005:					**0.040**	
Photograph No.:						

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 9
Reach: Approximate Method By: MMZ Date: 19-Apr-01
Photo Location

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032			
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035		0.030	
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000			
	Minor		0.001 - 0.005		0.001	
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004		0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010		0.009	
	Medium		0.010 - 0.025			
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000		0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15		1.000	
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.000	0.040	0.000
Round values to the nearest 0.005:					**0.040**	
Photograph No.:						

Table J- 4
Determination of Manning's n-value by the FCDMC method

Project: North Peoria Area Drainage Master Plan - FCD Contract # 99-45
Steam: Unnamed Wash 4
Reach: UN4-1 By: PJE Date: 30-Aug-00
Photo Location PZA17

Channel Conditions		Manning's n Adjustment		Left Overbank	Main Channel	Right Overbank
Channel Bed Material	Concrete	n_0	0.012 - 0.018			
	Rock Cut		0.025			
	Firm Soil		0.025 - 0.032	0.026	0.026	
	Fine Sand		0.023 - 0.026			
	Coarse Sand		0.026 - 0.035			
	Gravel		0.028 - 0.035			
	Cobble		0.030 - 0.050			
	Boulder		0.040 - 0.070			
Degree of Irregularity	Smooth	n_1	0.000	0.000	0.000	
	Minor		0.001 - 0.005			
	Moderate		0.006 - 0.010			
	Severe		0.011 - 0.020			
Effects of Obstructions	Negligable	n_2	0.000 - 0.004	0.000	0.000	
	Minor		0.005 - 0.015			
	Appreciable		0.020 - 0.030			
	Severe		0.040 - 0.060			
Vegetation	Small	n_3	0.002 - 0.010			
	Medium		0.010 - 0.025	0.010	0.020	
	Large		0.025 - 0.050			
	Very Large		0.050 - 0.100			
Variations in Channel Cross Section	Gradual	n_4	0.000	0.000	0.000	
	Alternating (occasionally)		0.001 - 0.005			
	Alternating (frequently)		0.010 - 0.015			
Degree of Meandering	Minor	m	1.00	1.000	1.000	
	Appreciable		1.15			
	Severe		1.30			
$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$				0.036	0.046	0.000
Round values to the nearest 0.005:				**0.035**	**0.045**	
Photograph No.:				34	32-33	

Photographs Locations and Descriptions

OVERLAP MATCH TO FIGURE 1.2

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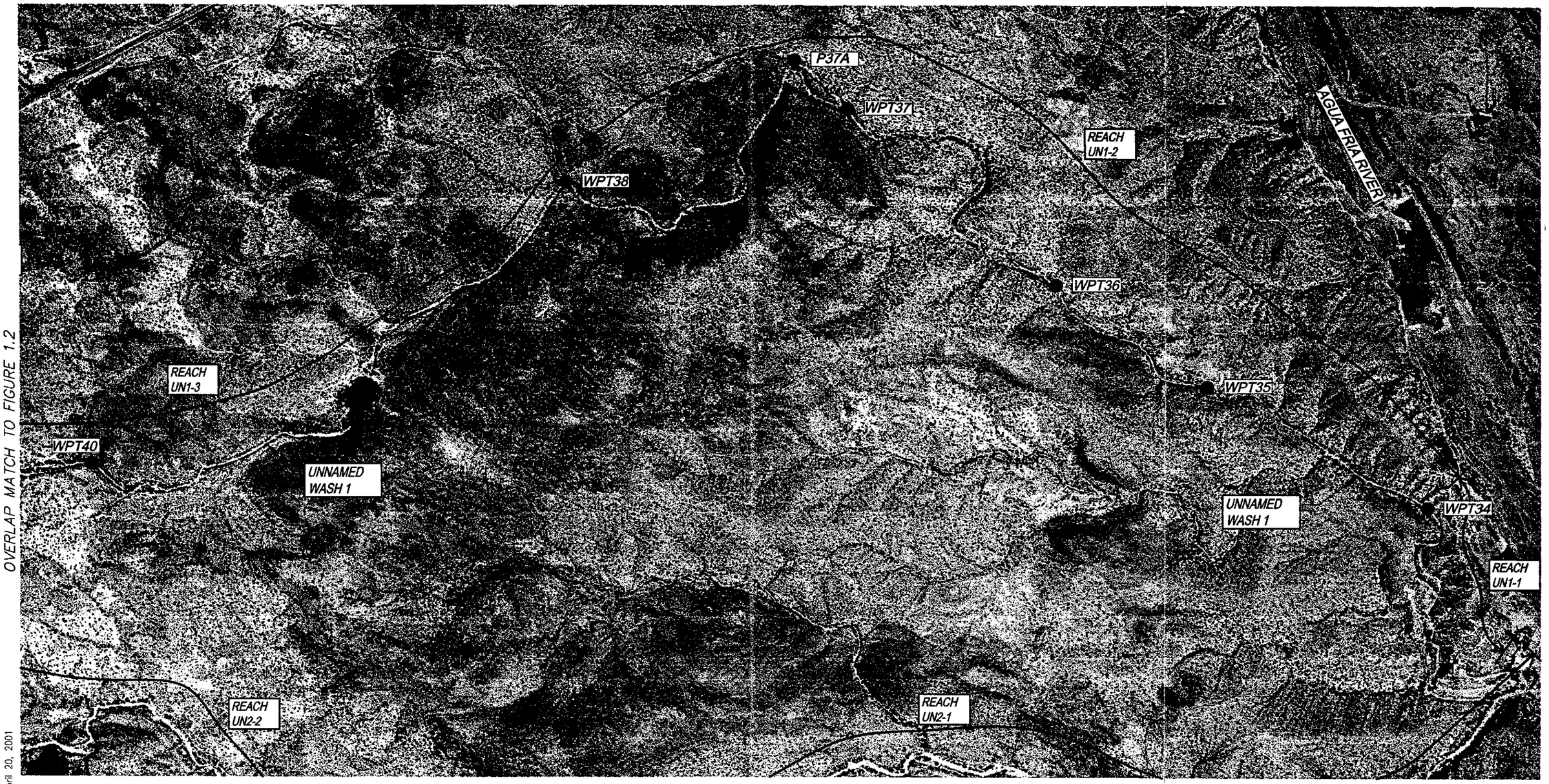
April 20, 2001



Stantec

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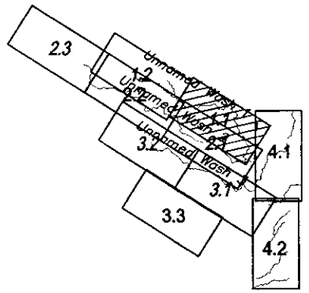


Legend

- WPT38 — PHOTOGRAPH LOCATION
- PZA1 — PHOTOGRAPH LOCATION (ZONE A FLOODPLAIN)
- UNNAMED WASH 7 APPROXIMATE METHOD REACH — n-VALUE REACH LOCATION

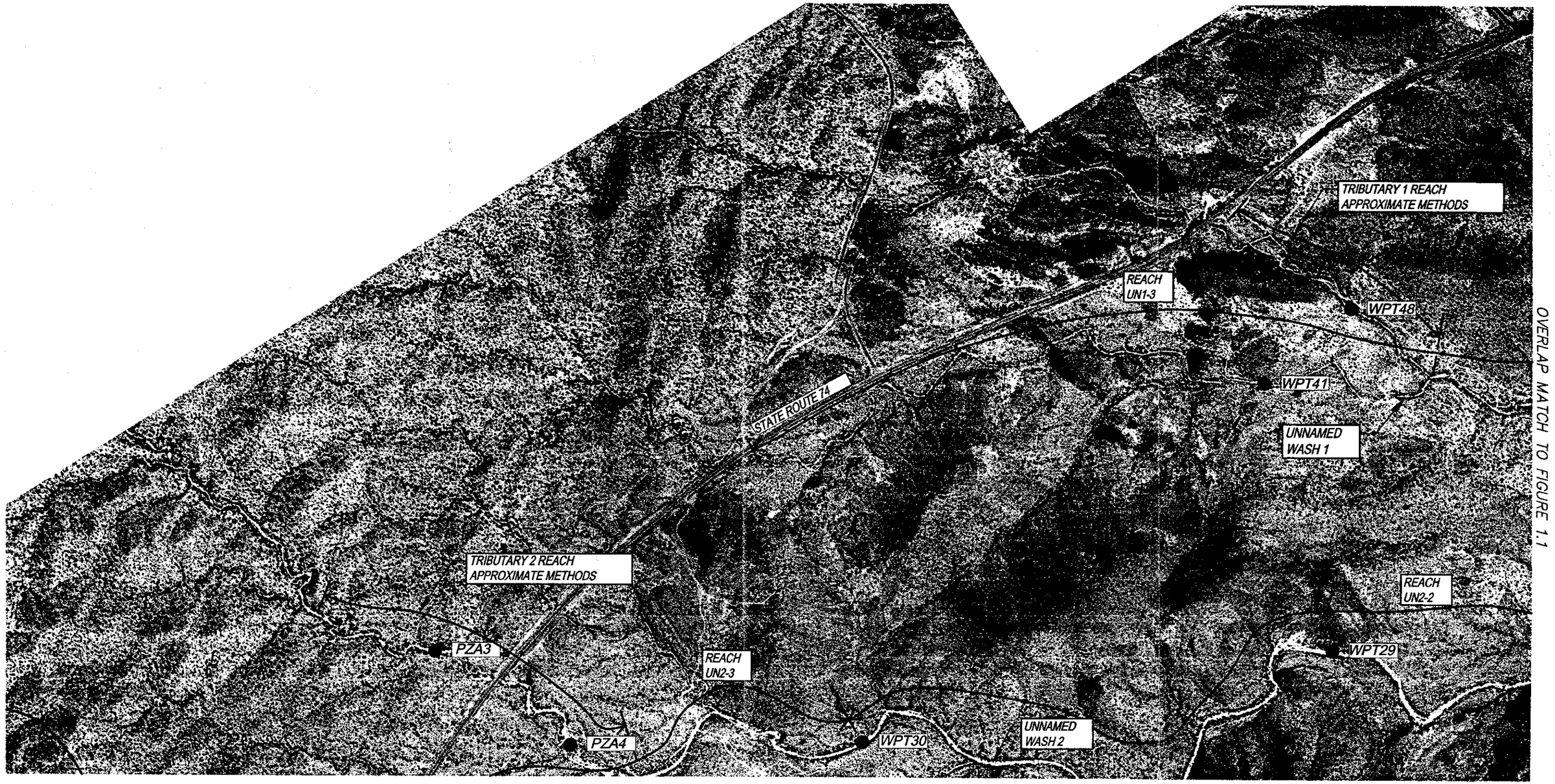
1" = 1000'

Client/Project
FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
N. PEORIA ADMP, FCD 99-45

Figure No.
FIGURE 1.1

Title
MANNING'S N-VALUE PHOTO LOCATION MAP FOR DETAIL AND ZONE A FLOODPLAIN DELINEATIONS

Date: April 20, 2001
Project Number: 82000146



OVERLAP MATCH TO FIGURE 1.1

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April 20, 2001

Stantec

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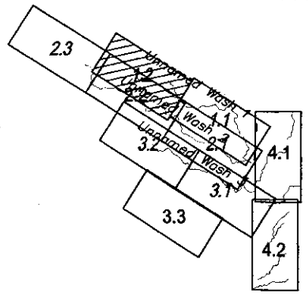


Legend

- WPT38 — PHOTOGRAPH LOCATION
- PZA1 — PHOTOGRAPH LOCATION (ZONE A FLOODPLAIN)
- UNNAMED WASH 7 APPROXIMATE METHOD REACH
- n–VALUE REACH LOCATION

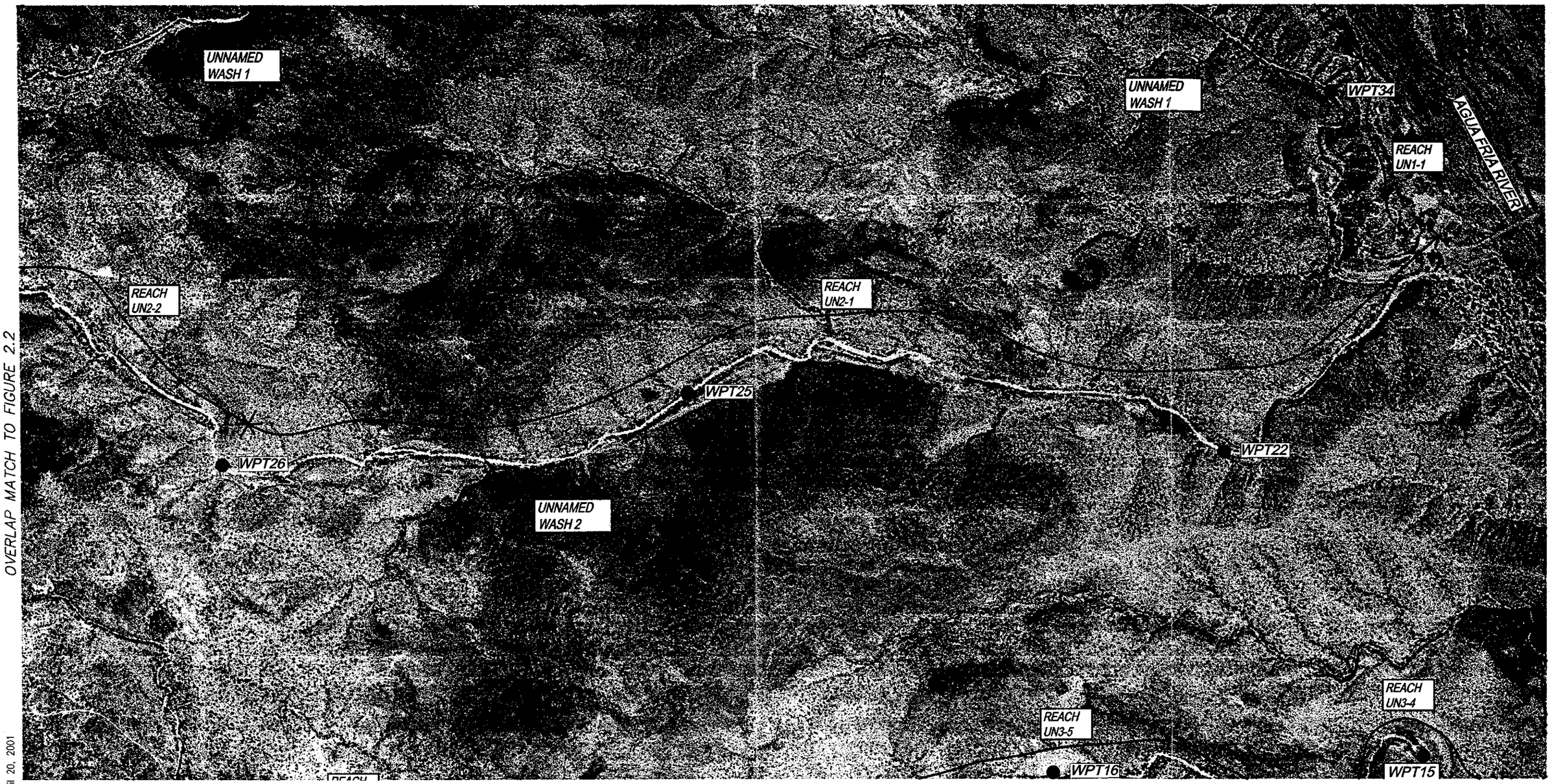
1" = 1000'

Client/Project
FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
N. PEORIA ADMP, FCD 99–45

Figure No.
FIGURE 1.2

Title
MANNING'S N-VALUE PHOTO LOCATION MAP FOR DETAIL AND ZONE A FLOODPLAIN DELINEATIONS

Date: April 20, 2001
Project Number: 82000146



OVERLAP MATCH TO FIGURE 2.2

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April 20, 2001

Stantec

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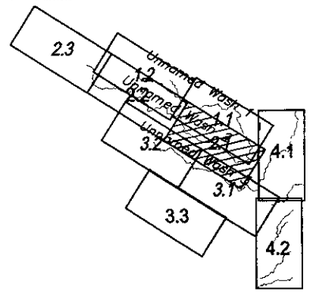


Legend

- WPT38 — PHOTOGRAPH LOCATION
- PZA1 — PHOTOGRAPH LOCATION (ZONE A FLOODPLAIN)
- UNNAMED WASH 7 APPROXIMATE METHOD REACH — n–VALUE REACH LOCATION

1" = 1000'

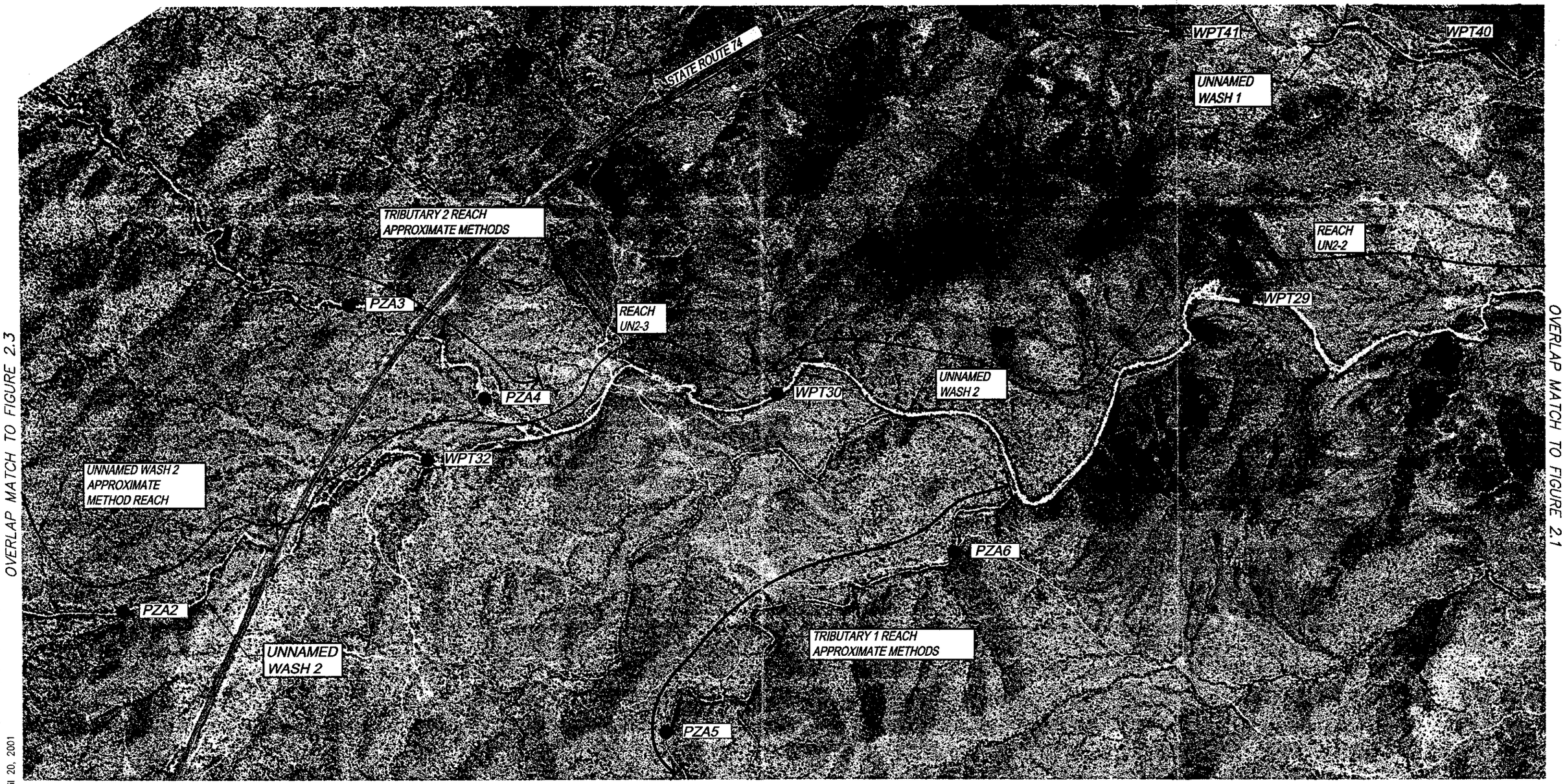
Client/Project
FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
N. PEORIA ADMP, FCD 99–45

Figure No.
FIGURE 2.1

Title
MANNING'S N-VALUE PHOTO LOCATION MAP FOR DETAIL AND ZONE A FLOODPLAIN DELINEATIONS

Date: April 20, 2001
Project Number: 82000146

OVERLAP MATCH TO FIGURE 2.3



OVERLAP MATCH TO FIGURE 2.1

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April 20, 2001

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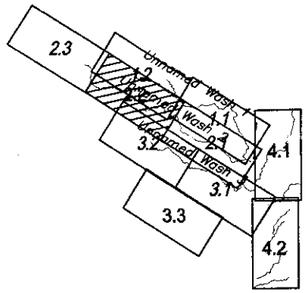


Legend

- WPT38 — PHOTOGRAPH LOCATION
- PZA1 — PHOTOGRAPH LOCATION (ZONE A FLOODPLAIN)
- UNNAMED WASH 7 APPROXIMATE METHOD REACH
- n–VALUE REACH LOCATION

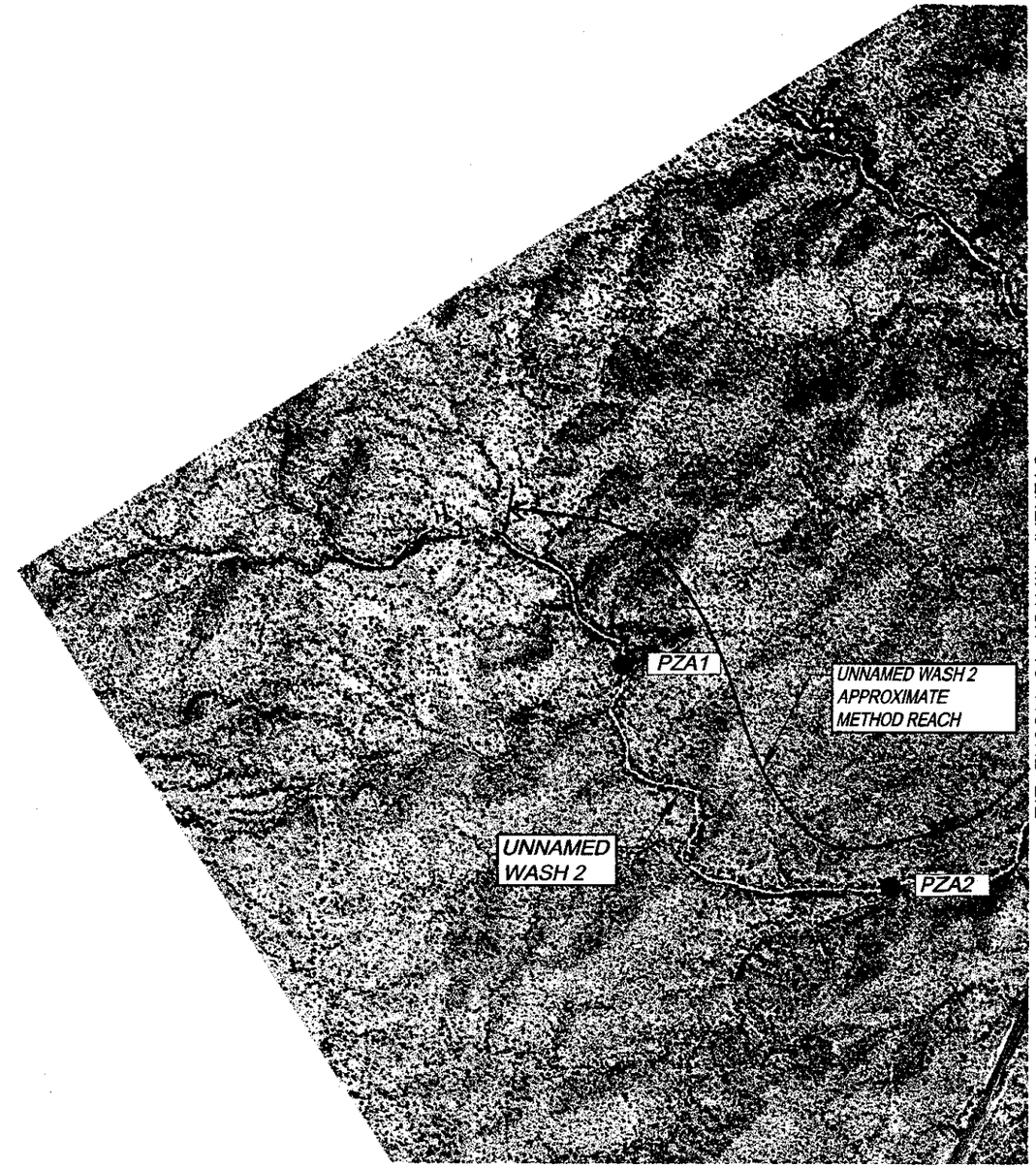
1" = 1000'

Client/Project
FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
N. PEORIA ADMP, FCD 99–45

Figure No.
FIGURE 2.2

Title
MANNING'S N-VALUE PHOTO LOCATION MAP FOR DETAIL AND ZONE A FLOODPLAIN DELINEATIONS

Date: April 20, 2001
Project Number: 82000146



OVERLAP MATCH TO FIGURE 2.2

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April 20, 2001

Stantec

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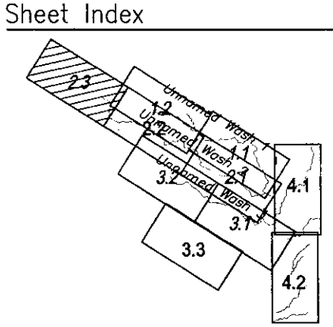

Legend

- WPT38 — PHOTOGRAPH LOCATION
- PZA1 — PHOTOGRAPH LOCATION (ZONE A FLOODPLAIN)
- UNNAMED WASH 7 APPROXIMATE METHOD REACH — n–VALUE REACH LOCATION

1" = 1000'

Client/Project
FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
N. PEORIA ADMP, FCD 99–45

Figure No.
FIGURE 2.3

Title
MANNING'S N-VALUE PHOTO LOCATION MAP FOR DETAIL AND ZONE A FLOODPLAIN DELINEATIONS

Date: April 20, 2001
Project Number: 82000146

OVERLAP MATCH TO FIGURE 3.2

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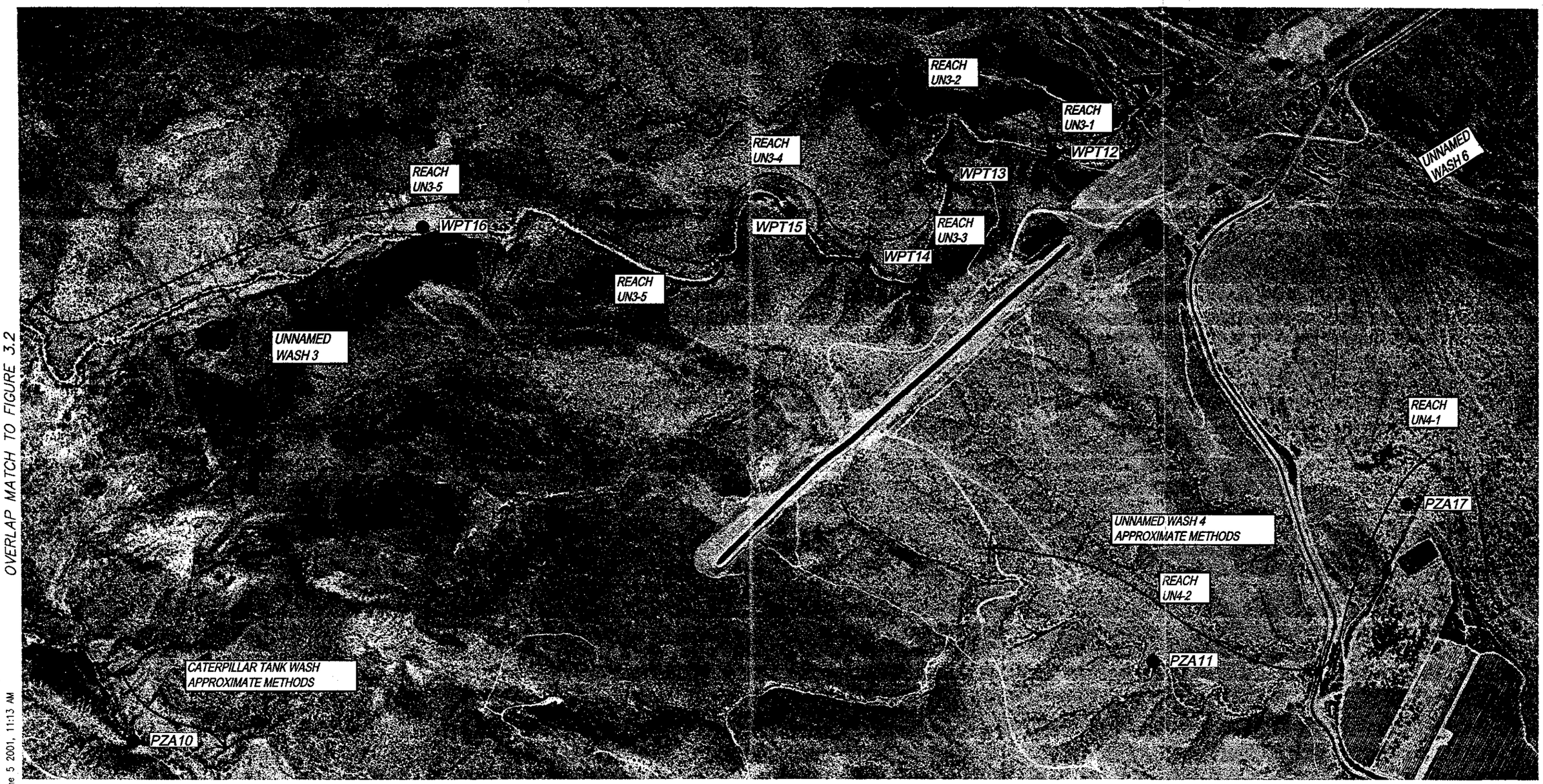
June 5 2001, 11:13 AM



Stantec

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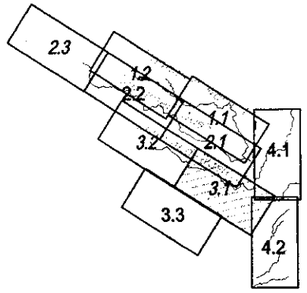


Legend

- WPT38 — PHOTOGRAPH LOCATION
- PZA1 — PHOTOGRAPH LOCATION (ZONE A FLOODPLAIN)
- UNNAMED WASH 7 APPROXIMATE METHOD REACH — n–VALUE REACH LOCATION

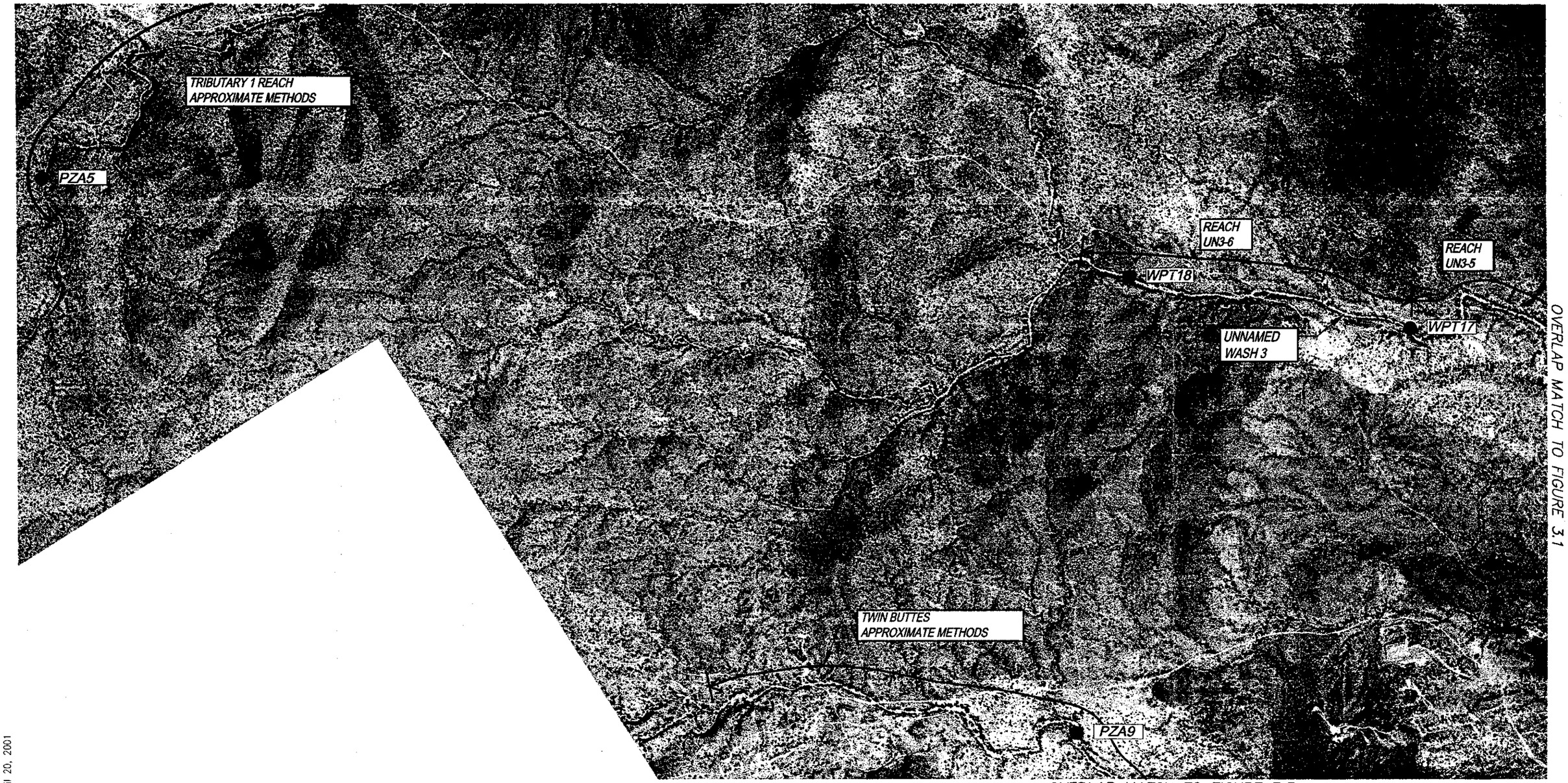
1" = 1000'

Client/Project
FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
N. PEORIA ADMP, FCD 99–45

Figure No.
FIGURE 3.1

Title
MANNING'S N-VALUE PHOTO LOCATION MAP FOR DETAIL AND ZONE A FLOODPLAIN DELINEATIONS

Date: April 20, 2001
Project Number: 82000146



OVERLAP MATCH TO FIGURE 3.1

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April 20, 2001

Stantec

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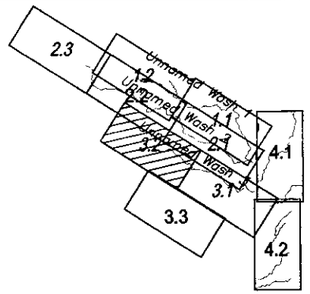


Legend

- WPT38 — PHOTOGRAPH LOCATION
- PZA1 — PHOTOGRAPH LOCATION (ZONE A FLOODPLAIN)
- UNNAMED WASH 7 APPROXIMATE METHOD REACH — n–VALUE REACH LOCATION

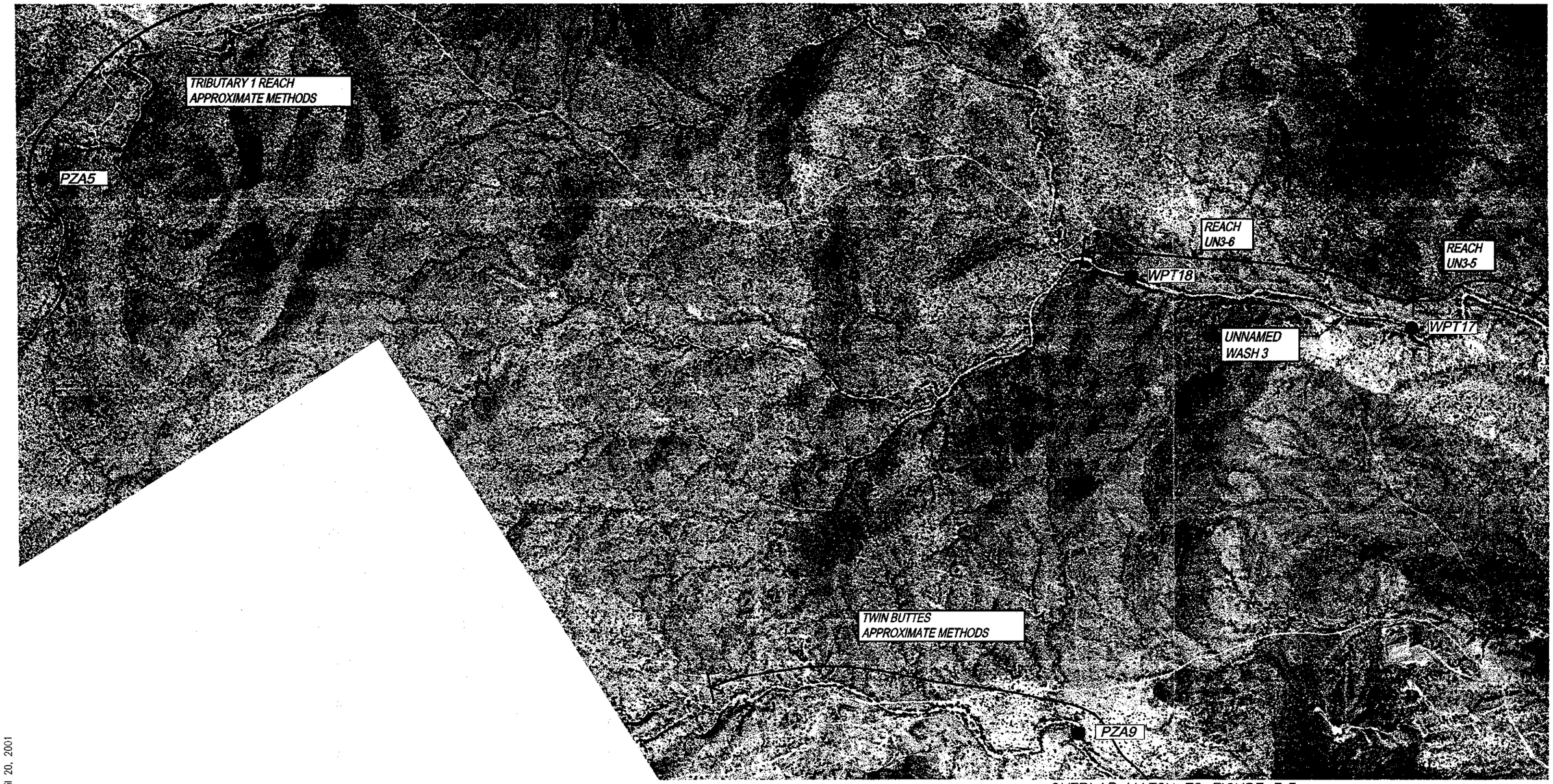
1" = 1000'

Client/Project
FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
N. PEORIA ADMP, FCD 99–45

Figure No.
FIGURE 3.2

Title
MANNING'S N-VALUE PHOTO LOCATION MAP FOR DETAIL AND ZONE A FLOODPLAIN DELINEATIONS

Date: April 20, 2001
Project Number: 82000146



OVERLAP MATCH TO FIGURE 3.1

OVERLAP MATCH TO FIGURE 3.3

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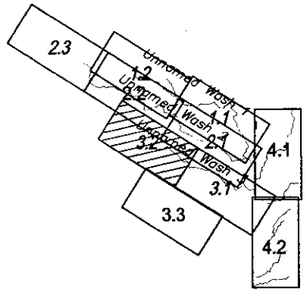
April 20, 2001

Stantec

Sheet Index



Legend

- WPT38 — PHOTOGRAPH LOCATION
- PZA1 — PHOTOGRAPH LOCATION (ZONE A FLOODPLAIN)
- UNNAMED WASH 7 APPROXIMATE METHOD REACH — n–VALUE REACH LOCATION

1" = 1000'

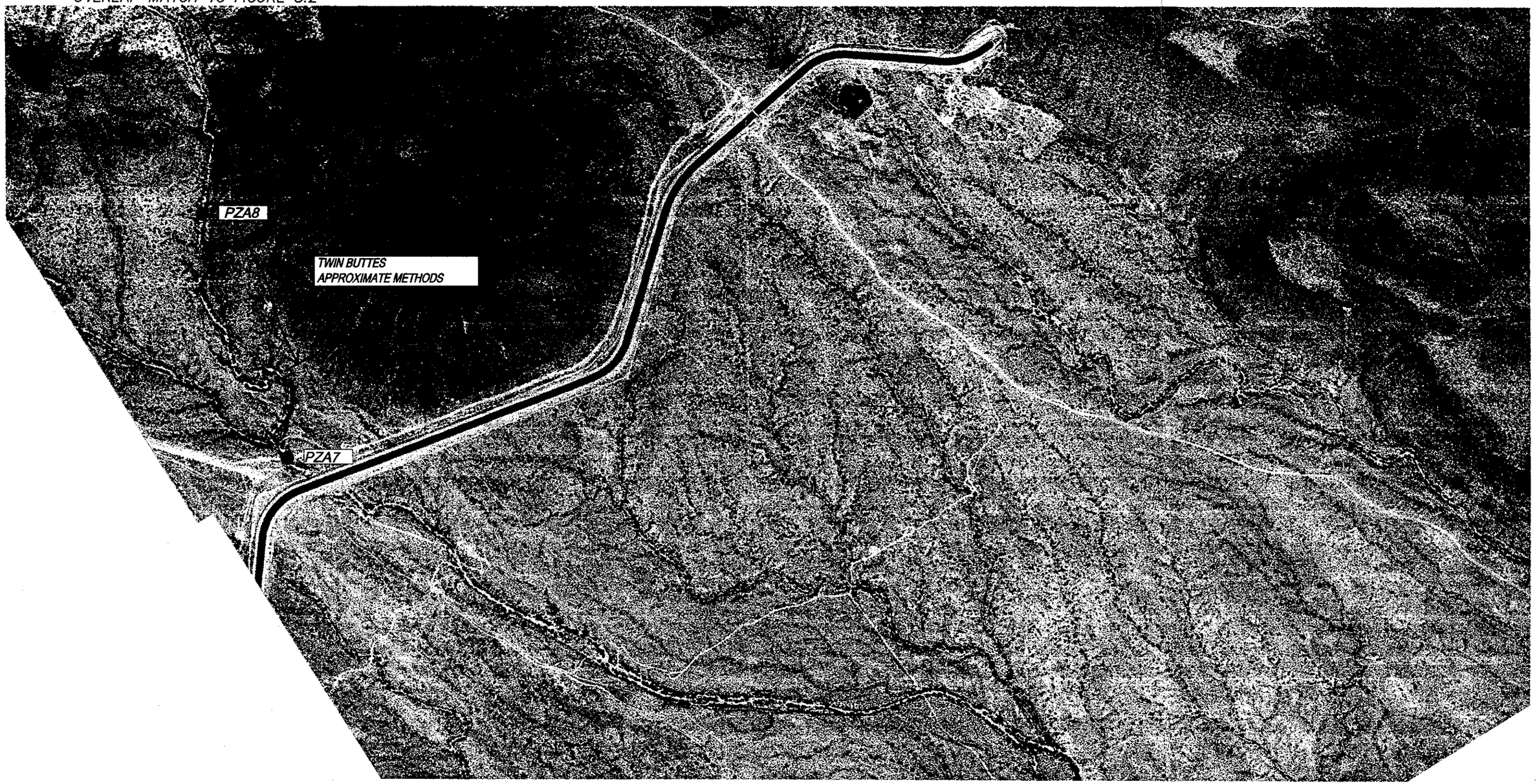
Client/Project
FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
N. PEORIA ADMP, FCD 99–45

Figure No.
FIGURE 3.2

Title
MANNING'S N-VALUE PHOTO LOCATION MAP FOR DETAIL AND ZONE A FLOODPLAIN DELINEATIONS

Date: April 20, 2001
Project Number: 82000146

OVERLAP MATCH TO FIGURE 3.2



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April 20, 2001

Stantec

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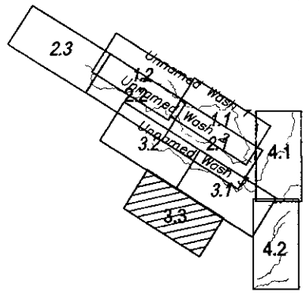


Legend

- WPT38 — PHOTOGRAPH LOCATION
- PZA1 — PHOTOGRAPH LOCATION (ZONE A FLOODPLAIN)
- UNNAMED WASH 7 APPROXIMATE METHOD REACH
- n–VALUE REACH LOCATION

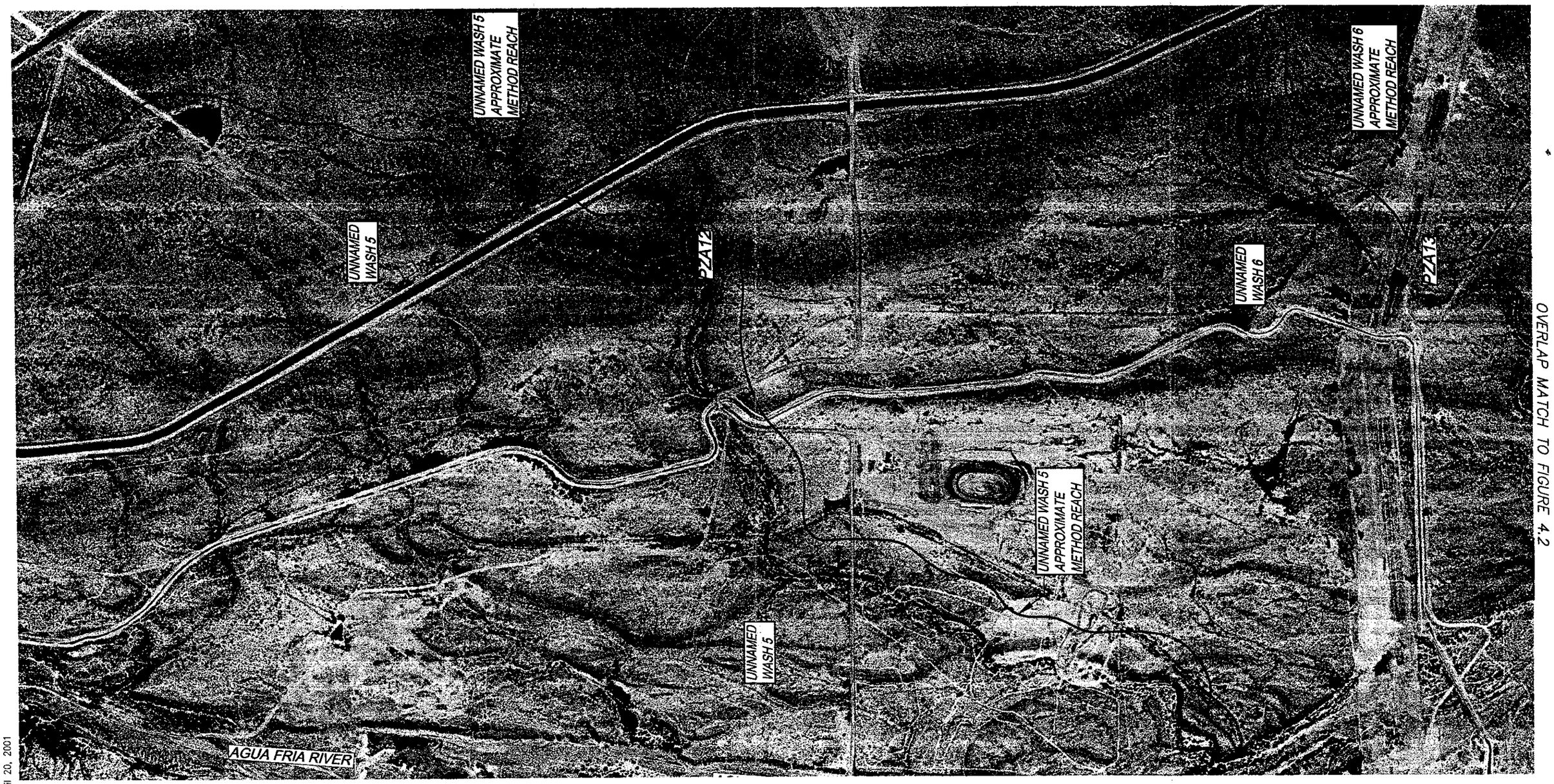
1" = 1000'

Client/Project
FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
N. PEORIA ADMP, FCD 99–45

Figure No.
FIGURE 3.3

Title
MANNING'S N-VALUE PHOTO LOCATION MAP FOR DETAIL AND ZONE A FLOODPLAIN DELINEATIONS

Date: April 20, 2001
Project Number: 82000146



OVERLAP MATCH TO FIGURE 4.2

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April 20, 2001

Stantec

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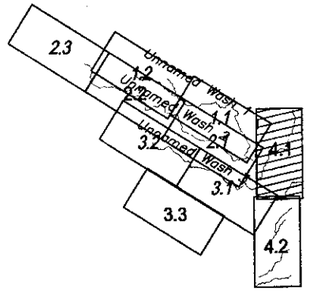


Legend

- WPT38 — PHOTOGRAPH LOCATION
- PZA1 — PHOTOGRAPH LOCATION (ZONE A FLOODPLAIN)
- UNNAMED WASH 7 APPROXIMATE METHOD REACH — n–VALUE REACH LOCATION

1" = 1000'

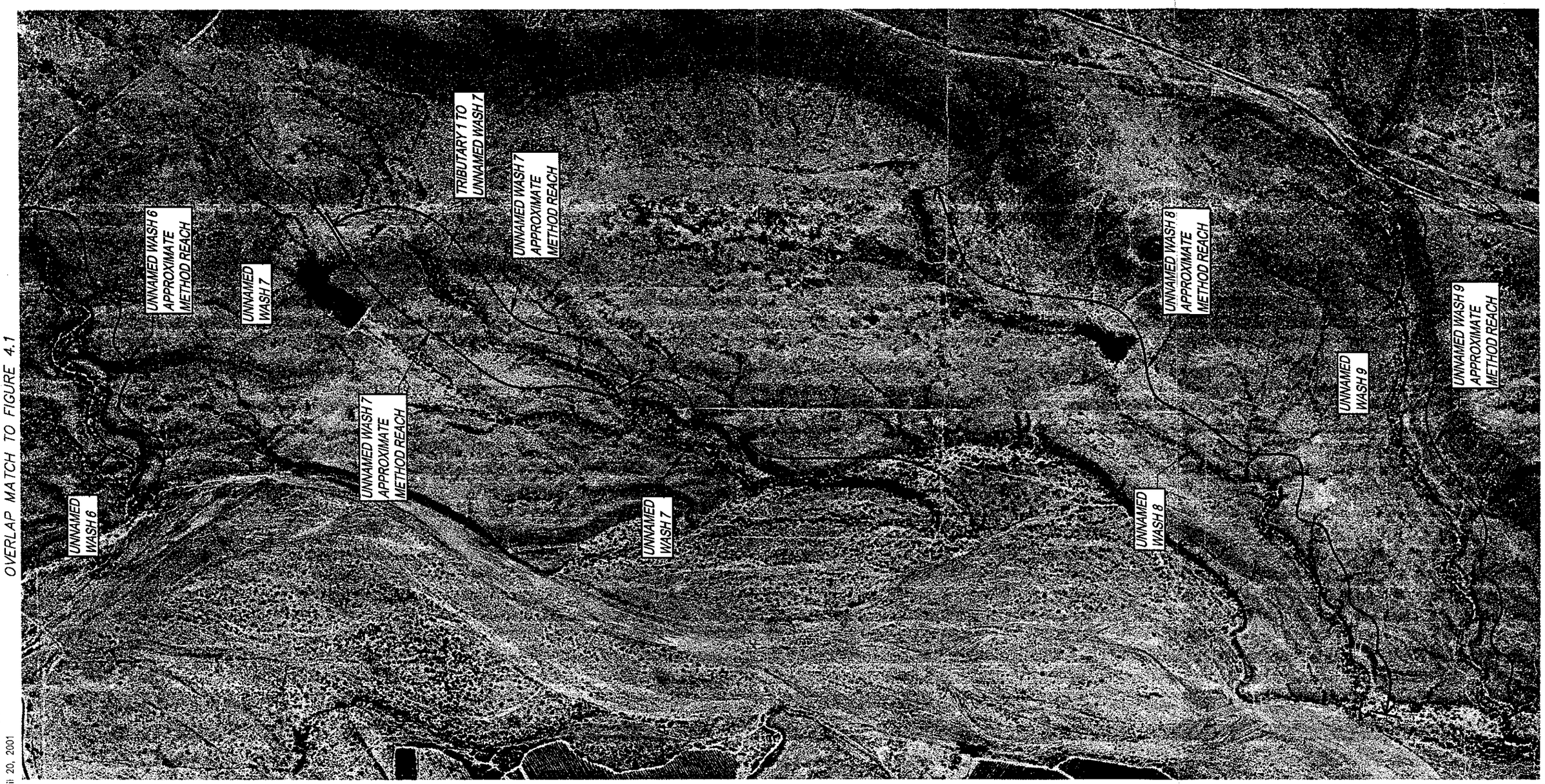
Client/Project
FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
N. PEORIA ADMP, FCD 99–45

Figure No.
FIGURE 4.1

Title
MANNING'S N-VALUE PHOTO LOCATION MAP FOR DETAIL AND ZONE A FLOODPLAIN DELINEATIONS

Date: April 20, 2001
Project Number: 82000146

OVERLAP MATCH TO FIGURE 4.1



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April 20, 2001

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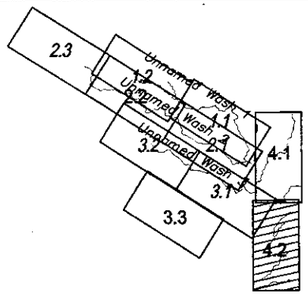


Legend

- WPT38 — PHOTOGRAPH LOCATION
- PZA1 — PHOTOGRAPH LOCATION (ZONE A FLOODPLAIN)
- UNNAMED WASH 7 APPROXIMATE METHOD REACH — n–VALUE REACH LOCATION

1" = 1000'

Client/Project
FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
N. PEORIA ADMP, FCD 99–45

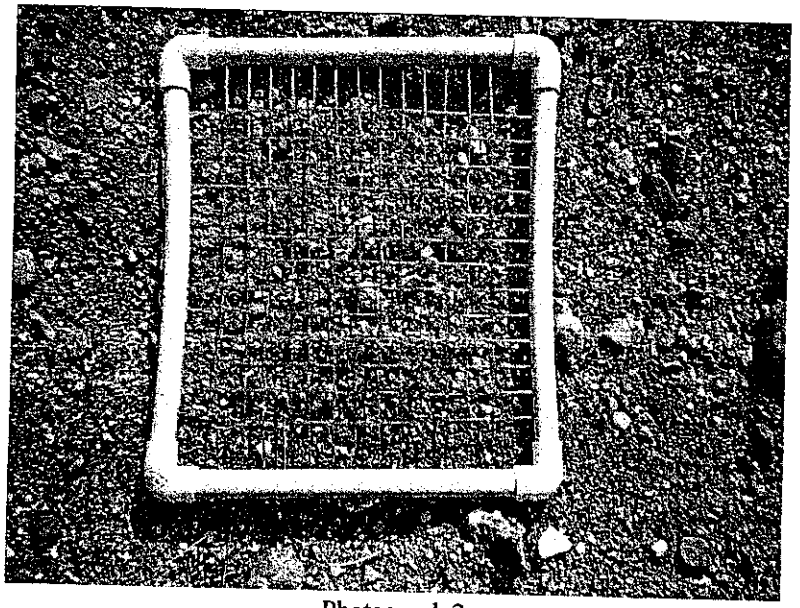
Figure No.
FIGURE 4.2

Title
MANNING'S N-VALUE PHOTO LOCATION MAP FOR DETAIL AND ZONE A FLOODPLAIN DELINEATIONS

Date: April 20, 2001
Project Number: 82000146

Selected Field Photographs-Unnamed Wash 1

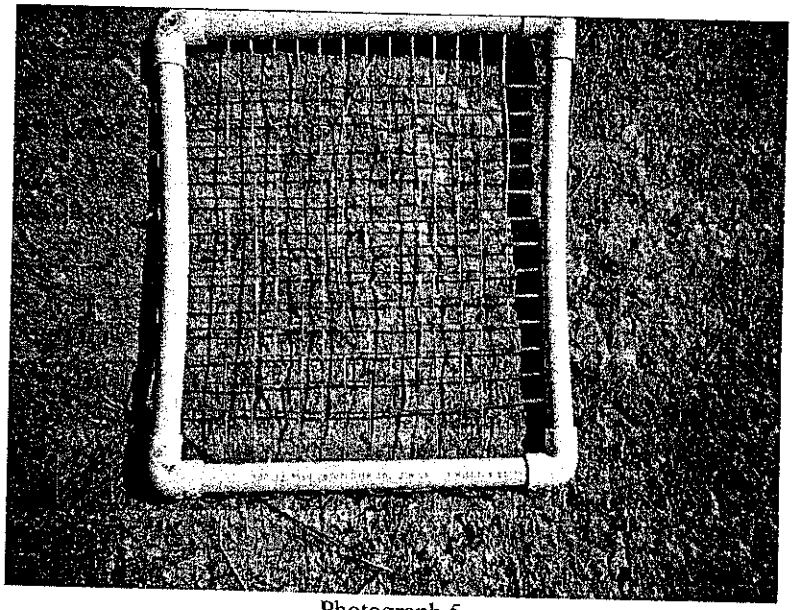
Unnamed Wash 1 Photographs



Photograph 2
Main Channel, Bed Material

Photograph 3
Main Channel, Looking Upstream

Photograph 4
Main Channel, Looking Downstream

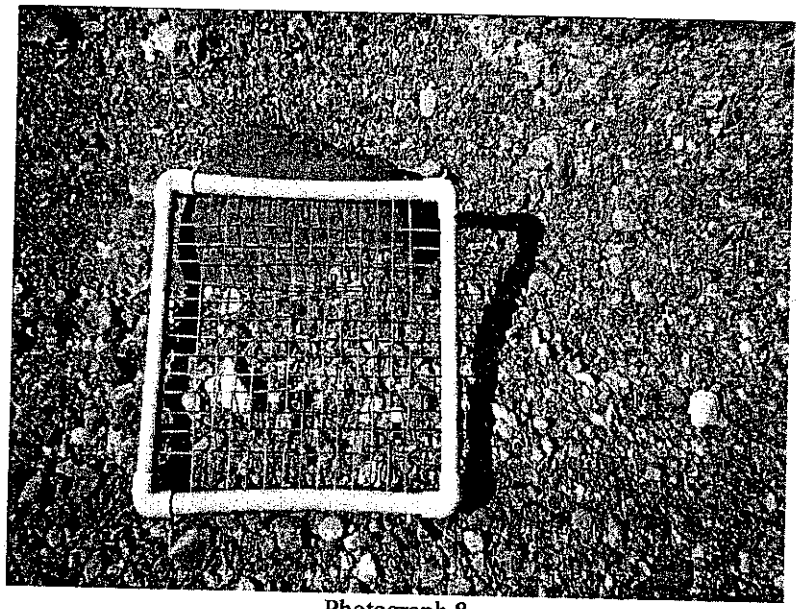


Photograph 5
Right Over Bank, Bed Material

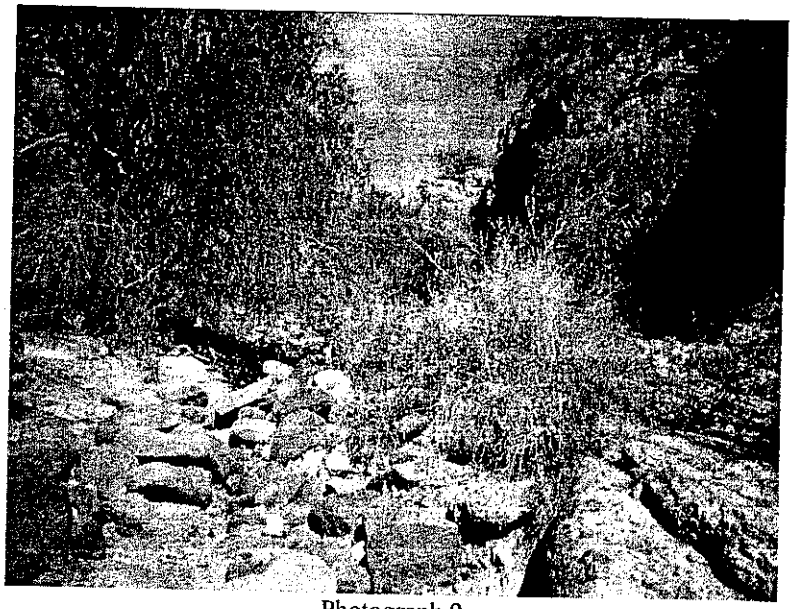
Unnamed Wash 1 Photographs

Photograph 6
Right Over Bank, Looking Upstream

Photograph 7
Right Over Bank, Looking Downstream



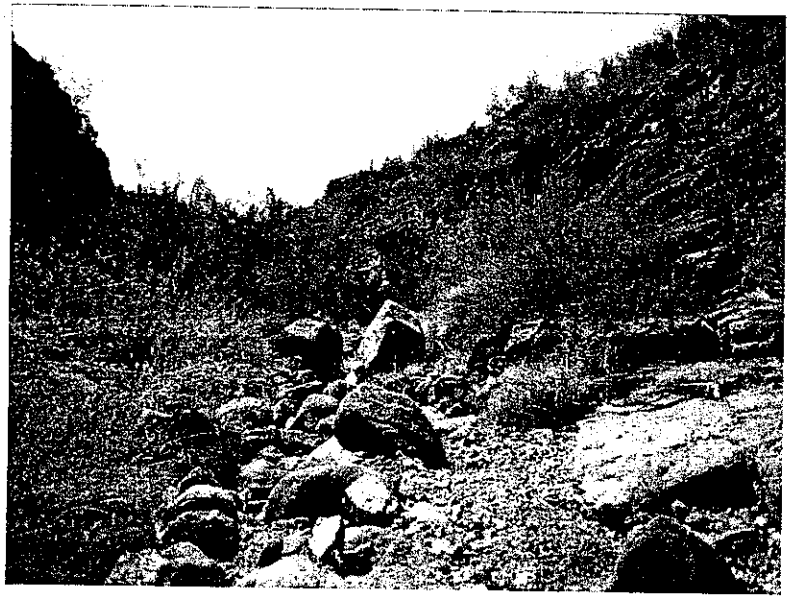
Photograph 8
Main Channel, Bed Material



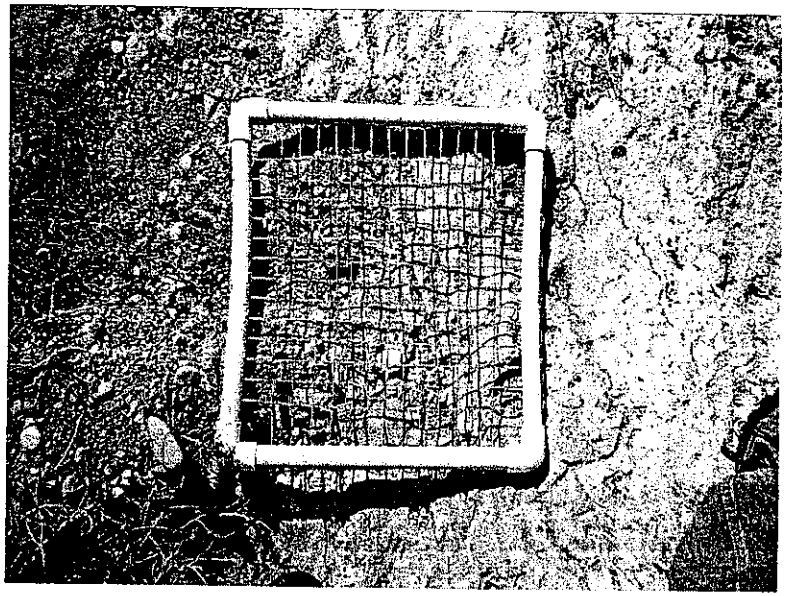
Photograph 9
Main Channel, Looking Upstream

P:\82000146\Data Collection\Photos\Unnamed Wash 1\un1photo.cdr

Unnamed Wash 1 Photographs

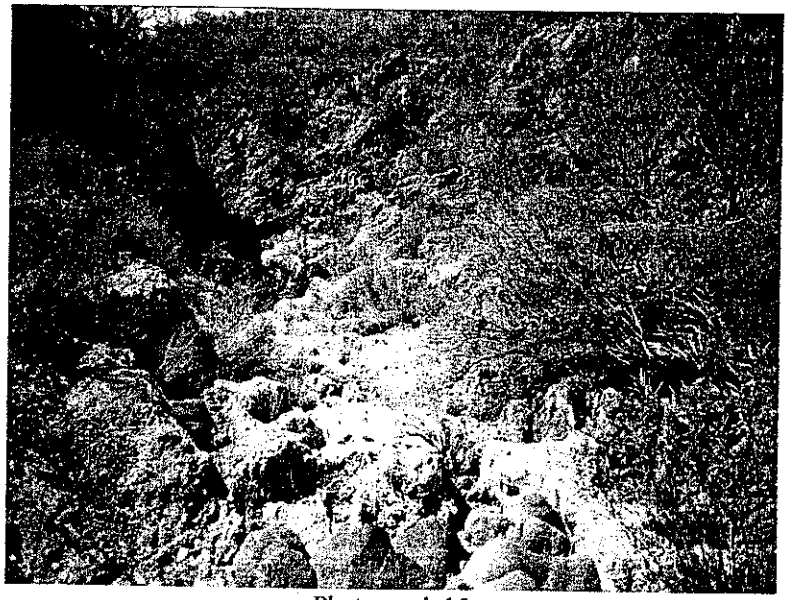


Photograph 10
Main Channel, Looking Downstream



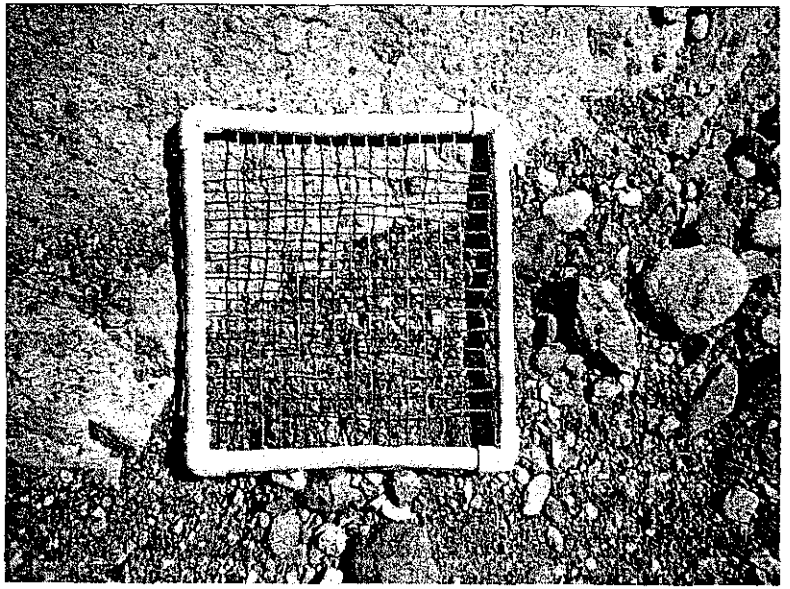
Photograph 13
Main Channel, Bed Material

Photograph 14
Main Channel, Looking Upstream



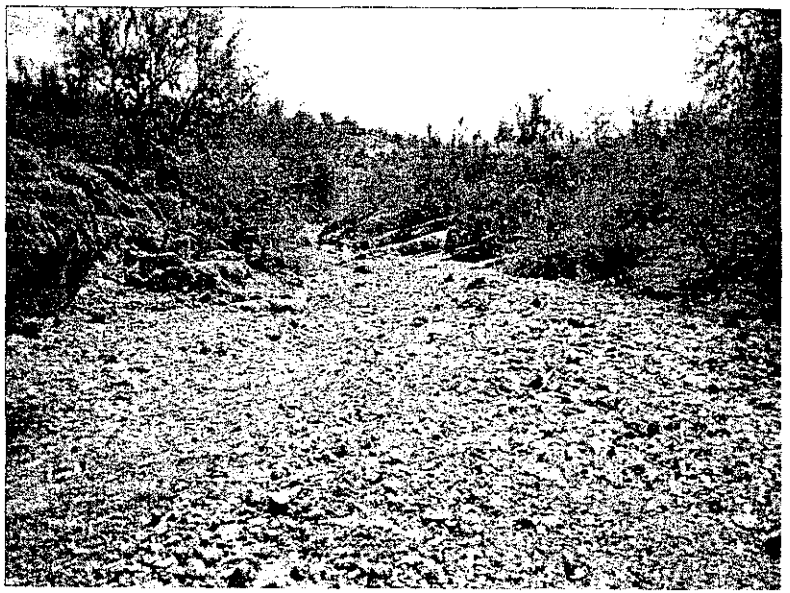
Photograph 15
Main Channel, Looking Downstream

Unnamed Wash 1 Photographs

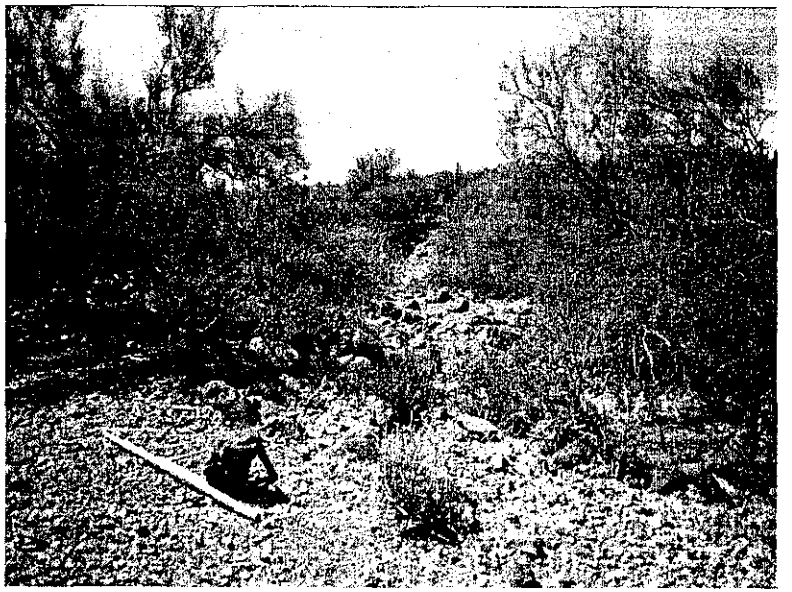


Photograph 16
Main Channel, Bed Material

Photograph 17
Main Channel, Looking Upstream



Photograph 18
Main Channel, Looking Downstream

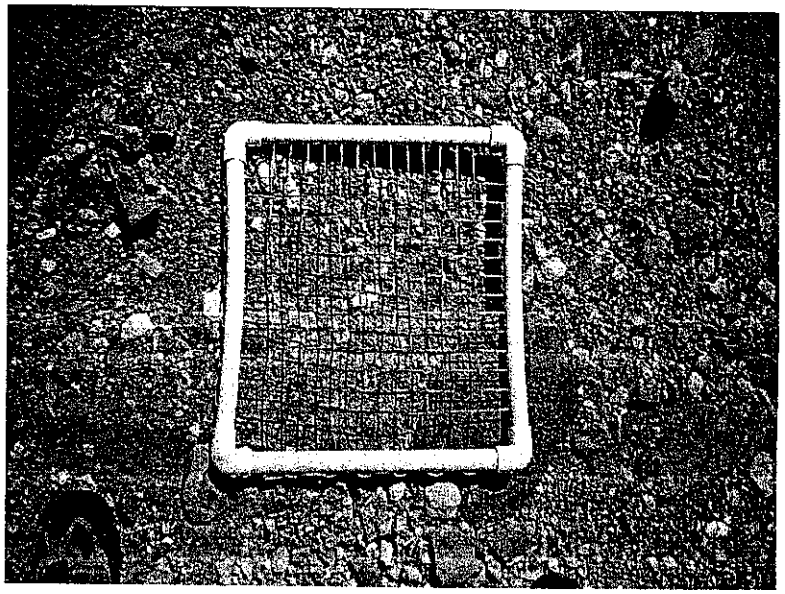


Photograph 19
Main Channel, Bed Material

P:\82000146\Data Collection\Photos\Unnamed Wash 1\un1photo.cdr

Unnamed Wash 1 Photographs

Photograph 20
Main Channel, Looking Upstream



Photograph 21
Main Channel, Bed Material

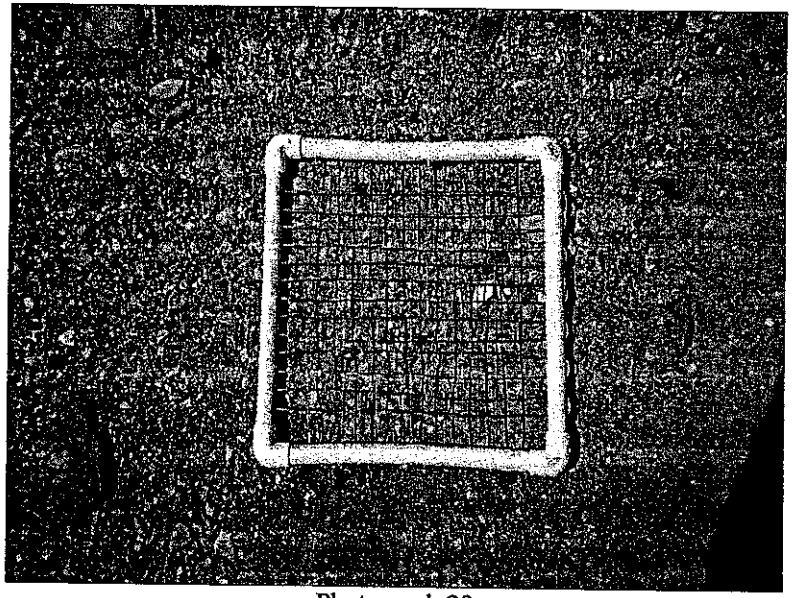
Photograph 22
Main Channel, Looking Upstream

Photograph 23
Main Channel, Looking Downstream

Unnamed Wash 1 Photographs

Photograph 23
Main Channel, Looking Downstream

Photograph 27
Main Channel, Looking Upstream



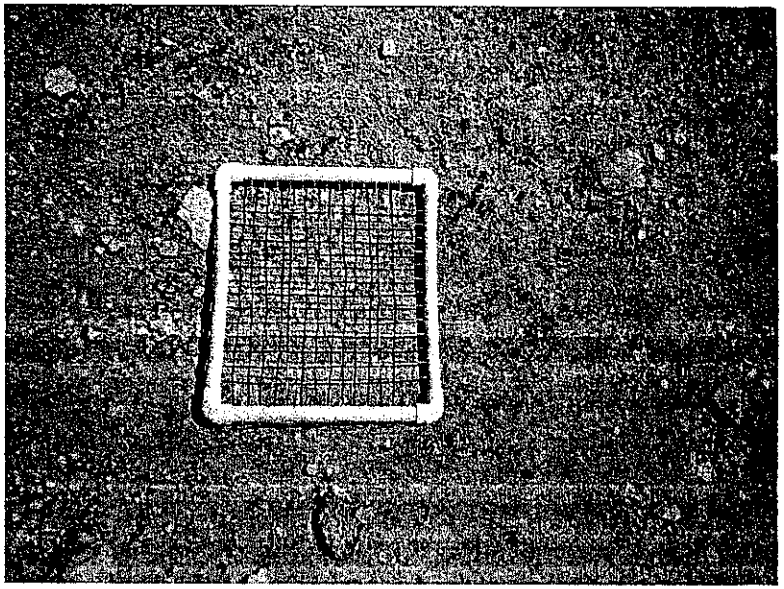
Photograph 28
Main Channel, Bed Material

Photograph 29
Main Channel, Looking Upstream

P:\820001146\Data Collection\Photos\Unnamed Wash 1\un1photo.cdr

Unnamed Wash 1 Photographs

Photograph 30
Main Channel, Looking Downstream



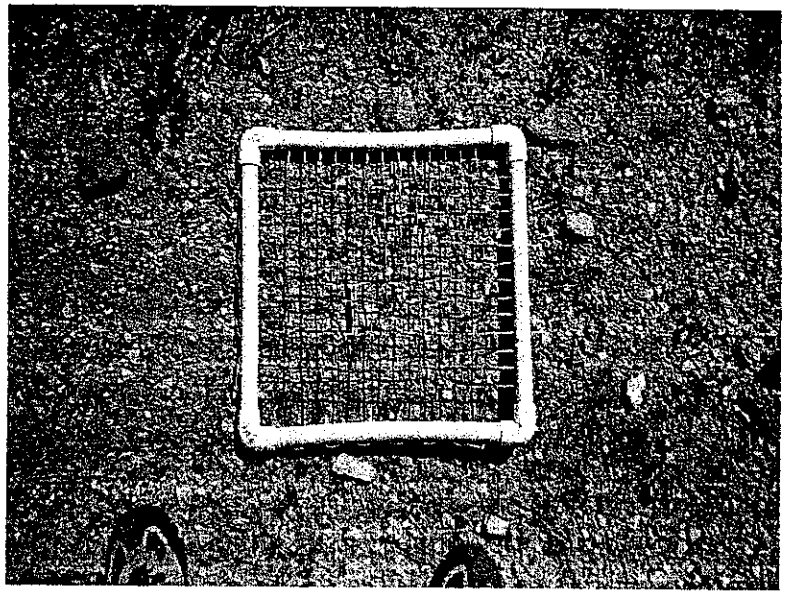
Photograph 31
Left Over Bank, Bed Material

Photograph 32
Left Over Bank, Looking Upstream

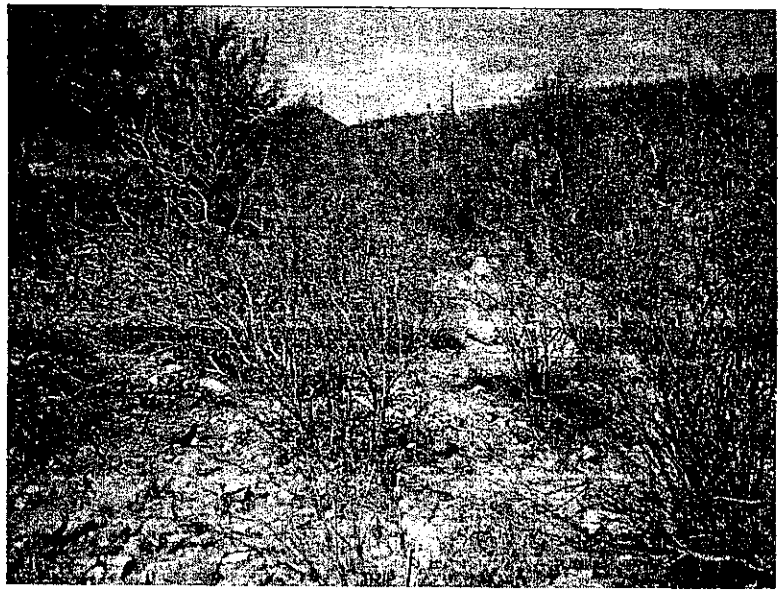
Photograph 33
Left Over Bank, Downstream Photo

P:\82000146\Data Collection\Photos\Unnamed Wash 1\un1photo.cdr

Unnamed Wash 1 Photographs

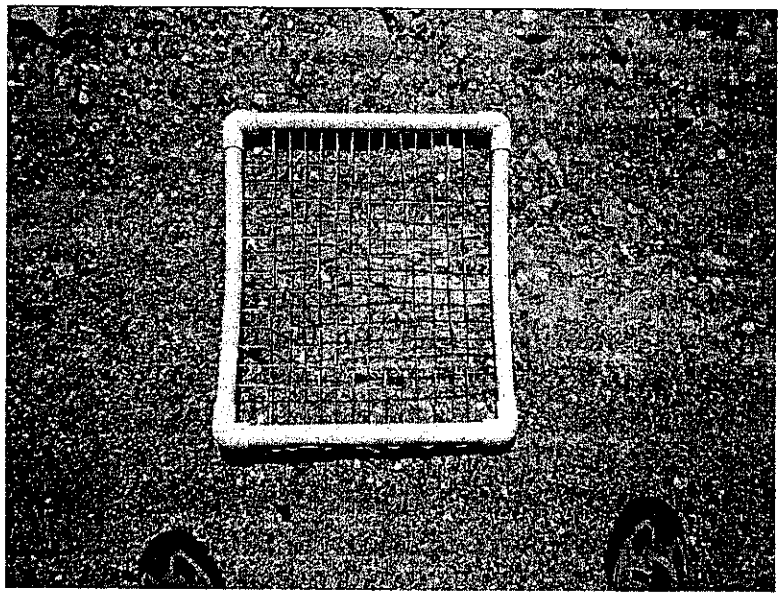


Photograph 34
Right Over Bank, Bed Material



Photograph 35
Right Over Bank, Looking Upstream

Photograph 36
Right Over Bank, Looking Downstream

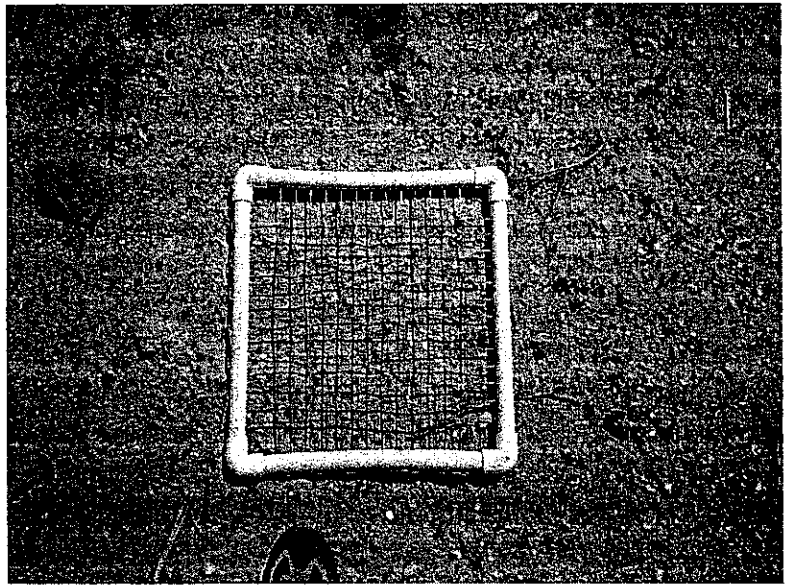


Photograph 37
Main Channel, Bed Material

Unnamed Wash 1 Photographs

Photograph 38
Main Channel, Looking Upstream

Photograph 39
Main Channel, Looking Downstream

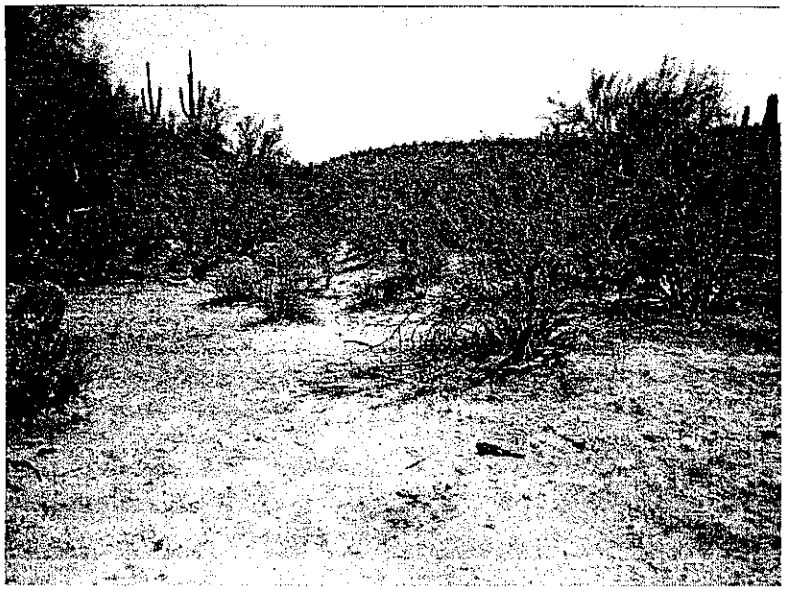


Photograph 40
Left Over Bank, Bed Material

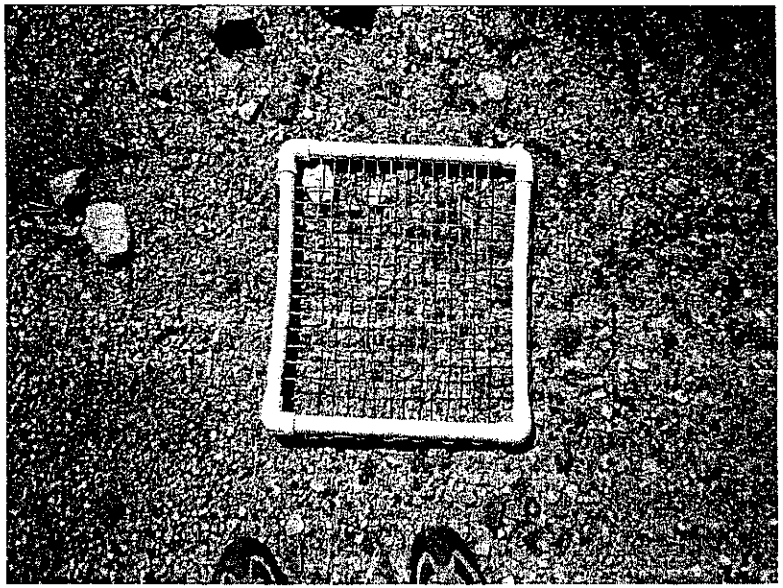
Photograph 41
Left Over Bank, Looking Upstream

P:\82000146\Data Collection\Photos\Unnamed Wash 1\un1photo.cdr

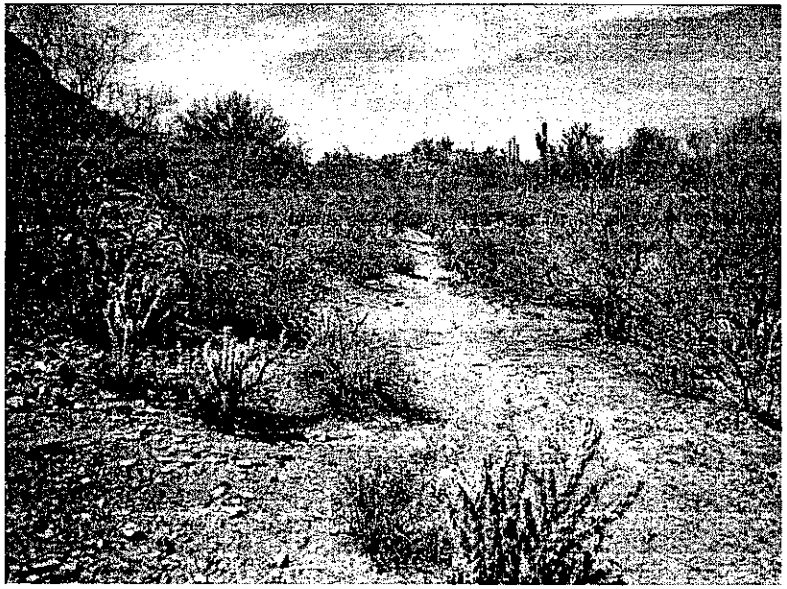
Unnamed Wash 1 Photographs



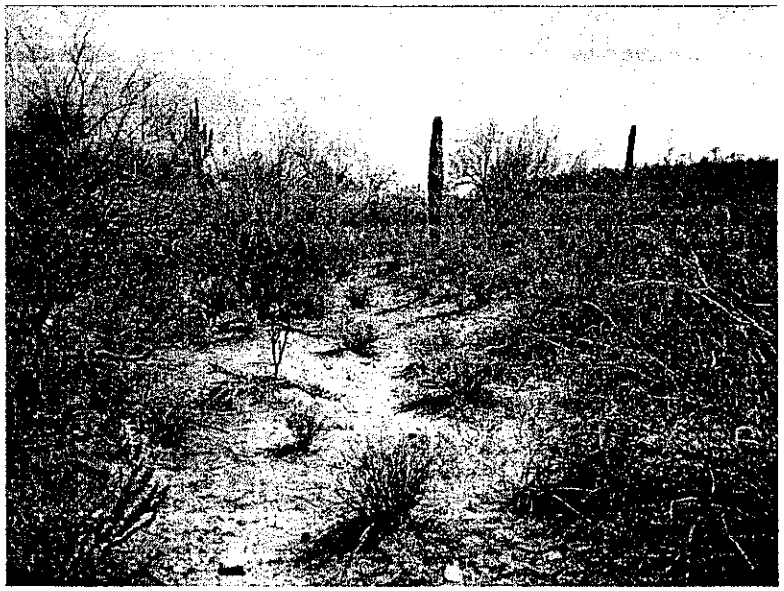
Photograph 42
Left Over Bank, Looking Downstream



Photograph 43
Right Over Bank, Bed Material



Photograph 44
Right Over Bank, Looking Upstream

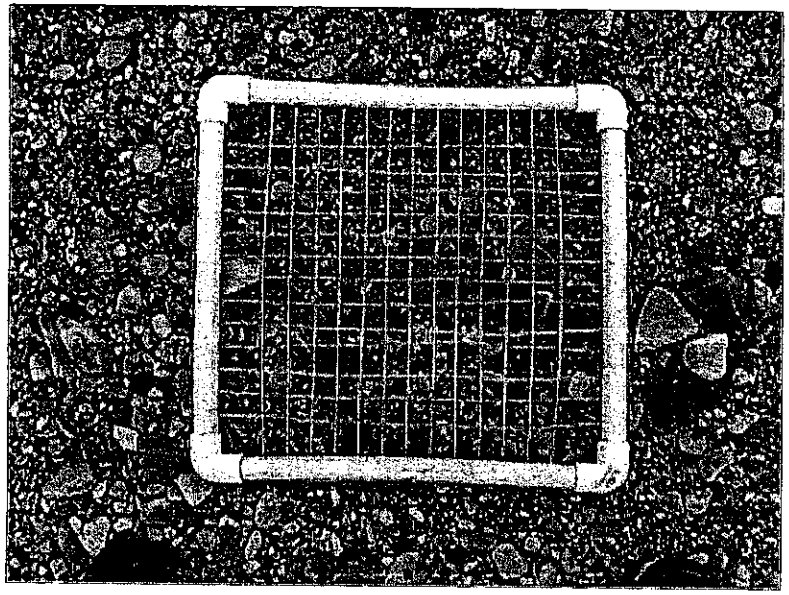


Photograph 45
Right Over Bank, Looking Downstream

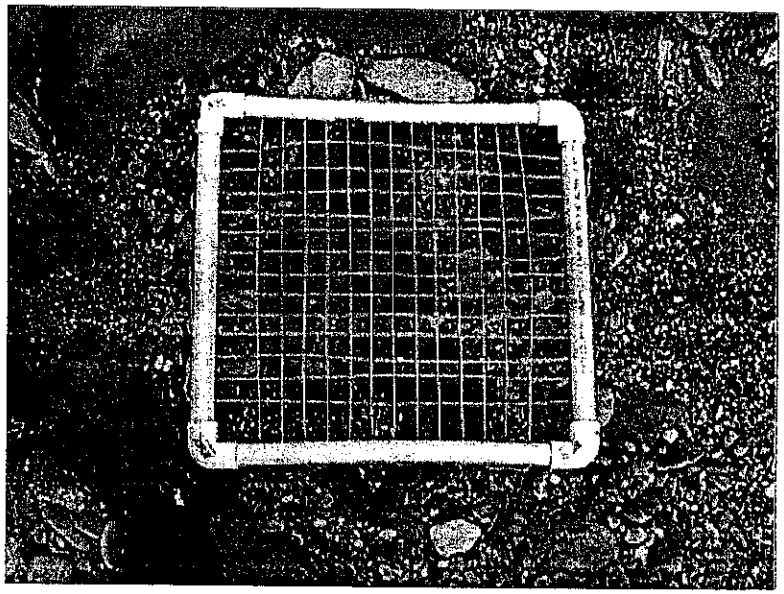
P:\82000146\Data Collection\Photos\Unnamed Wash 1\un1photo.cdr

Selected Field Photographs-Unnamed Wash 2

Unnamed Wash 2 Photographs



Photograph 1
Main Channel, Bed Material



Photograph 4
Main Channel, Bed Material

Photograph 5
Main Channel, Looking Upstream

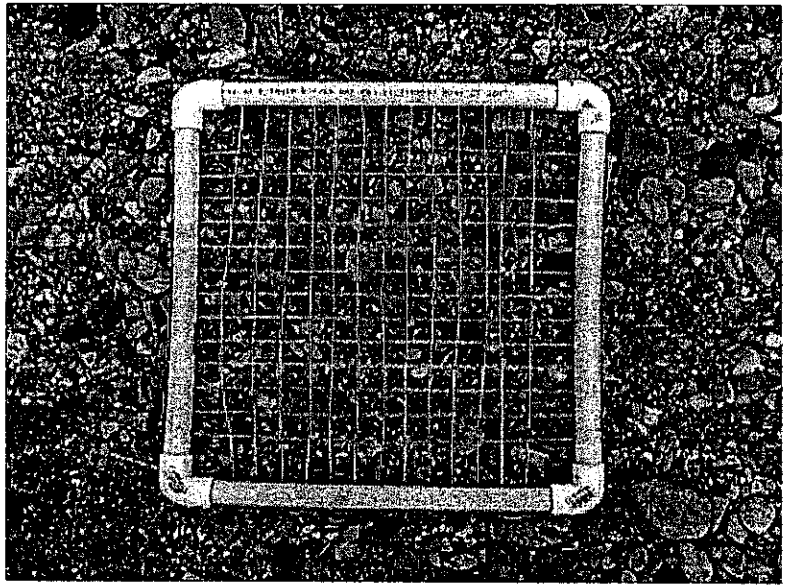
Photograph 6
Main Channel, Looking Downstream

P:\820001461\Data Collection\Photos\Unnamed Wash 2\un2photo.cdr

Unnamed Wash 2 Photographs

Photograph 7
Main Channel, Looking Upstream

Photograph 8
Main Channel, Bed Material

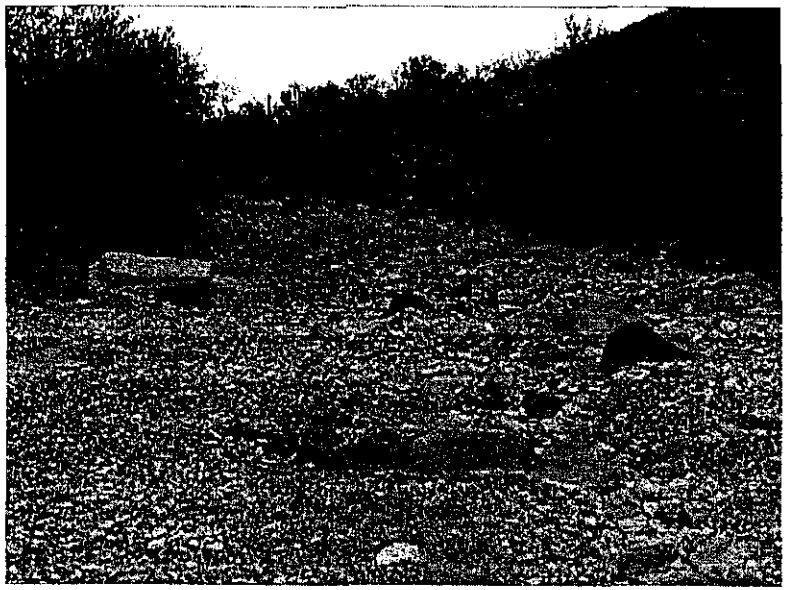


Photograph 9
Main Channel, Bed Material

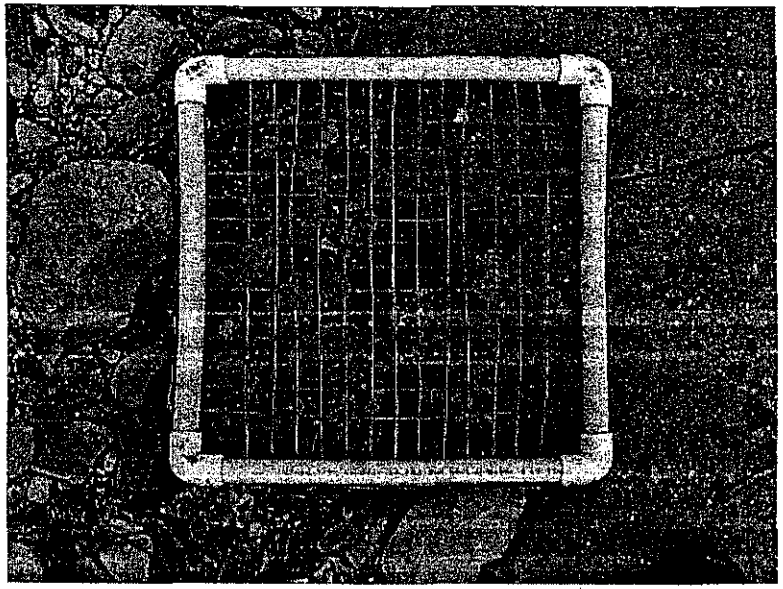
Photograph 10
Main Channel, Looking Upstream

P:\82000146\Data Collection\Photos\Unnamed Wash 2\un2photo.cdr

Unnamed Wash 2 Photographs

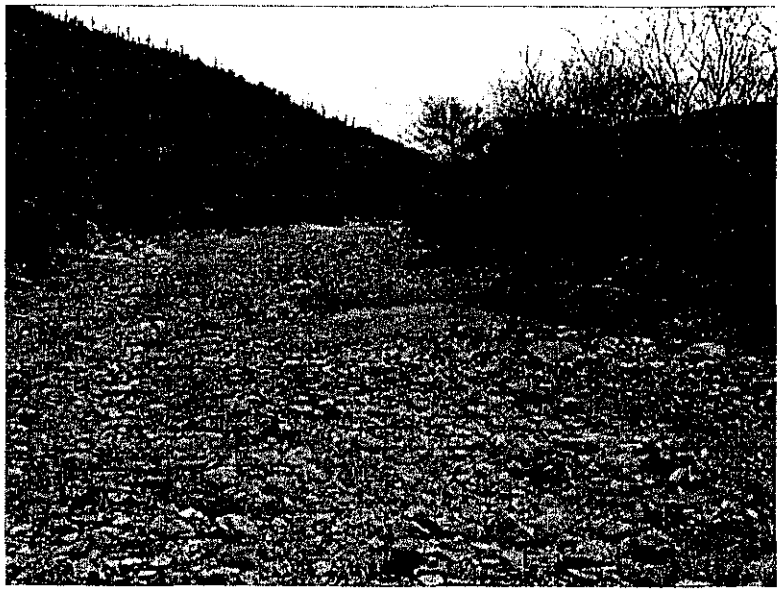


Photograph 11
Main Channel, Looking Downstream



Photograph 12
Main Channel, Bed Material

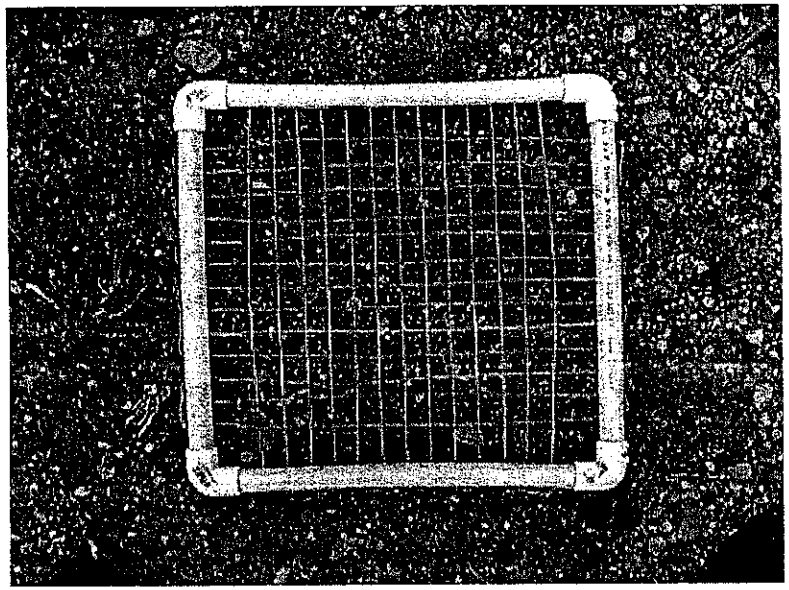
Photograph 13
Main Channel, Looking Upstream



Photograph 14
Right Over Bank, Bed Material

P:\82000146\Data Collection\Photos\Unnamed Wash 2\un2photo.cdr

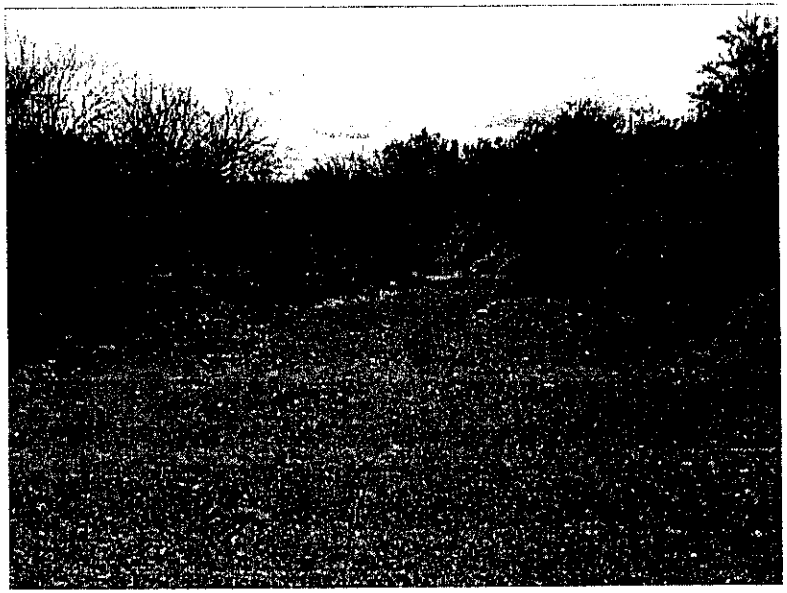
Unnamed Wash 2 Photographs



Photograph 15
Right Over Bank, Bed Material

Photograph 16
Right Over Bank, Looking Upstream

Photograph 17
Right Over Bank, Looking Downstream

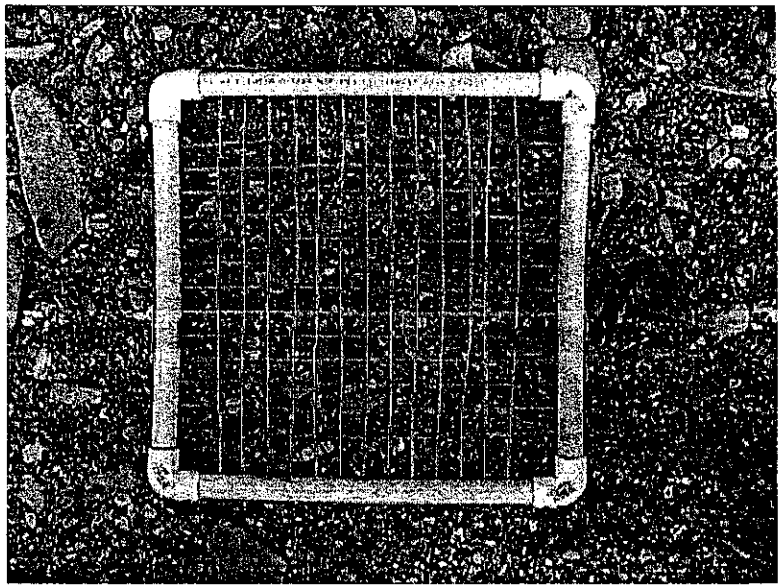


Photograph 20
Main Channel, Looking Upstream

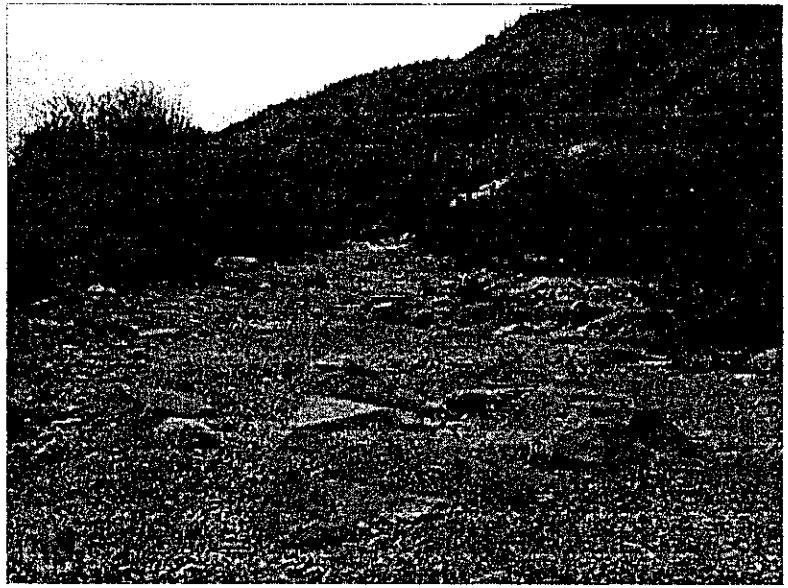
P:\82000146\Data Collection\Photos\Unnamed Wash 2\un2photo.cdr

Unnamed Wash 2 Photographs

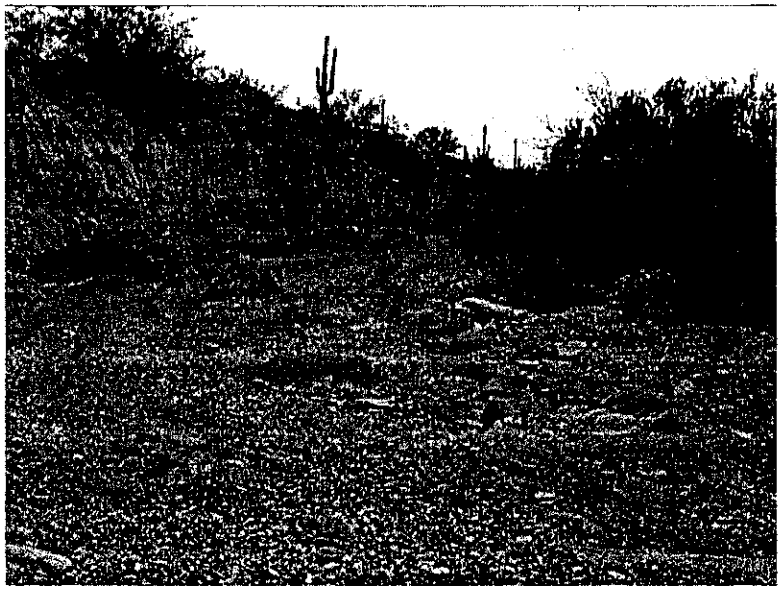
Photograph 21
Right Over Bank, Looking Upstream



Photograph 23
Main Channel, Bed Material



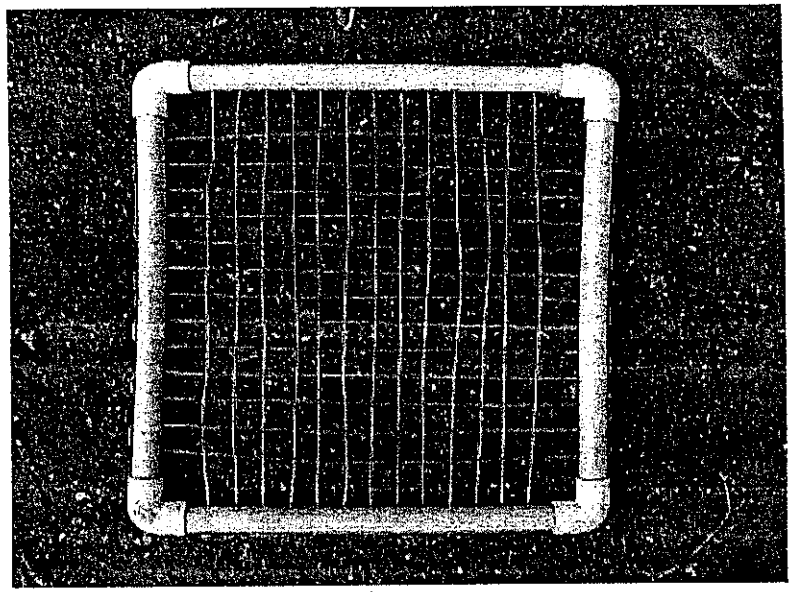
Photograph 24
Main Channel, Looking Upstream



Photograph 25
Main Channel, Looking Downstream

P:\82000146\Data Collection\Photos\Unnamed Wash 2\un2photo.cdr

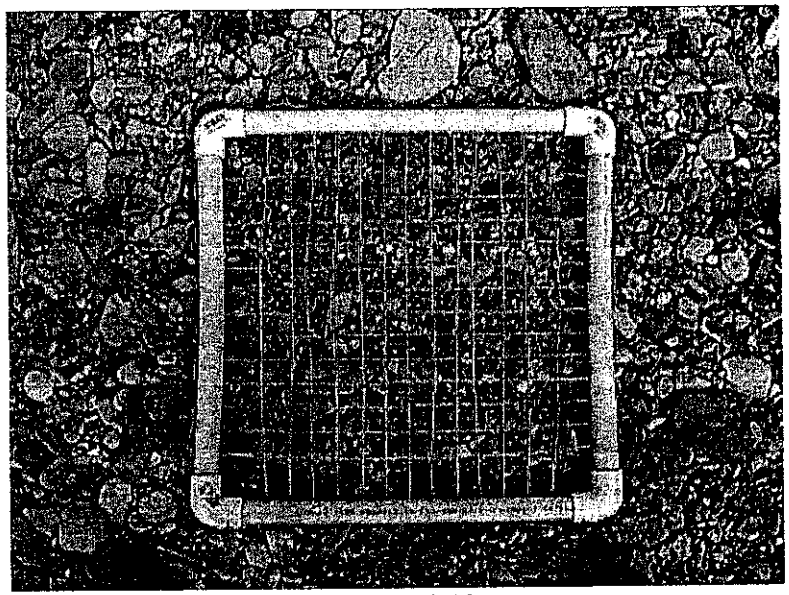
Unnamed Wash 2 Photographs



Photograph 26
Right Over Bank, Bed Material

Photograph 27
Right Over Bank, Looking Upstream

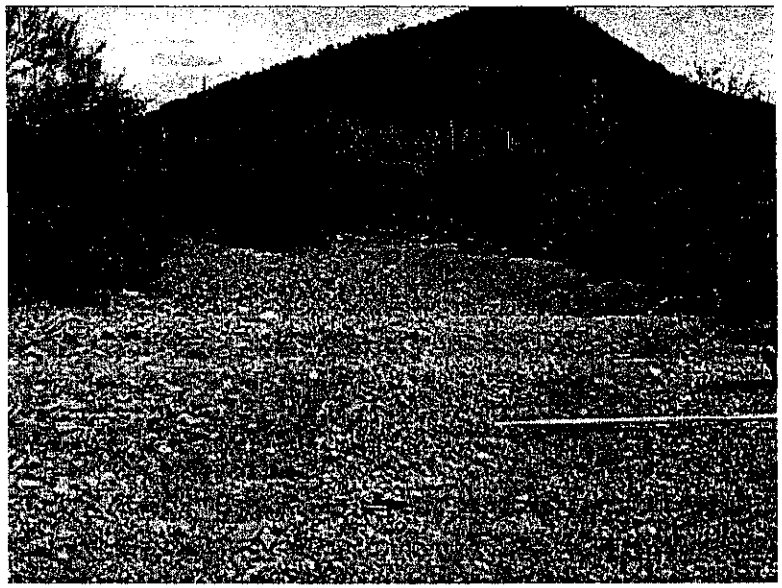
Photograph 28
Right Over Bank, Looking Downstream



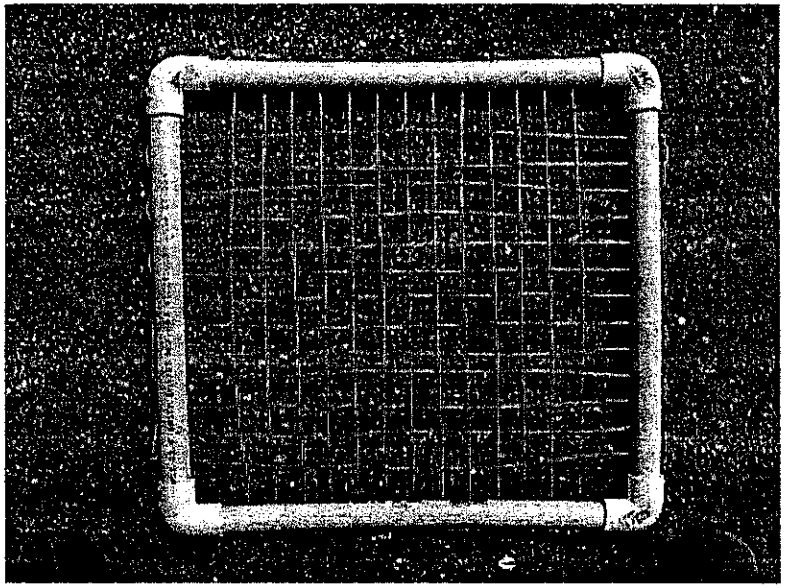
Photograph 29
Main Channel, Bed Material

Unnamed Wash 2 Photographs

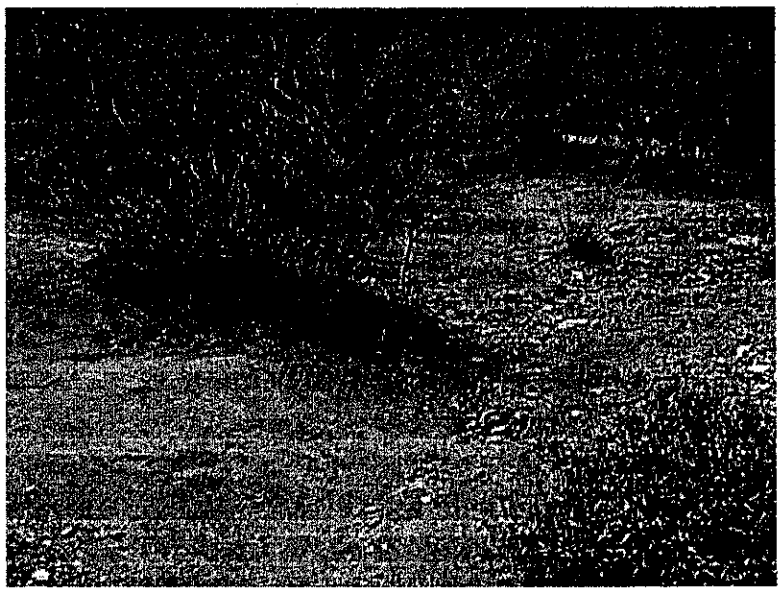
Photograph 30
Main Channel, Looking Upstream



Photograph 31
Main Channel, Looking Downstream

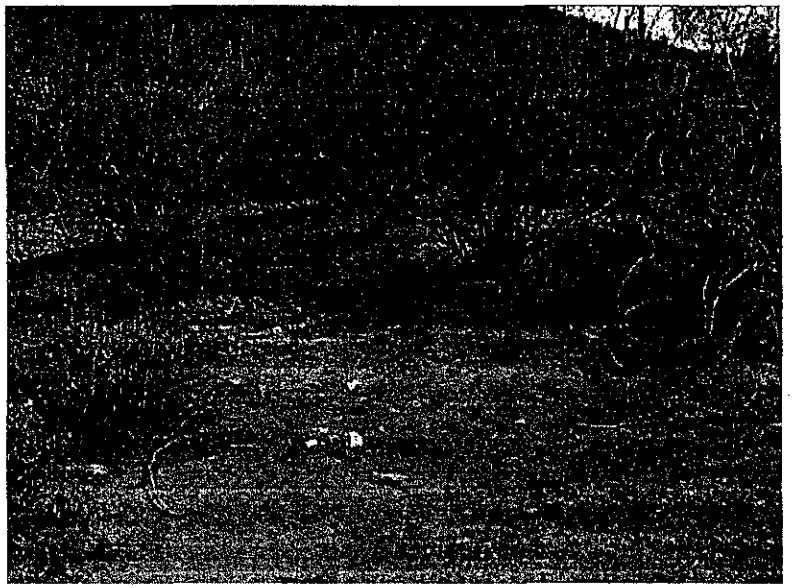


Photograph 32
Left Over Bank, Bed Material

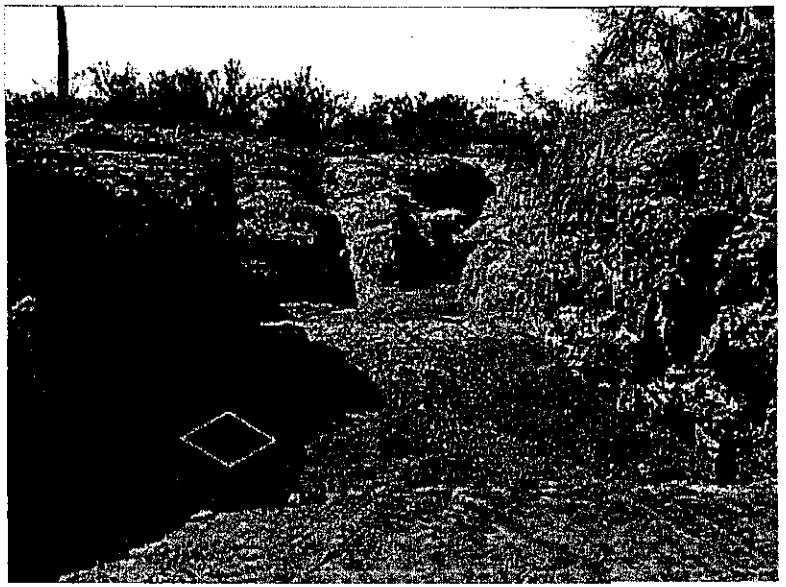


Photograph 33
Left Over Bank, Looking Upstream

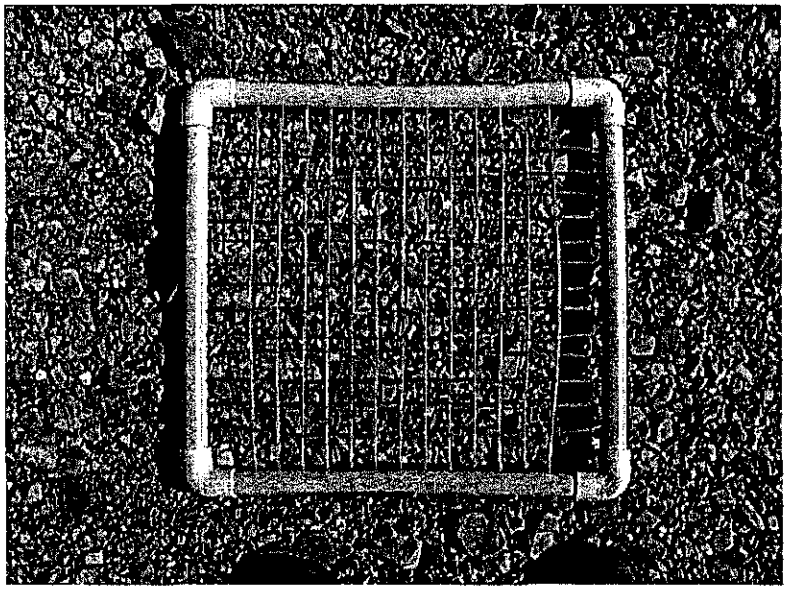
Unnamed Wash 2 Photographs



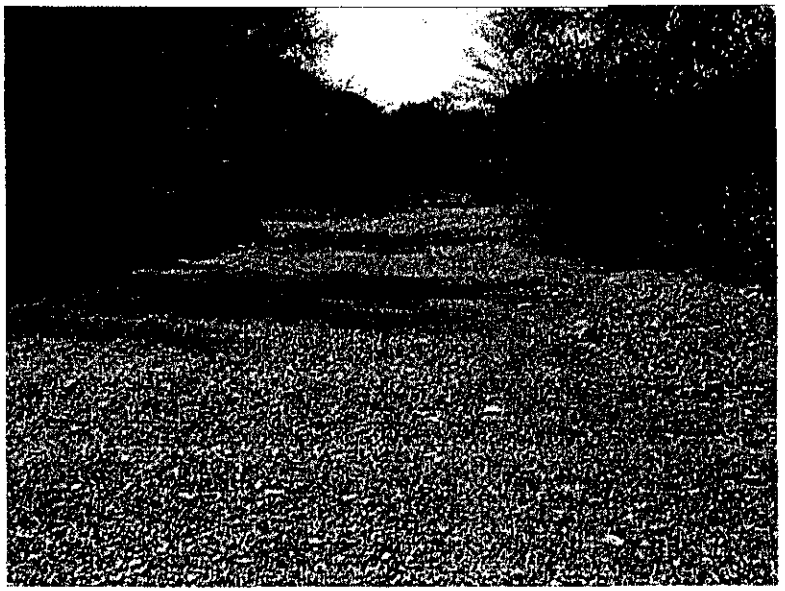
Photograph 34
Left Over Bank, Looking Downstream



Photograph 35
Main Channel, Looking Upstream

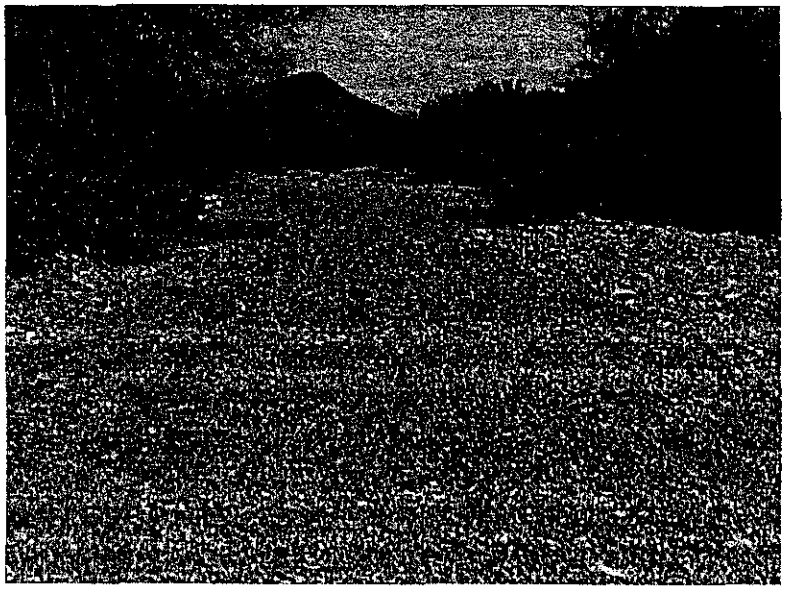


Photograph 36
Main Channel, Bed Material

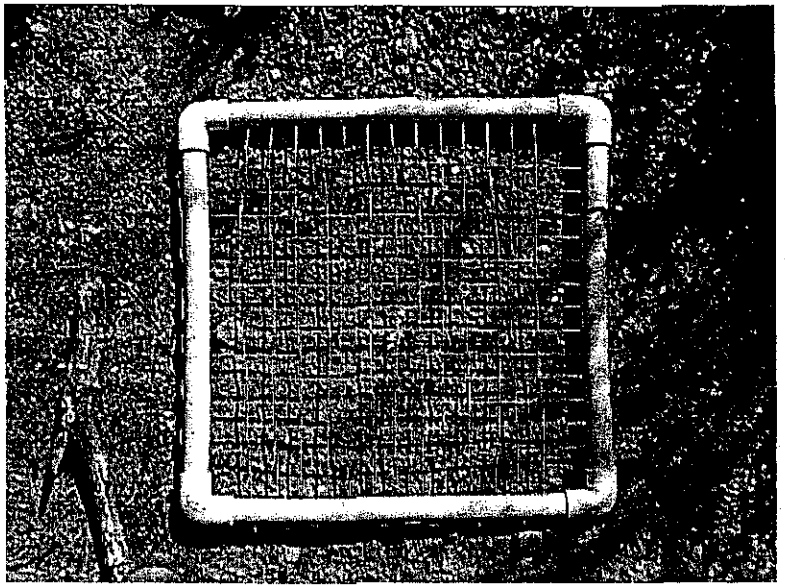


Photograph 37
Right Over Bank, Bed Material

Unnamed Wash 2 Photographs



Photograph 38
Main Channel, Looking Downstream



Photograph 39
Left Over Bank, Bed Material

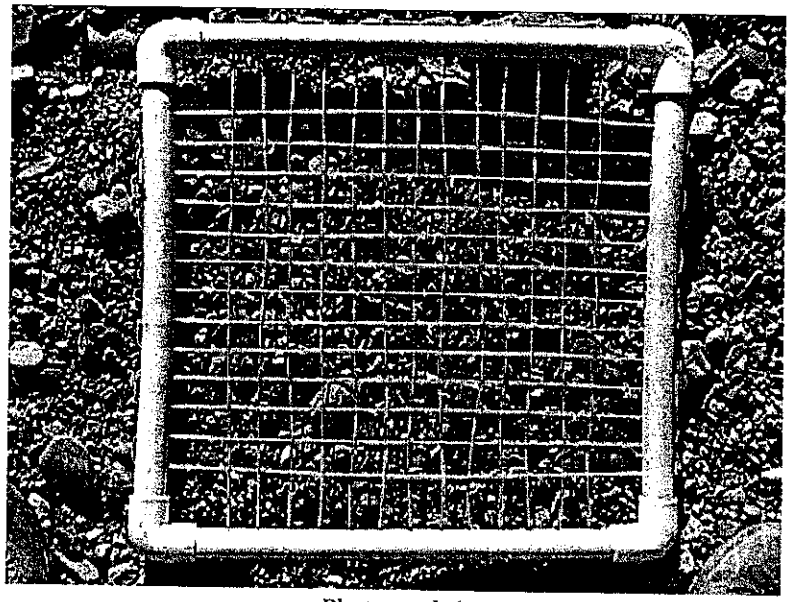
Photograph 40
Left Over Bank, Looking Upstream

Photograph 41
Left Over Bank, Looking Downstream

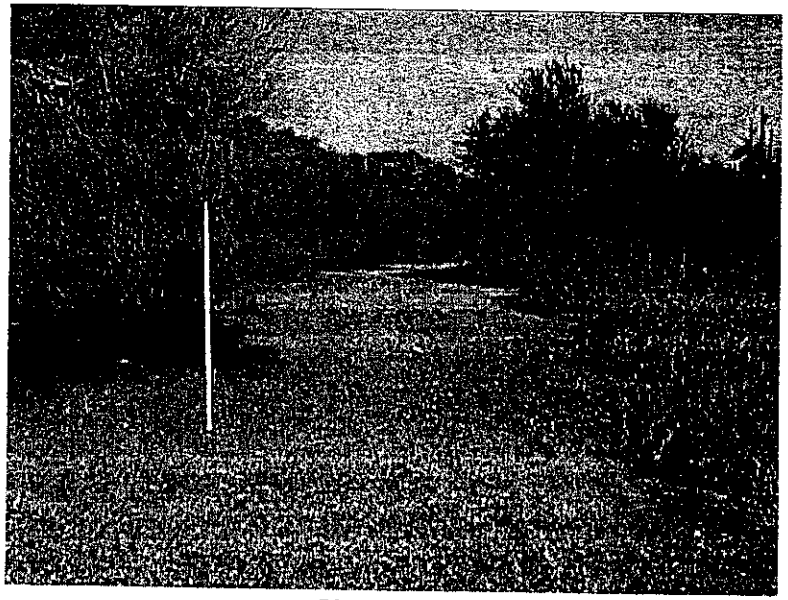
P:\820001461\Data Collection\Photos\Unnamed Wash 2\un2photo.cdr

Selected Field Photographs-Unnamed Wash 3

Unnamed Wash 3 Photographs

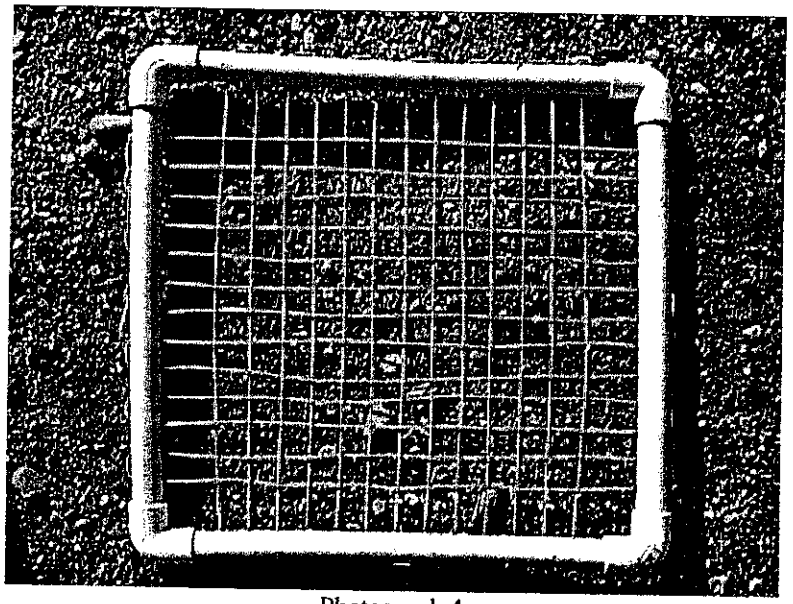


Photograph 1
Main Channel, Bed Material



Photograph 2
Main Channel, Looking Upstream

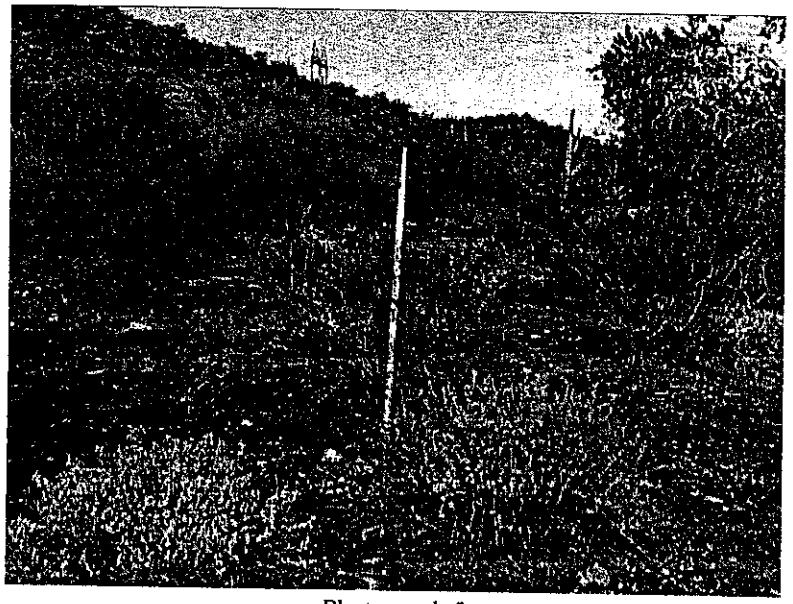
Photograph 3
Main Channel, Looking Downstream



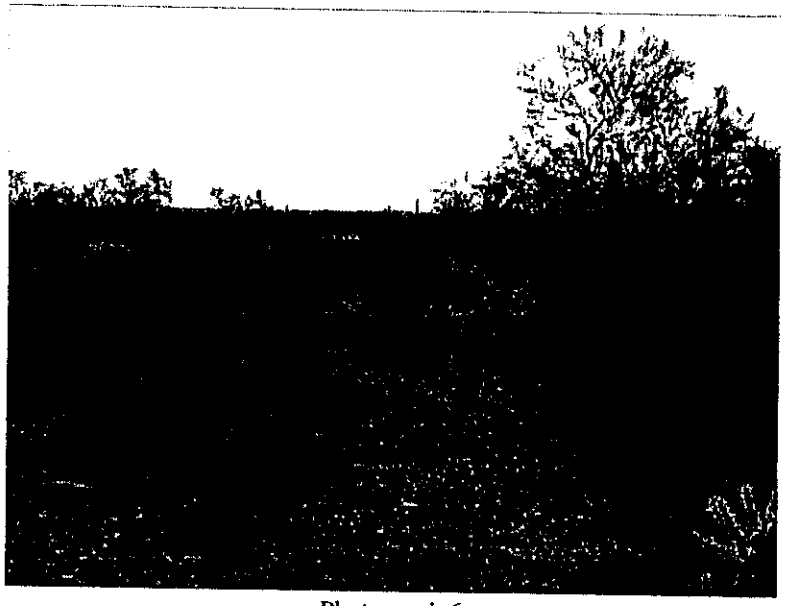
Photograph 4
Left Over Bank, Bed Material

P:\82000146\Data Collection\Photos\Unnamed Wash 3\unphoto3.cdr

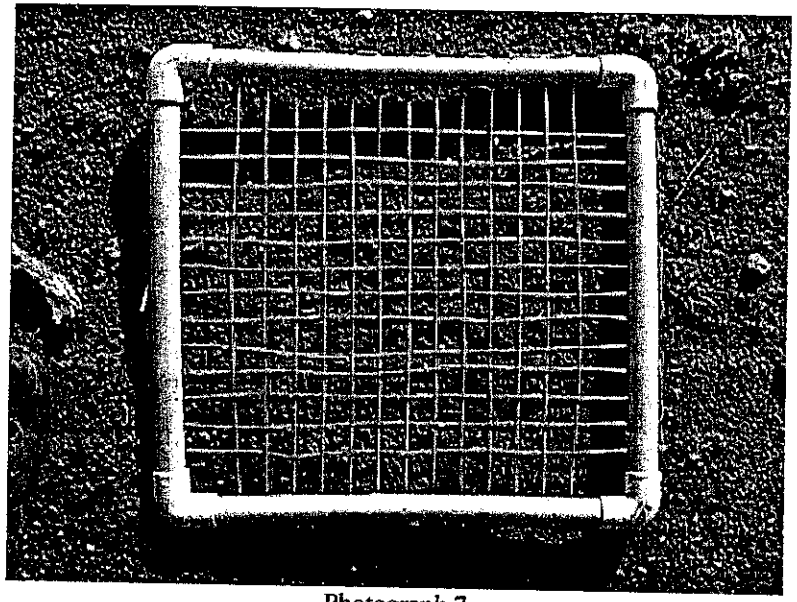
Unnamed Wash 3 Photographs



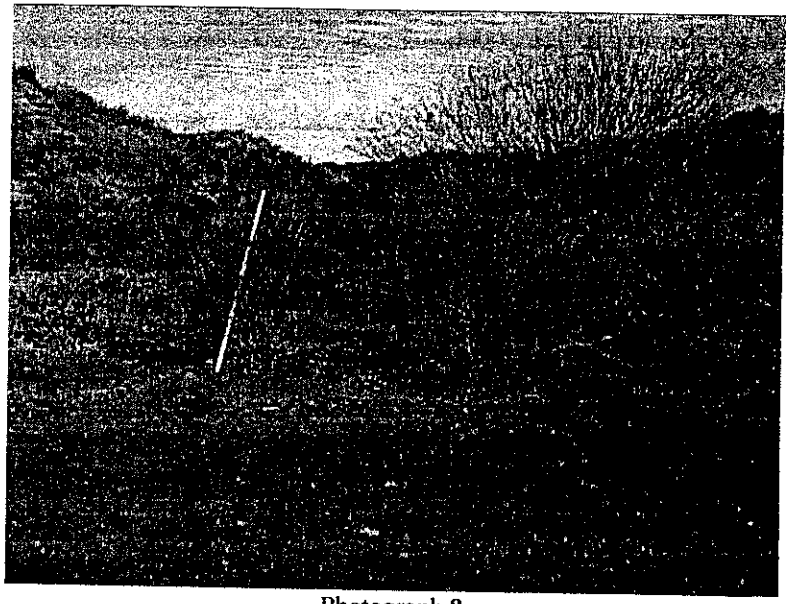
Photograph 5
Left Over Bank, Looking Upstream



Photograph 6
Left Over Bank, Looking Downstream



Photograph 7
Right Over Bank, Bed Material

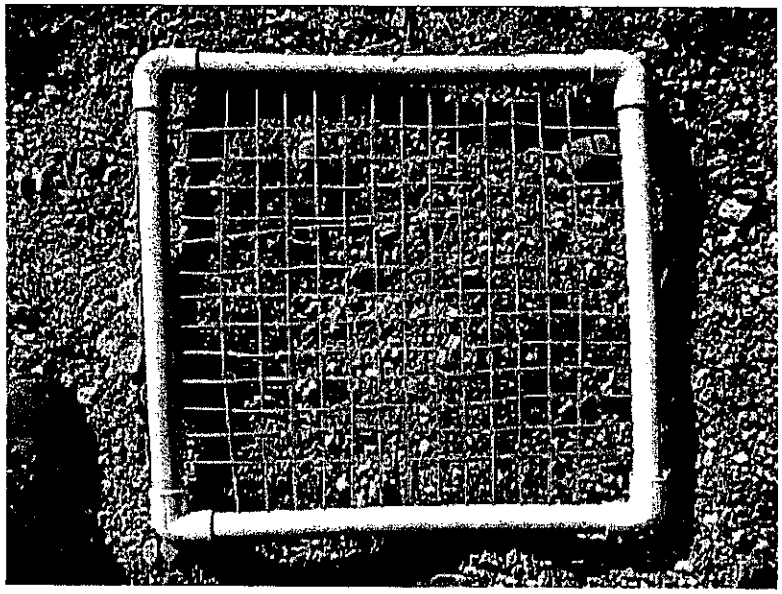


Photograph 8
Right Over Bank, Looking Upstream

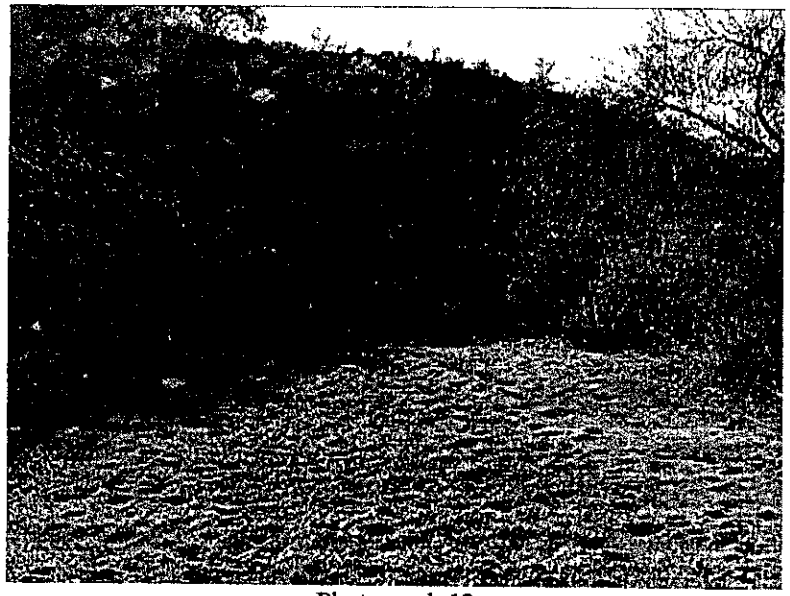
P:\82000146\Data Collection\Photos\Unnamed Wash 3\unphoto3.cdr

Unnamed Wash 3 Photographs

Photograph 9
Right Over Bank, Looking Downstream



Photograph 11
Main Channel, Bed Material

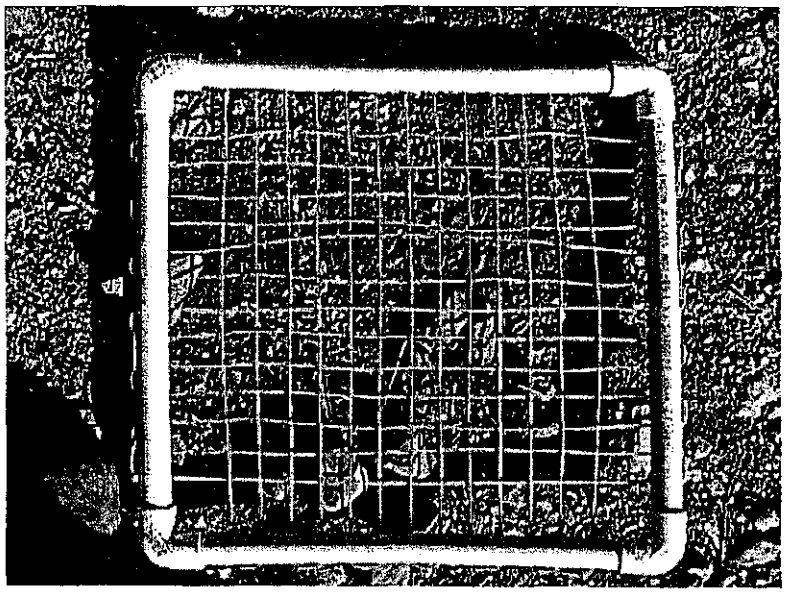


Photograph 12
Main Channel, Looking Upstream

Photograph 13
Main Channel, Looking Downstream

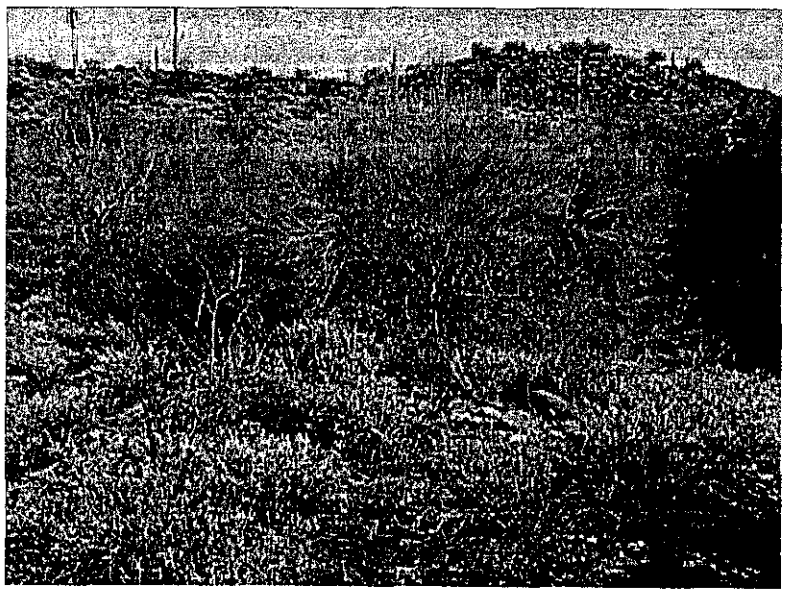
P:\82000146\Data Collection\Photos\Unnamed Wash 3\unphoto3.cdr

Unnamed Wash 3 Photographs

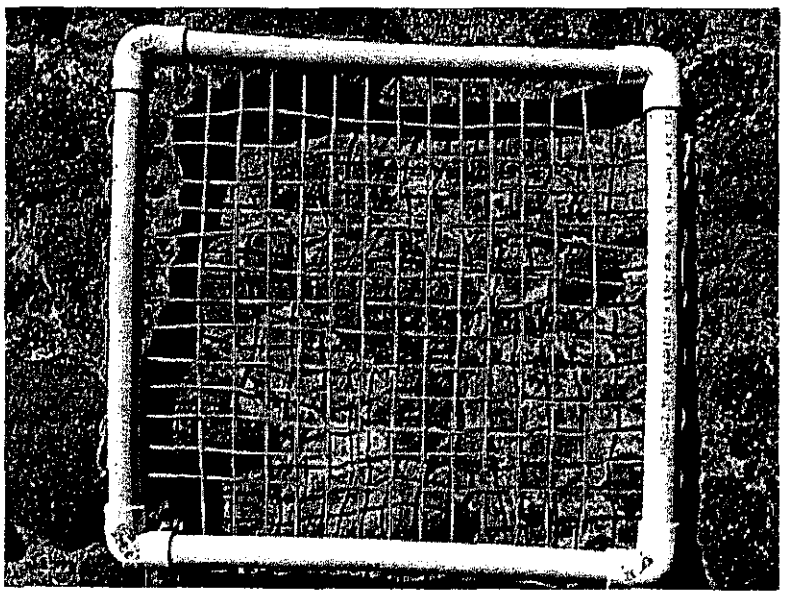


Photograph 14
Left Over Bank, Bed Material

Photograph 15
Left Over Bank, Looking Upstream



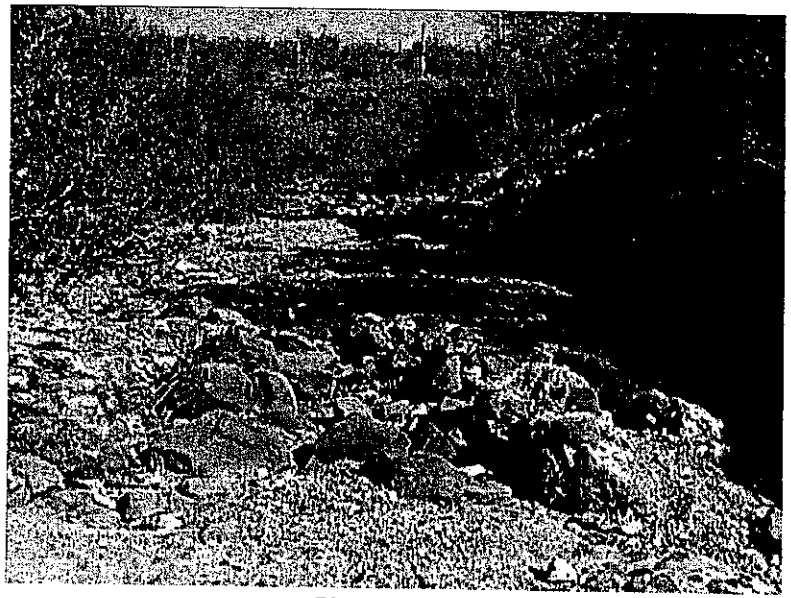
Photograph 16
Left Over Bank, Looking Downstream



Photograph 19
Main Channel, Bed Material

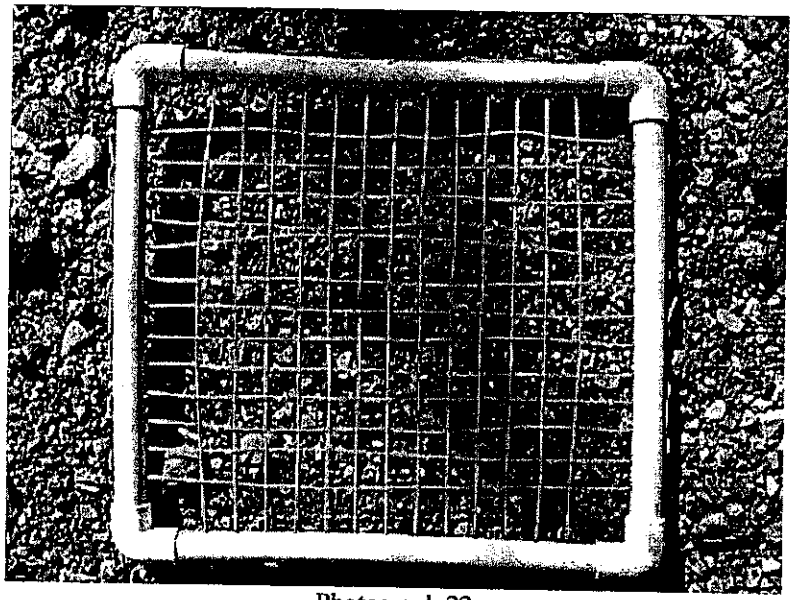
P:\82000146\Data Collection\Photos\Unnamed Wash 3\unphoto3.cdr

Unnamed Wash 3 Photographs



Photograph 20
Main Channel, Looking Upstream

Photograph 21
Main Channel, Looking Downstream



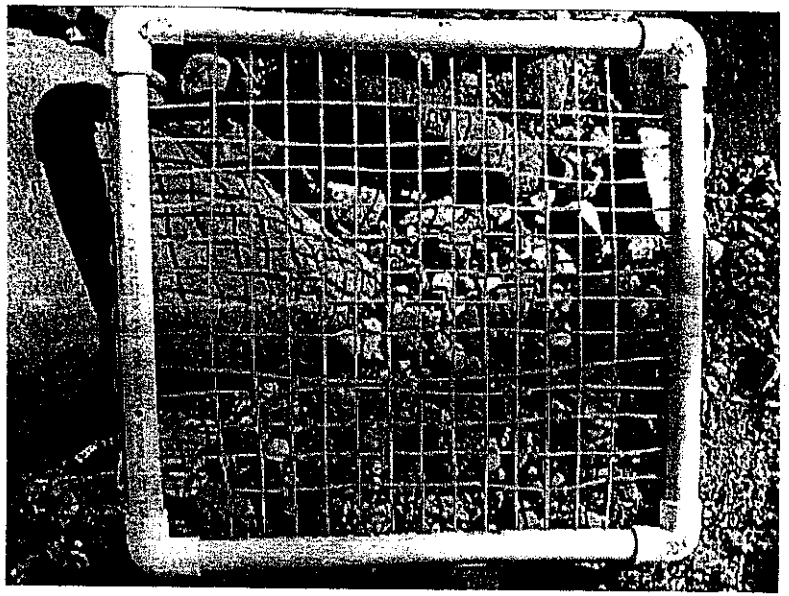
Photograph 22
Right Over Bank, Bed Material

Photograph 23
Right Over Bank, Looking Upstream

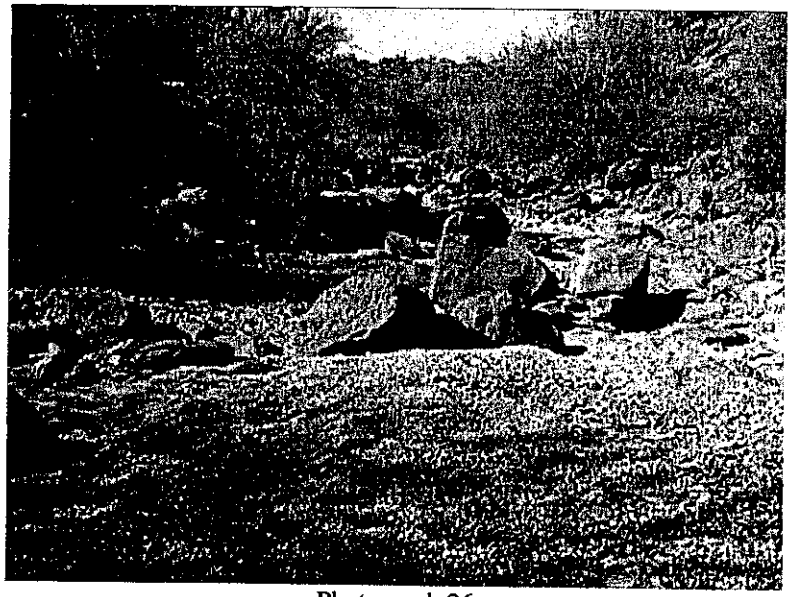
P:\82000146\Data Collection\Photos\Unnamed Wash 3\unphoto3.cdr

Unnamed Wash 3 Photographs

Photograph 24
Right Over Bank, Looking Downstream



Photograph 25
Main Channel, Bed Material

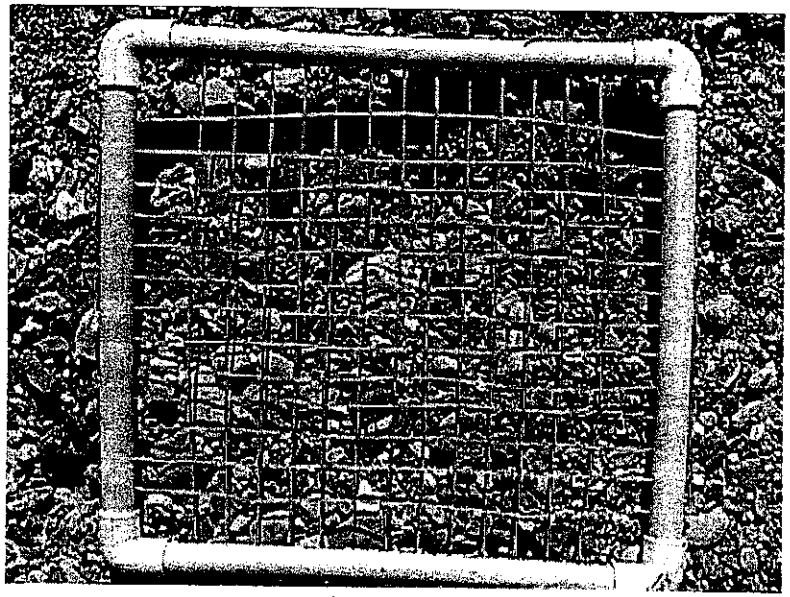


Photograph 26
Main Channel, Looking Upstream

Photograph 27
Main Channel, Looking Downstream

P:\82000146\Data Collection\Photos\Unnamed Wash 3\unphoto3.cdr

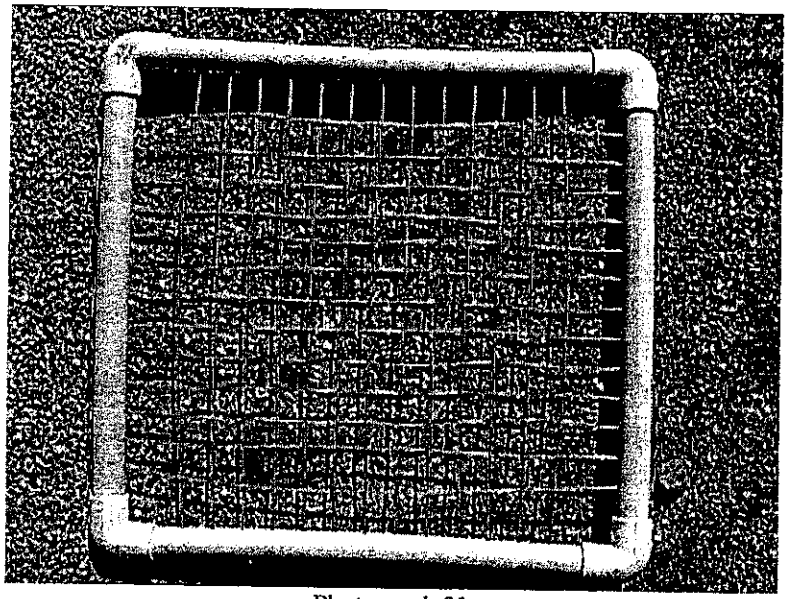
Unnamed Wash 3 Photographs



Photograph 28
Main Channel, Bed Material

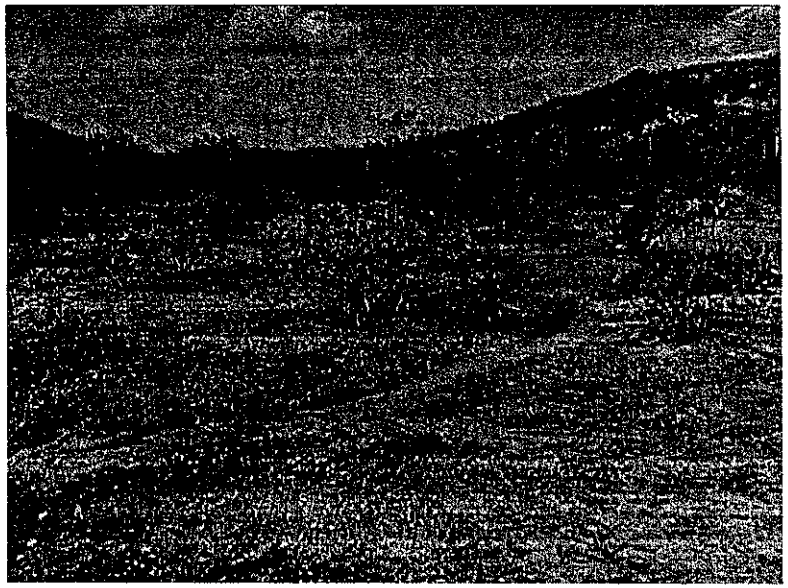
Photograph 29
Main Channel, Looking Upstream

Photograph 30
Main Channel, Looking Downstream

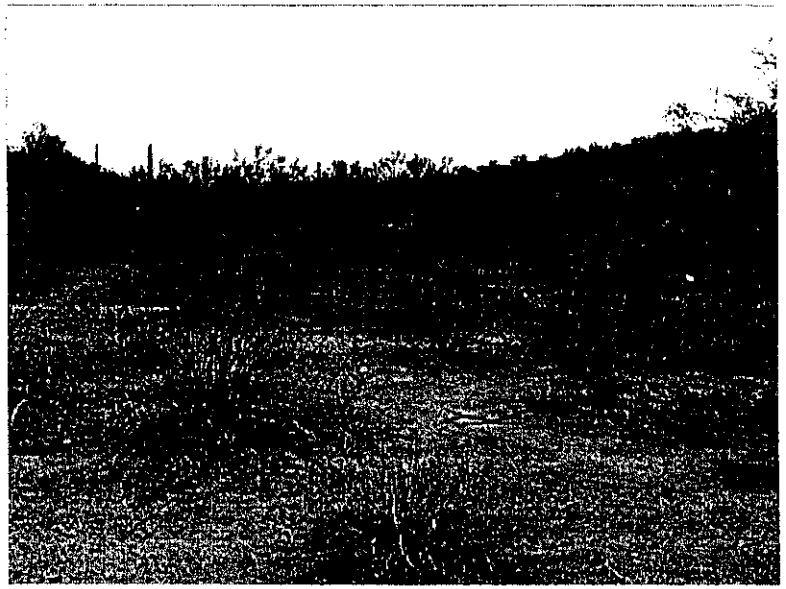


Photograph 31
Left Over Bank, Bed Material

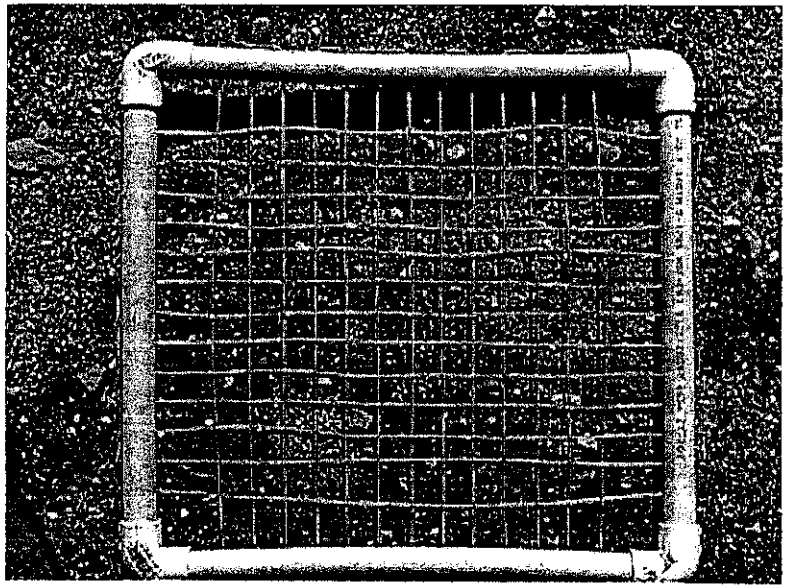
Unnamed Wash 3 Photographs



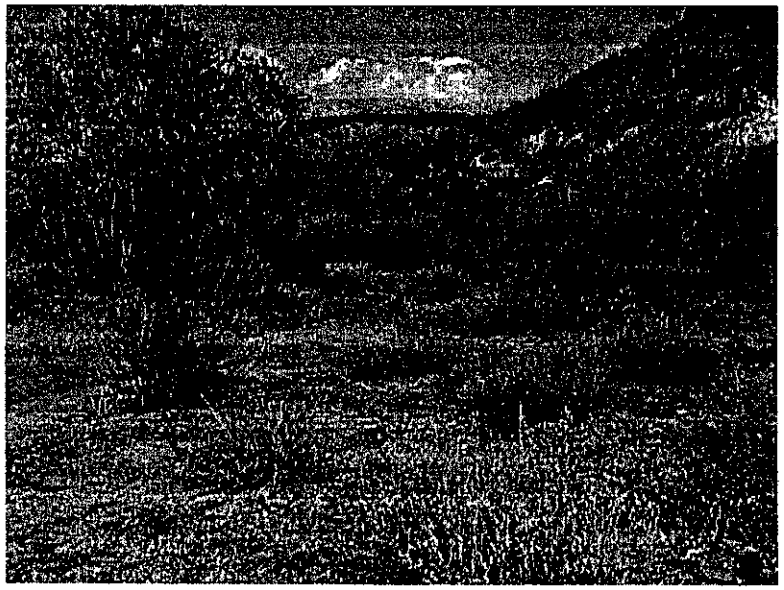
Photograph 32
Left Over Bank, Looking Upstream



Photograph 33
Left Over Bank, Looking Downstream

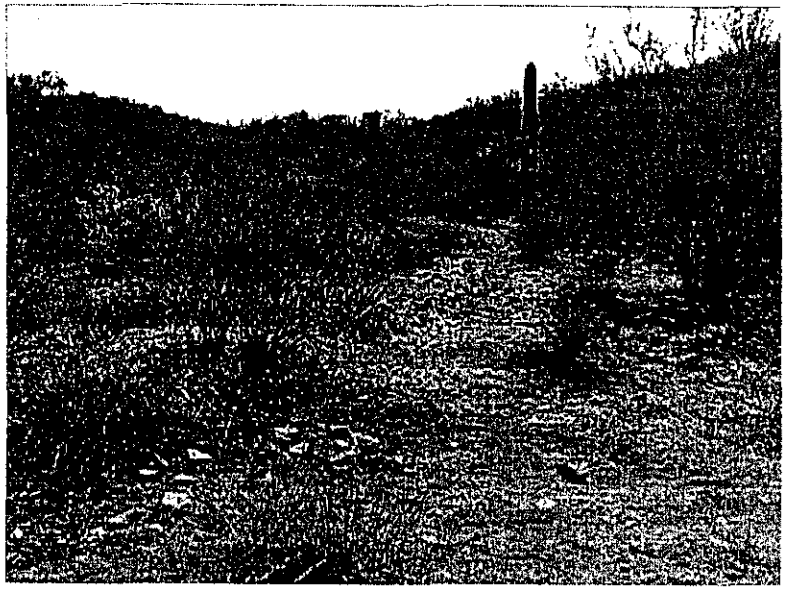


Photograph 34
Right Over Bank, Bed Material

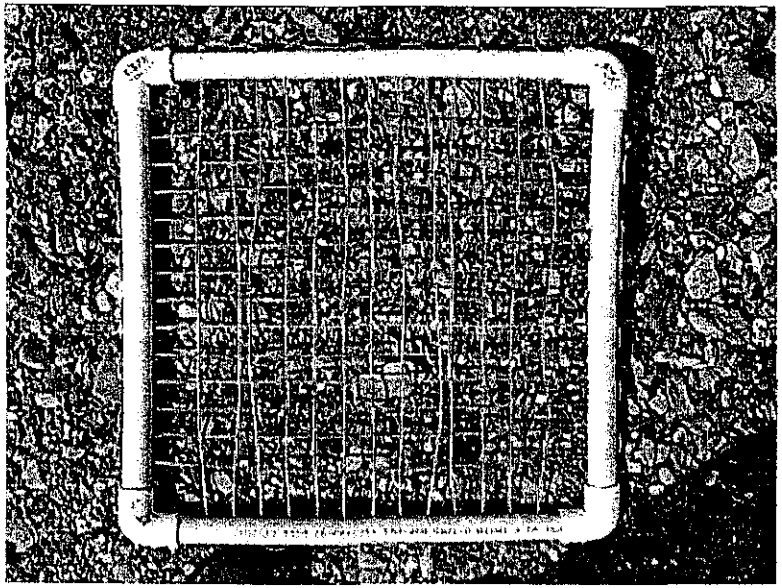


Photograph 35
Right Over Bank, Looking Upstream

Unnamed Wash 3 Photographs



Photograph 36
Right Over Bank, Looking Downstream



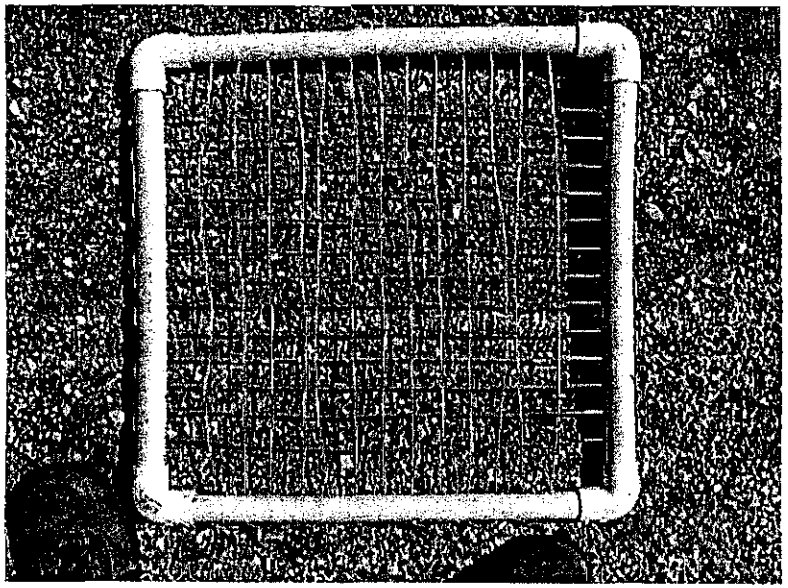
Photograph 37
Main Channel, Bed Material

Photograph 38
Main Channel, Looking Upstream

Photograph 39
Main Channel, Looking Downstream

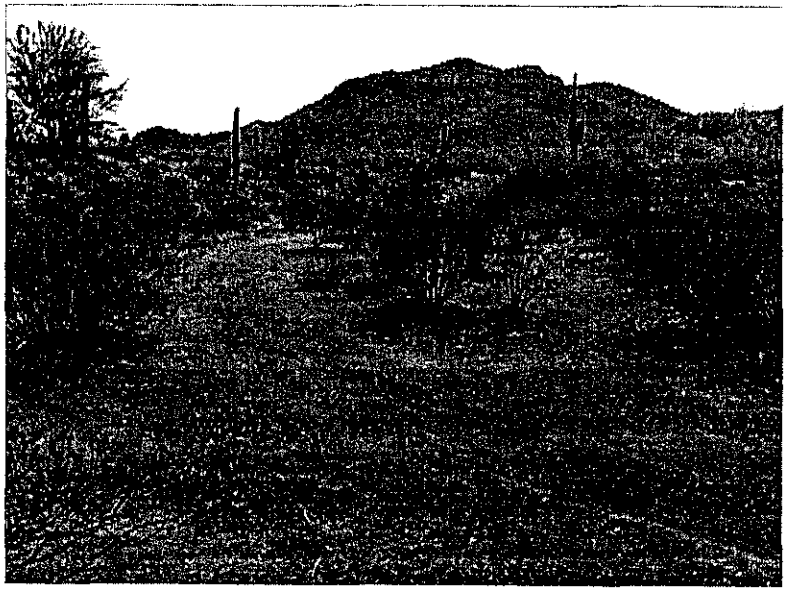
P:\82000146\Data Collection\Photos\Unnamed Wash 3\unphoto3.cdr

Unnamed Wash 3 Photographs

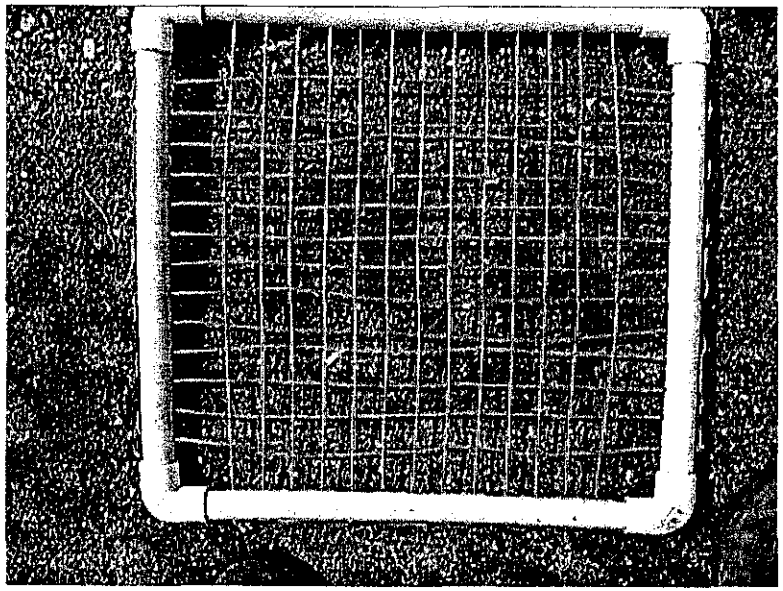


Photograph 40
Left Over Bank, Bed Material

Photograph 41
Left Over Bank, Looking Upstream

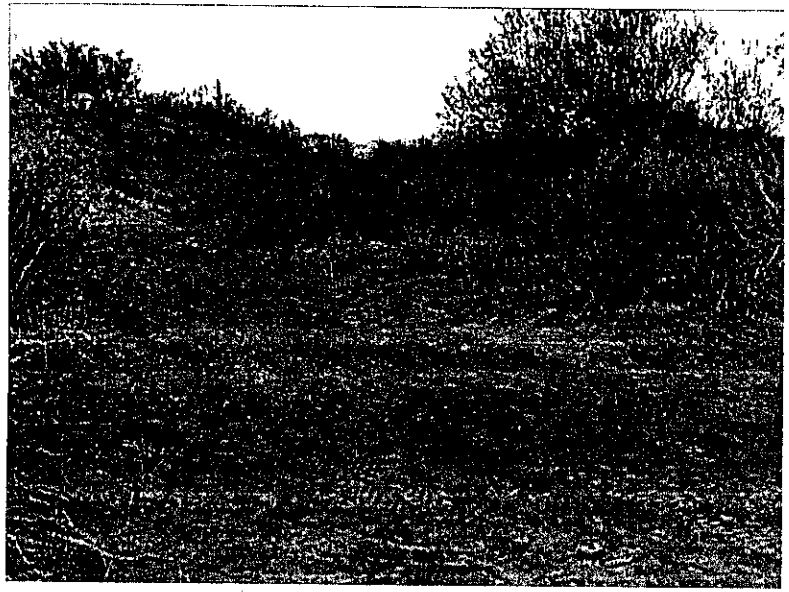


Photograph 42
Left Over Bank, Looking Downstream

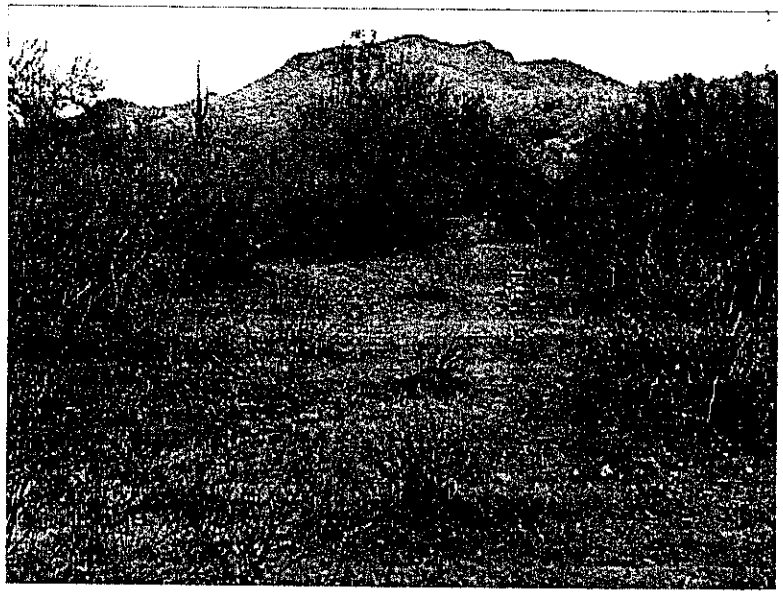


Photograph 43
Right Over Bank, Bed Material

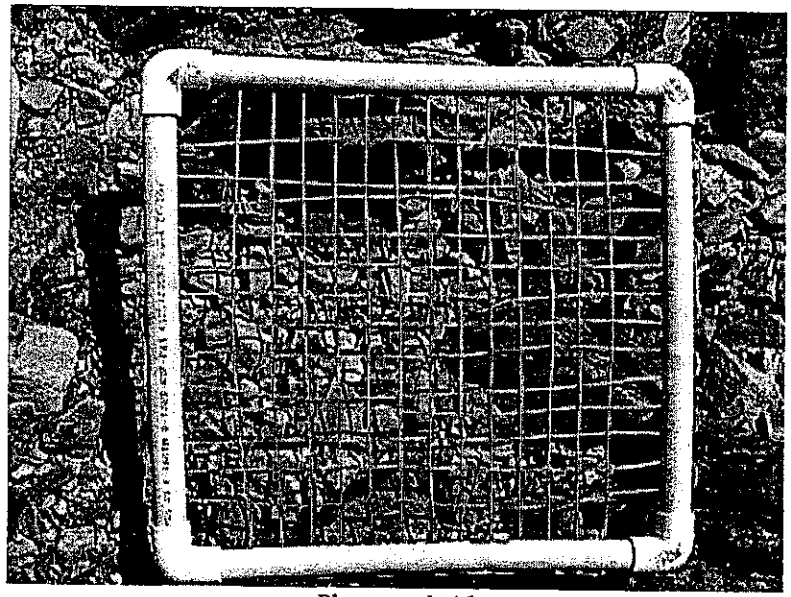
Unnamed Wash 3 Photographs



Photograph 44
Right Over Bank, Looking Upstream



Photograph 45
Right Over Bank, Looking Downstream



Photograph 46
Main Channel, Bed Material

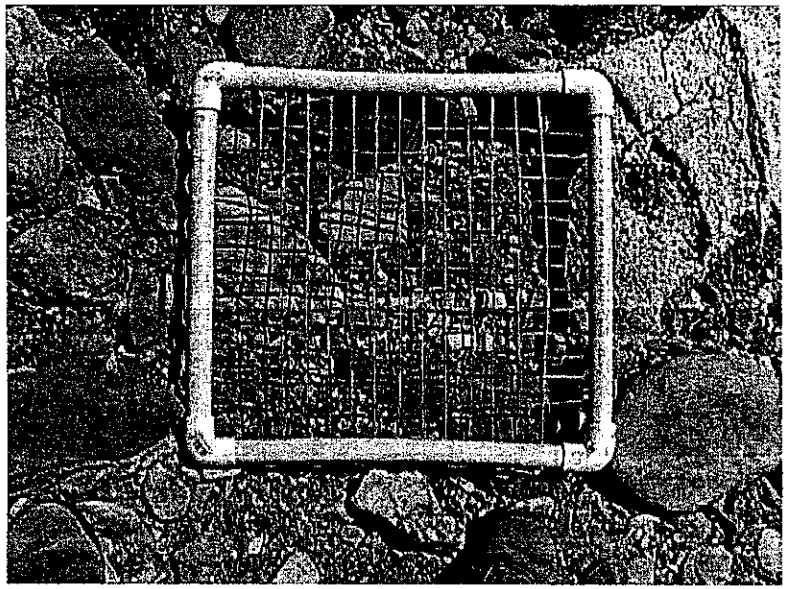
Photograph 47
Main Channel, Looking Upstream

Unnamed Wash 3 Photographs

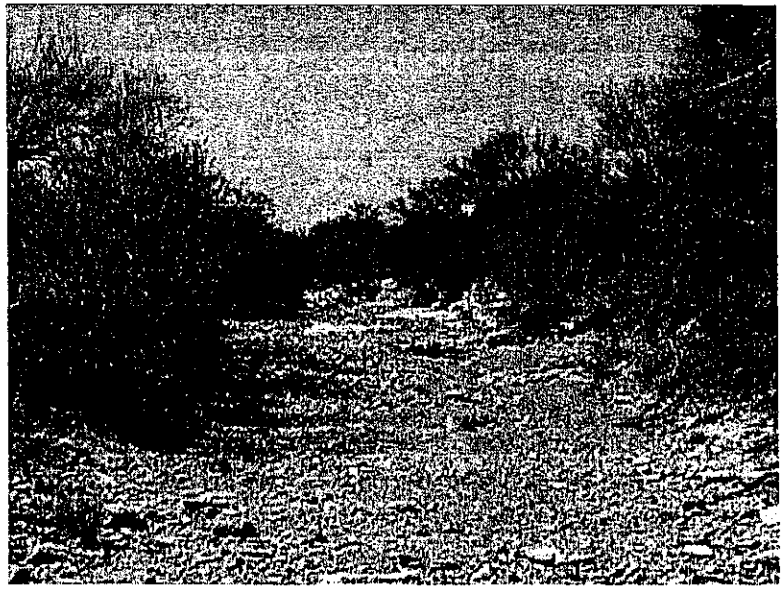
Photograph 48
Main Channel, Looking Downstream

Selected Field Photographs-Various Approximate Method Reaches

Unnamed Wash 1 Photographs (Approximate Methods)



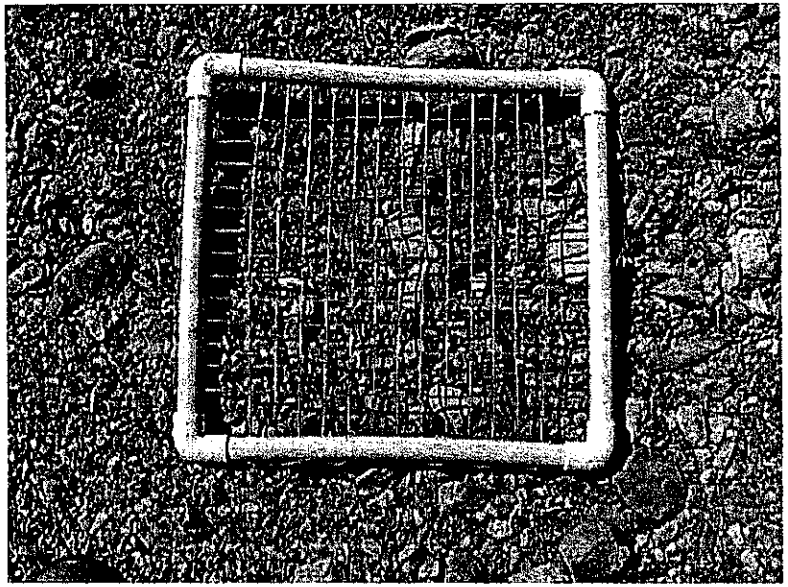
Photograph 46
Main Channel, Bed Material
Tributary 1 Reach



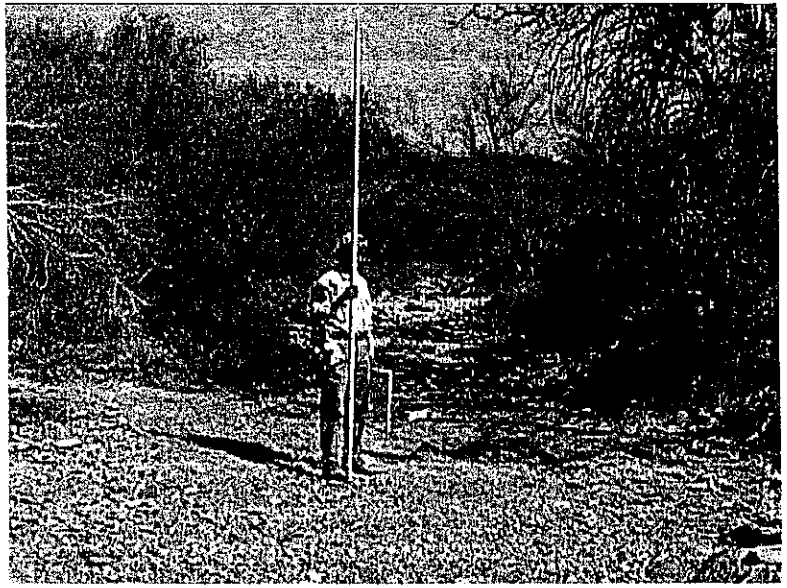
Photograph 47
Main Channel, Looking Upstream
Tributary 1 Reach

Photograph 48
Main Channel, Looking Downstream
Tributary 1 Reach

Unnamed Wash 2 Photographs (Approximate Methods)

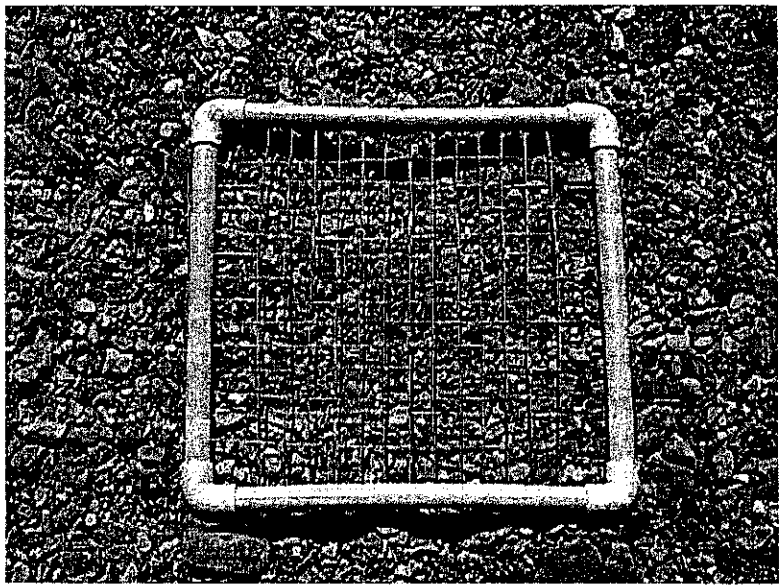


Photograph 42
Main Channel, Bed Material
Approximate Method Reach



Photograph 43
Main Channel, Looking Upstream
Approximate Method Reach

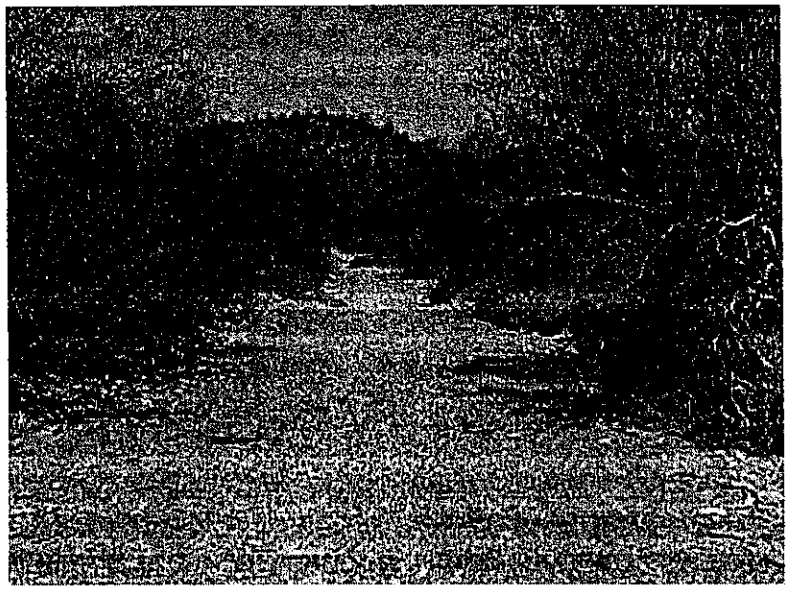
Photograph 44
Main Channel, Looking Downstream
Approximate Method Reach



Photograph 45
Main Channel, Bed Material
Approximate Method Reach

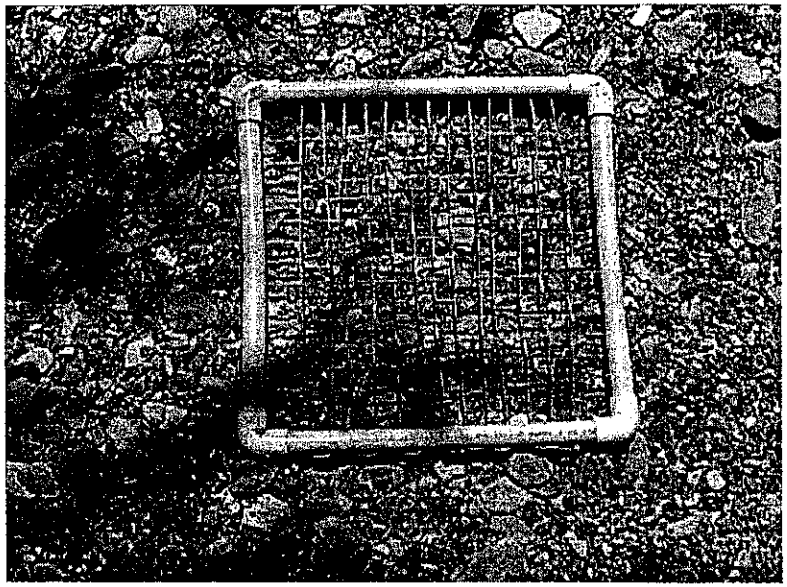
P:\82000146\Data Collection\Photos\Approximate Methods\apmthd146.cdr

Unnamed Wash 2 Photographs (Approximate Methods)

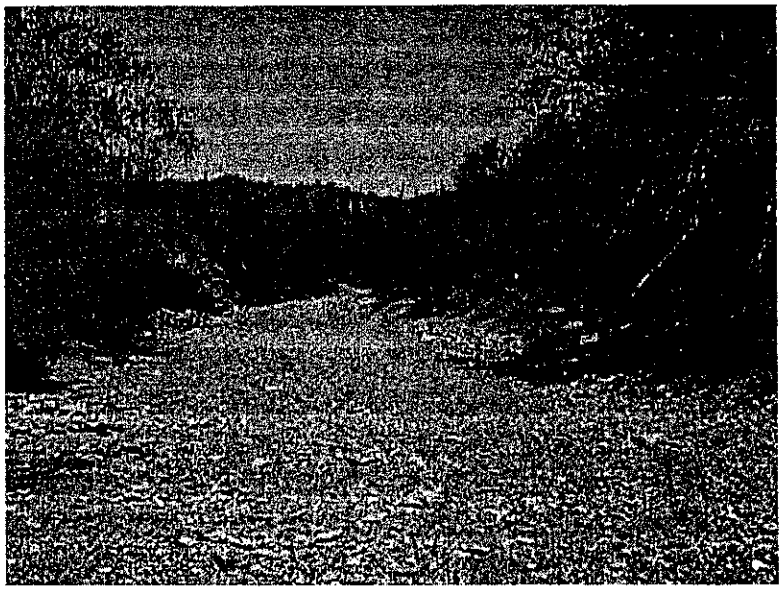


Photograph 46
Main Channel, Looking Upstream
Approximate Method Reach

Photograph 47
Main Channel, Looking Downstream
Approximate Method Reach



Photograph 48
Main Channel, Bed Material
Tributary 2 Reach



Photograph 49
Main Channel, Looking Upstream
Tributary 2 Reach

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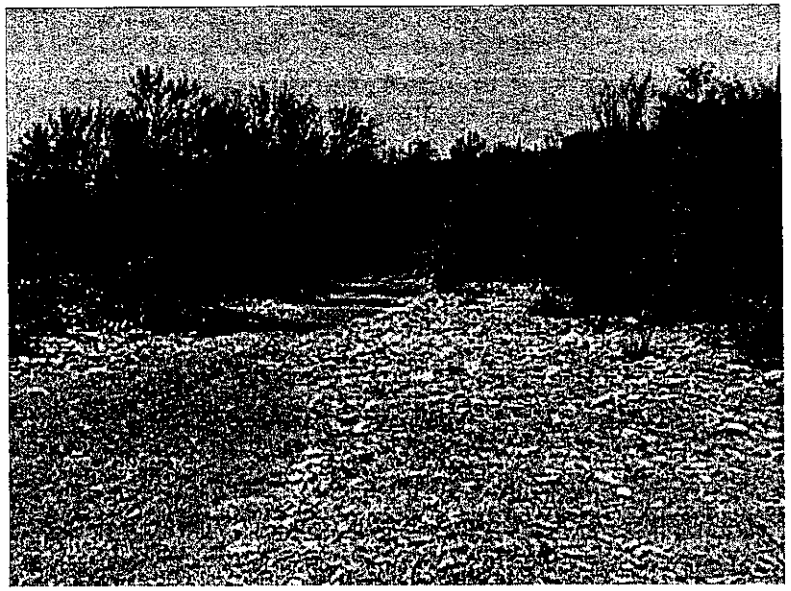
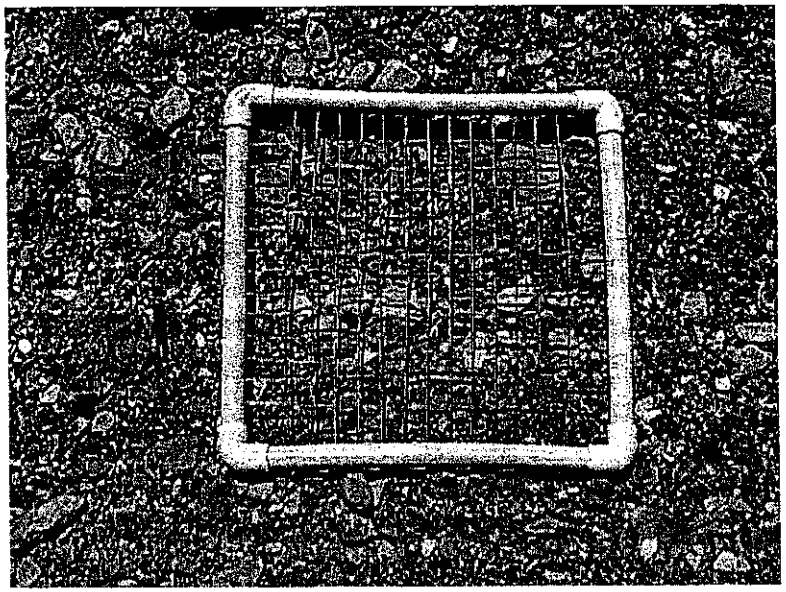
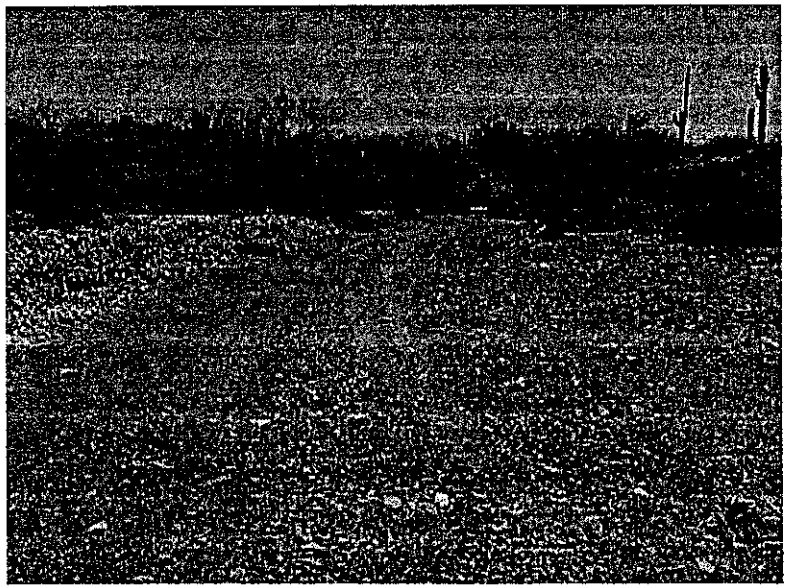
Unnamed Wash 2 Photographs (Approximate Methods)



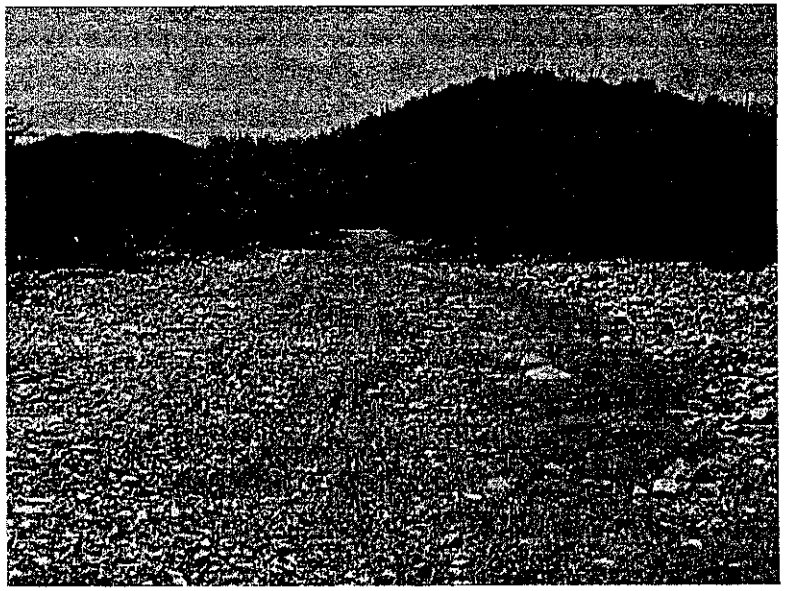
Photograph 50
Main Channel, Looking Downstream
Tributary 2 Reach



Photograph 51
Main Channel, Bed Material
Tributary 2 Reach

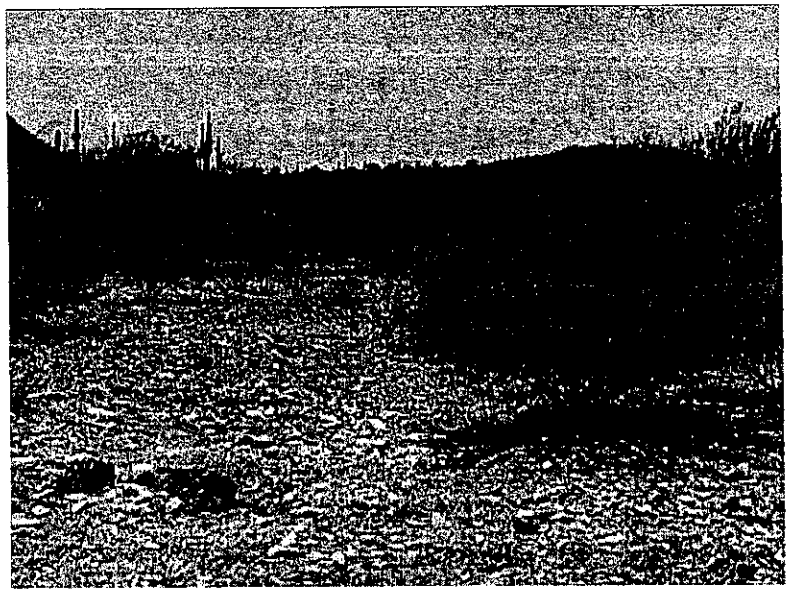


Photograph 52
Main Channel, Looking Upstream
Tributary 2 Reach

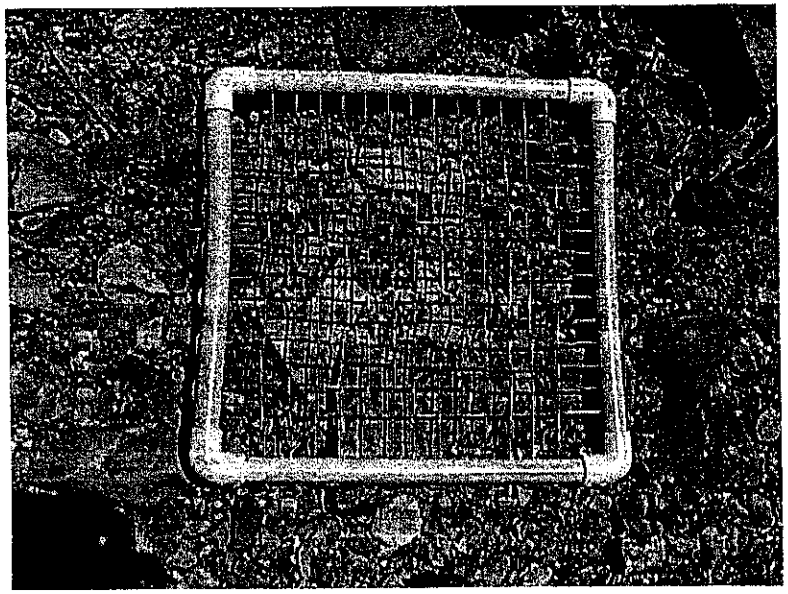


Photograph 53
Main Channel, Looking Downstream
Tributary 2 Reach

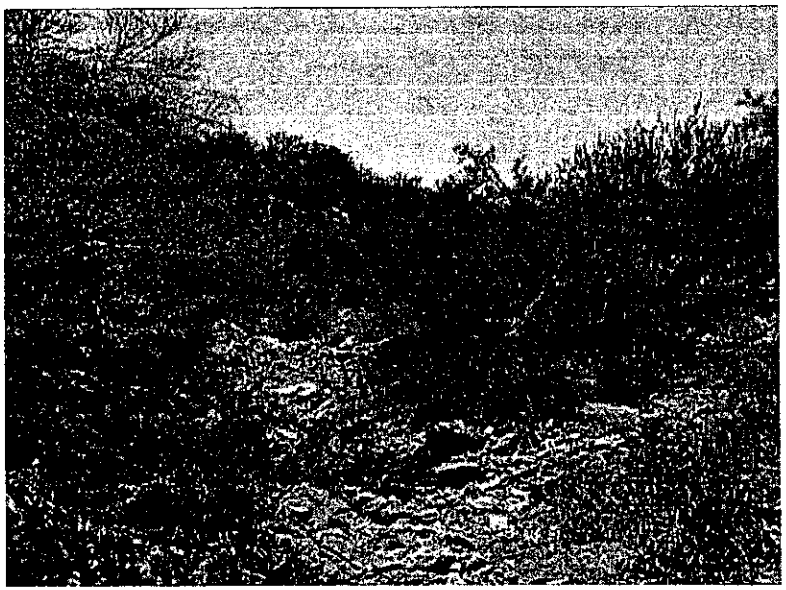
Unnamed Wash 2 Photographs (Approximate Methods)



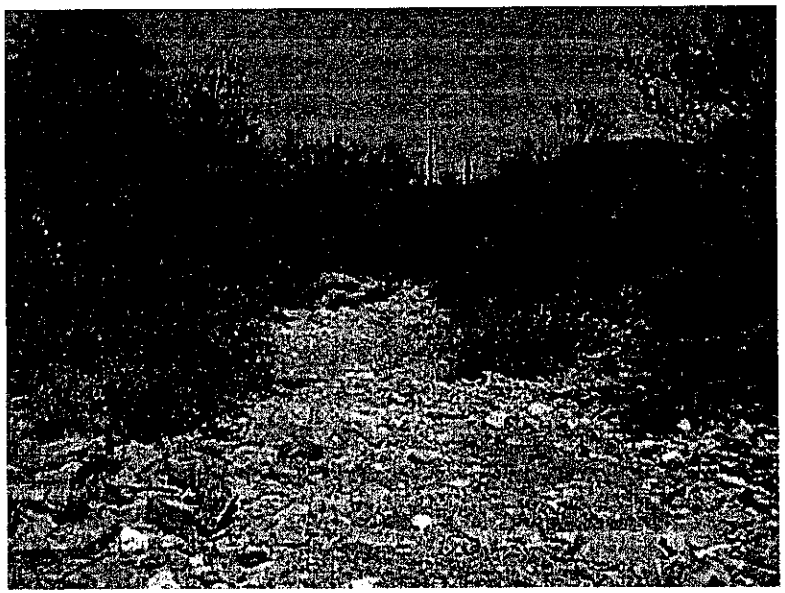
Photograph 54
Left Over Bank, Looking Downstream
Tributary 2 Reach



Photograph 55
Main Channel, Bed Material
Tributary 1 Reach



Photograph 56
Main Channel, Looking Upstream
Tributary 1 Reach



Photograph 57
Main Channel, Looking Downstream
Tributary 1 Reach

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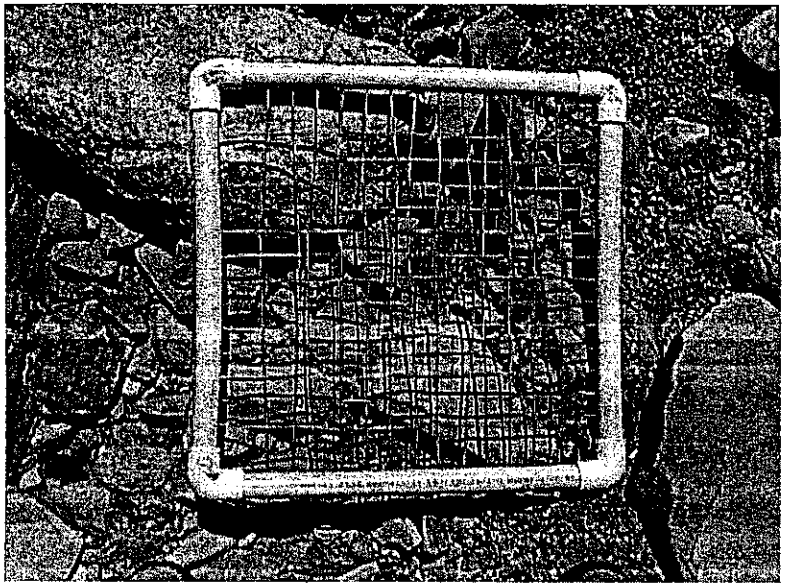
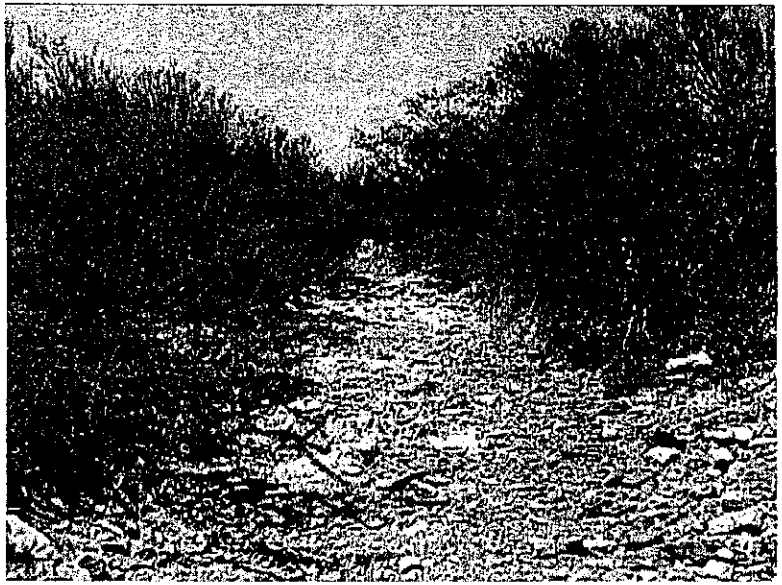
Unnamed Wash 2 Photographs (Approximate Methods)

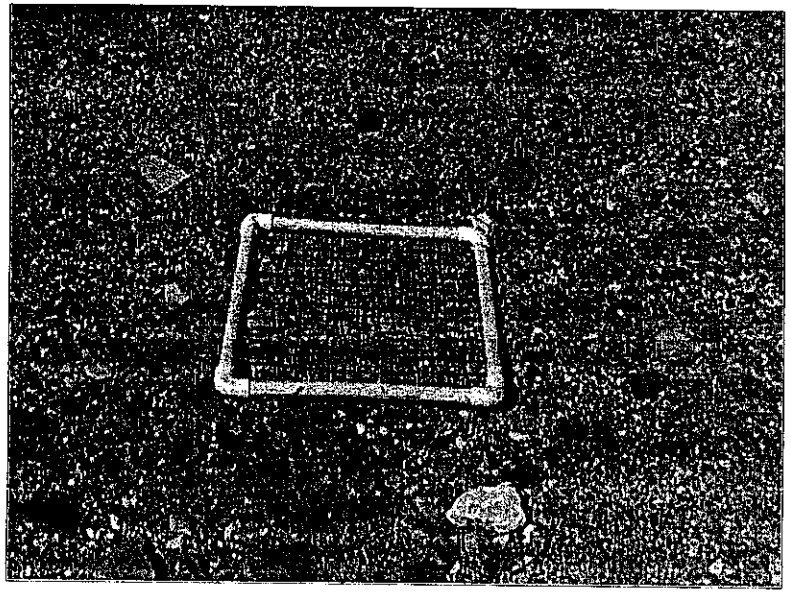


Photograph 58
Main Channel, Bed Material
Tributary 1 Reach



Photograph 59
Main Channel, Looking Upstream
Tributary 1 Reach

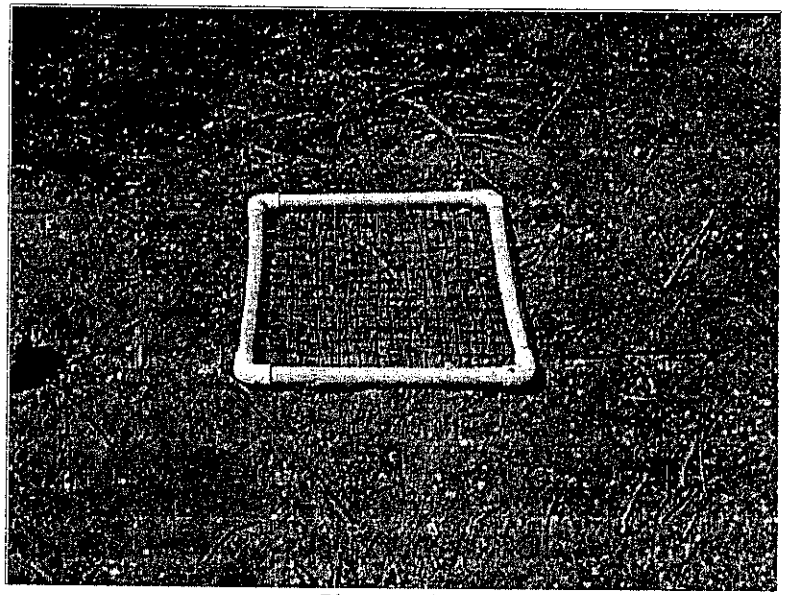
Twin Buttes Photographs (Approximate Methods)



Photograph 1
Main Channel, Bed Material

Photograph 2
Main Channel, Looking Upstream

Photograph 3
Main Channel, Looking Downstream



Photograph 4
Right Over Bank, Bed Material

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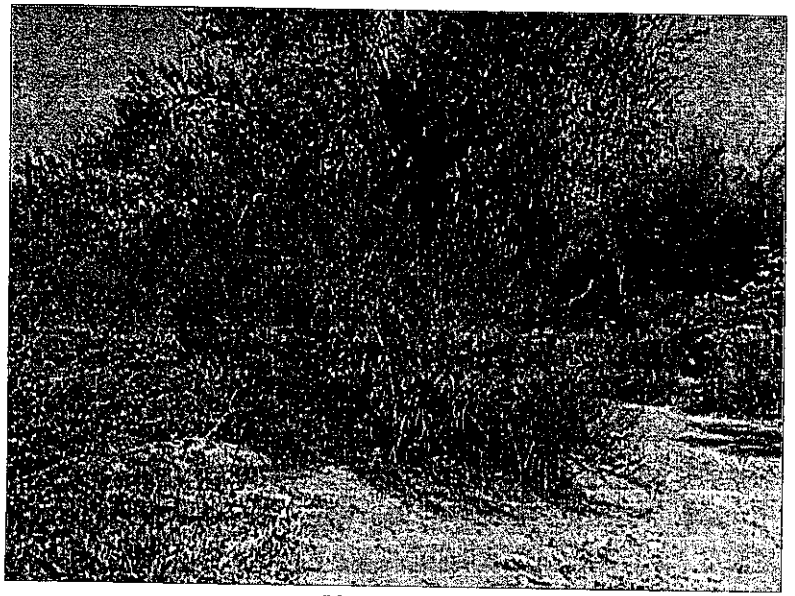
Twin Buttes Photographs (Approximate Methods)



Photograph 5
Right Over Bank, Looking Upstream

Photograph 6
Right Over Bank, Looking Downstream

Photograph 7
Main Channel, Looking Upstream

Photograph 8
Main Channel, Looking Downstream

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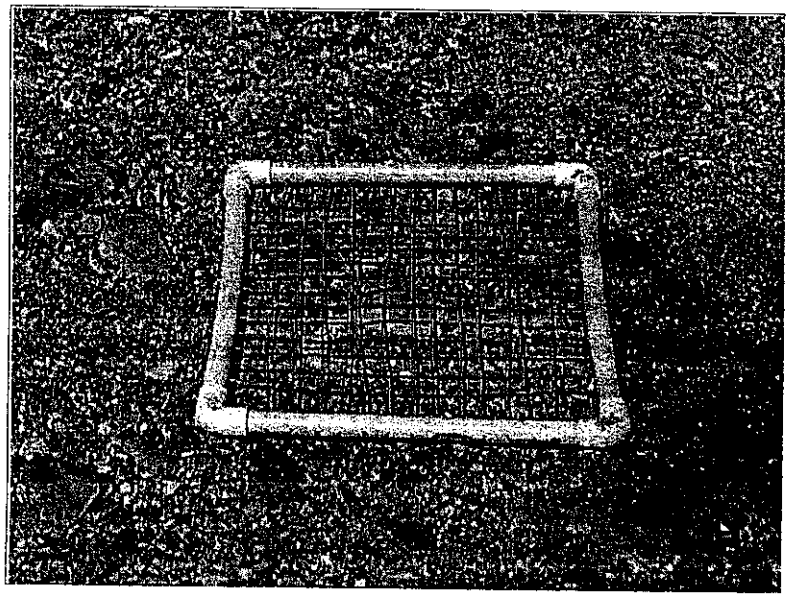
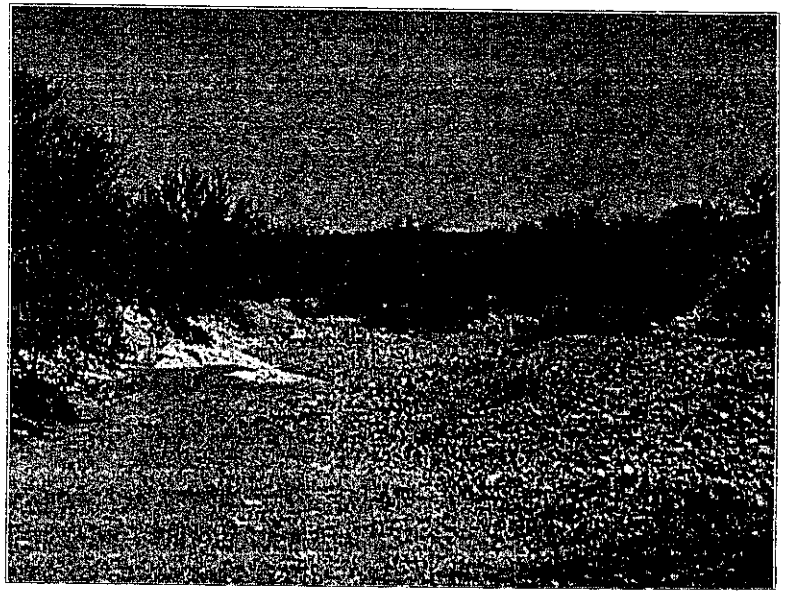
Twin Buttes Photographs (Approximate Methods)

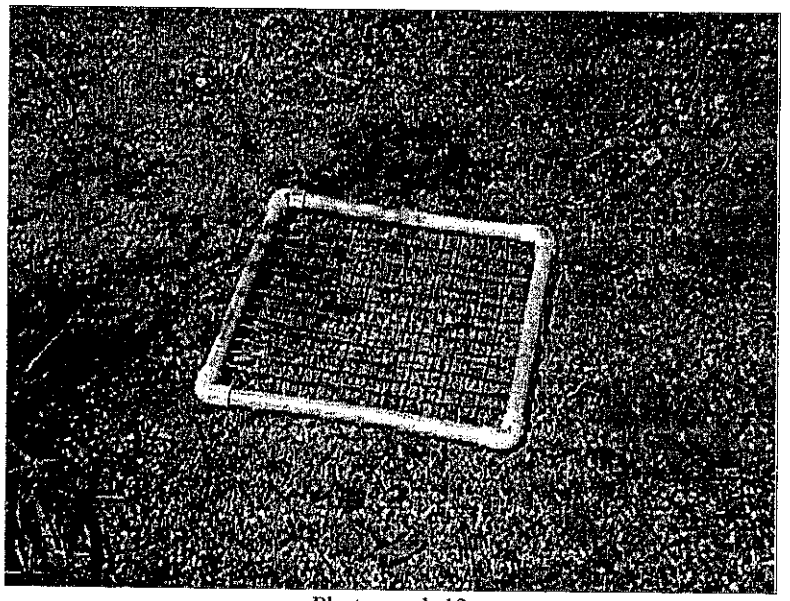


Photograph 9
Main Channel, Bed Material



Photograph 10
Main Channel, Looking Upstream

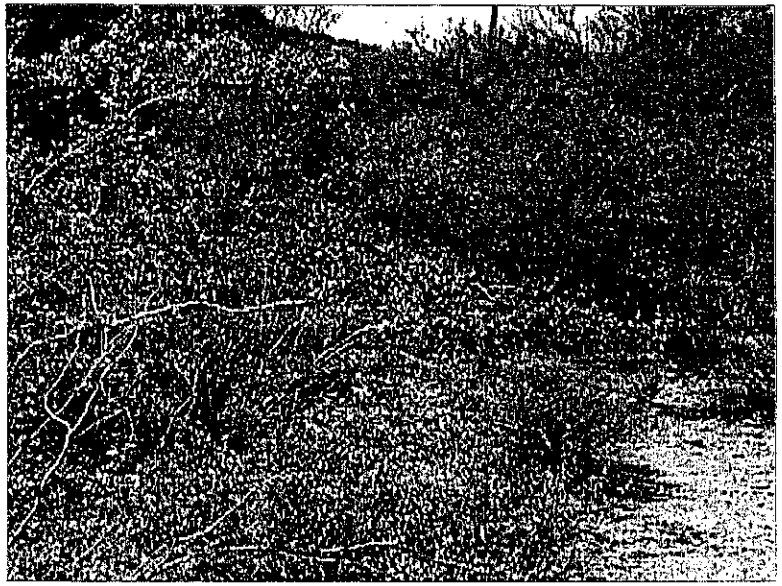
Photograph 11
Main Channel, Looking Downstream



Photograph 13
Left Over Bank, Bed Material

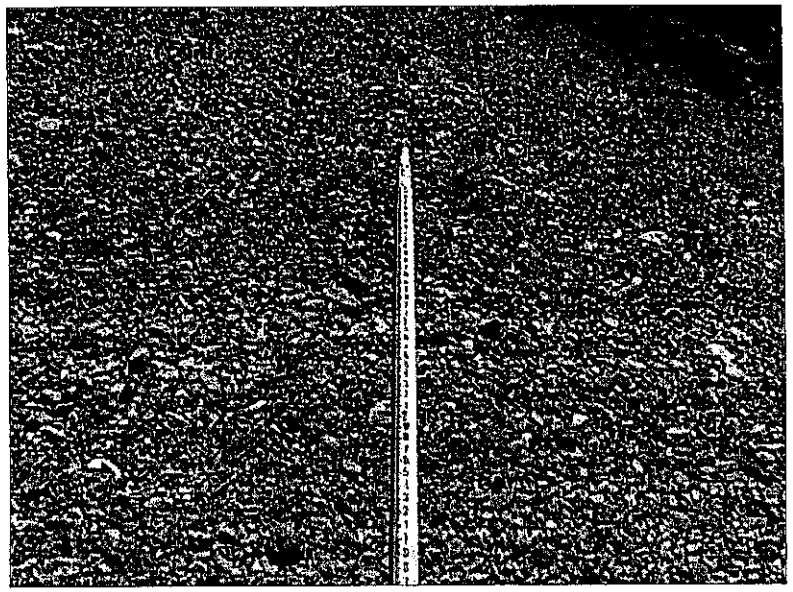
Twin Buttes Photographs (Approximate Methods)

Photograph 14
Left Over Bank, Looking Upstream

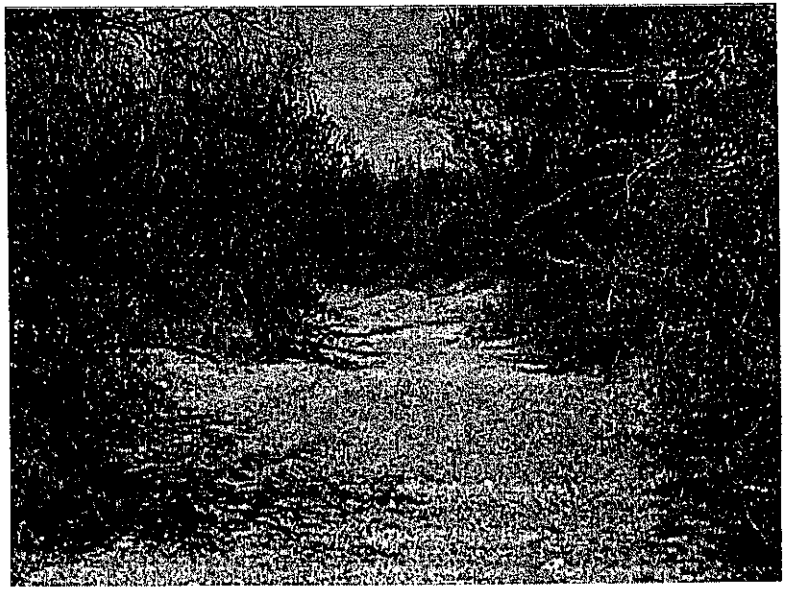


Photograph 15
Left Over Bank, Looking Downstream

Caterpillar Tanks Photographs (Approximate Methods)



Photograph 16
Main Channel, Bed Material



Photograph 17
Main Channel, Looking Upstream

Photograph 18
Main Channel, Looking Downstream

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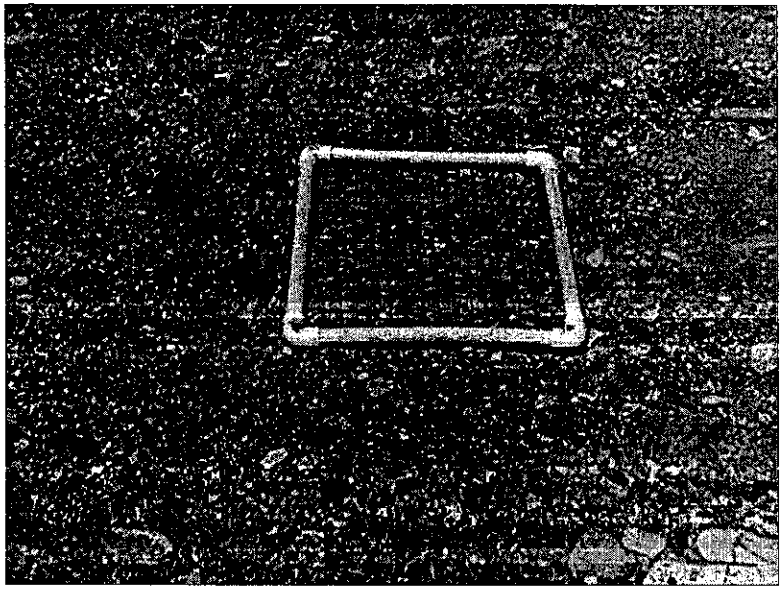
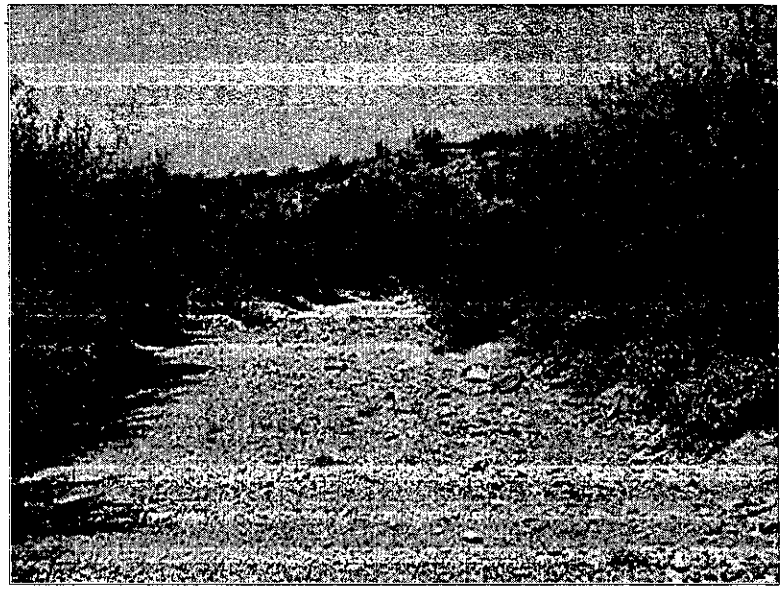
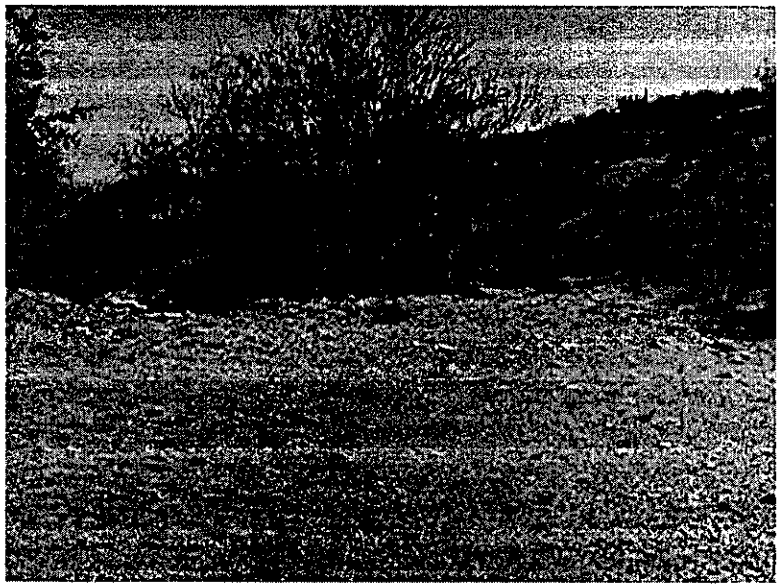
Unnamed Wash 4 Photographs (Approximate Methods)



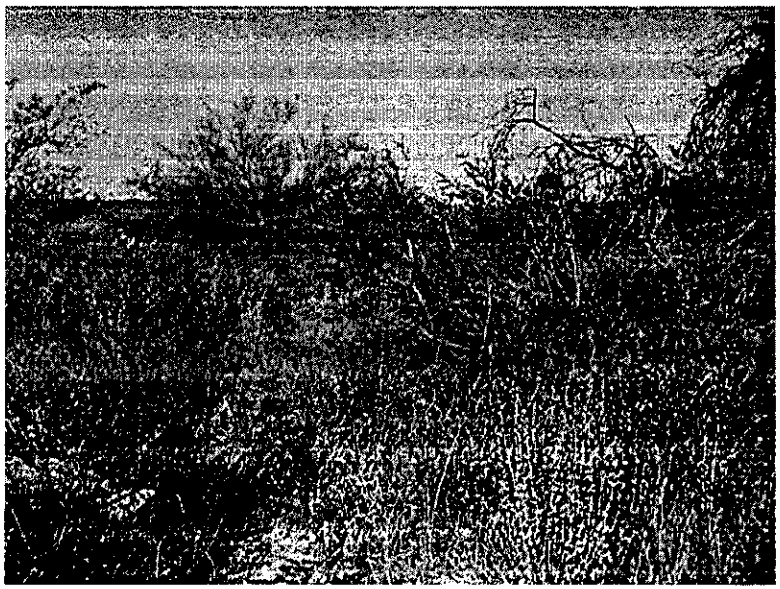
Photograph 19
Main Channel, Bed Material



Photograph 20
Main Channel, Looking Upstream



Photograph 21
Main Channel, Looking Downstream

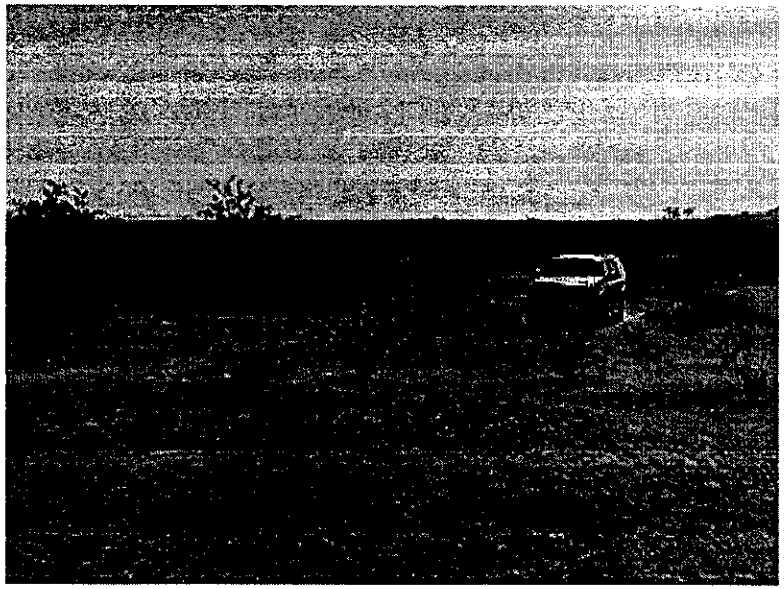


Photograph 32
Main Channel, Looking Upstream

Unnamed Wash 4 Photographs (Approximate Methods)

Photograph 33
Main Channel, Looking Downstream

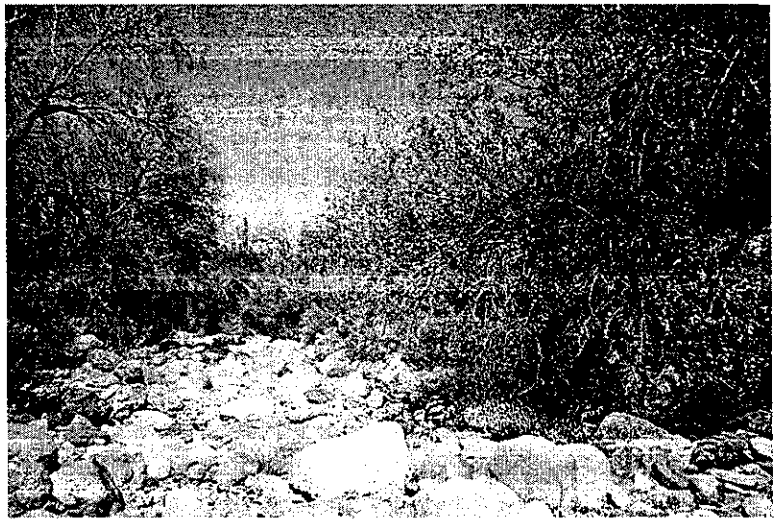
Photograph 34
Left Overbank, Looking Downstream



Photograph 35
Looking Downstream along Top of Berm

Unnamed Wash 5 (Approximate Methods)

Photograph 29
Main Channel, Looking Downstream



Photograph 28
Main Channel, Looking Upstream

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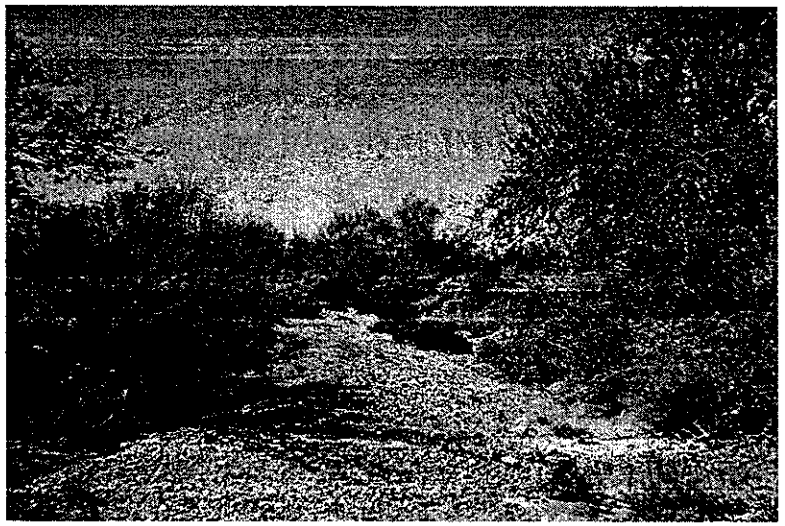
Unnamed Wash 6 (Approximate Methods)



Photograph 27
Main Channel, Looking Downstream

Photograph 26
Main Channel, Looking Upstream

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APPENDIX K: CULVERT HYDRAULIC CALCULATIONS

Structure # 7 at SR 74

CURRENT DATE: 09-20-2000 FILE DATE: 09-20-2000
CURRENT TIME: 11:43:48 FILE NAME: C7

****
********** FHWA CULVERT ANALYSIS **********
********** HY-8, VERSION 6.1 **********
****

CULV NO.	SITE DATA: INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	1845.42	1843.26	108.02	1 RCB	12.00	12.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

****

SUMMARY OF CULVERT FLOWS (cfs) FILE: C7 DATE: 09-20-2000

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1845.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1848.52	168.2	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1850.31	336.4	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1851.81	504.6	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1853.14	672.8	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1854.36	841.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1855.51	1009.2	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1856.62	1177.4	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1857.73	1345.6	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1858.13	1405.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1860.03	1682.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

****

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: C7 DATE: 09-20-2000

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
1845.42	0.000	0.00	0.00	0.00
1848.52	0.000	168.20	0.00	0.00
1850.31	0.000	336.40	0.00	0.00
1851.81	0.000	504.60	0.00	0.00
1853.14	0.000	672.80	0.00	0.00
1854.36	0.000	841.00	0.00	0.00
1855.51	0.000	1009.20	0.00	0.00
1856.62	0.000	1177.40	0.00	0.00
1857.73	0.000	1345.60	0.00	0.00
1858.13	0.000	1405.00	0.00	0.00
1860.03	0.000	1682.00	0.00	0.00

****

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

****

CURRENT DATE: 09-20-2000 FILE DATE: 09-20-2000
CURRENT TIME: 11:43:48 FILE NAME: C7

PERFORMANCE CURVE FOR CULVERT 1 - 1(12.00 (ft) BY 12.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1845.42	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	13.47
168.20	1848.52	3.10	3.10	1-S2n	0.80	1.83	1.03	1.54	13.59	7.26
336.40	1850.31	4.89	4.89	1-S2n	1.41	2.91	1.77	2.27	15.87	8.98
504.60	1851.81	6.39	6.39	1-S2n	1.84	3.81	2.41	2.82	17.45	10.12
672.80	1853.14	7.72	7.72	1-S2n	2.27	4.61	3.01	3.29	18.60	10.99
841.00	1854.36	8.94	8.94	1-S2n	2.64	5.35	3.61	3.70	19.39	11.70
1009.20	1855.51	10.09	10.09	1-S2n	2.99	6.05	4.15	4.07	20.28	12.31
1177.40	1856.62	11.20	11.20	1-S2n	3.34	6.70	4.69	4.41	20.92	12.84
1345.60	1857.73	12.31	12.31	5-S2n	3.68	7.32	5.20	4.71	21.54	13.32
1405.00	1858.13	12.71	12.71	5-S2n	3.79	7.54	5.34	4.82	21.93	13.47
1682.00	1860.02	14.60	14.60	5-S2n	4.31	8.50	6.18	5.28	22.68	14.14

El. inlet face invert 1845.42 ft El. outlet invert 1843.26 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	1845.42 ft
OUTLET STATION	108.00 ft
OUTLET ELEVATION	1843.26 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0200
CULVERT LENGTH ALONG SLOPE	108.02 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	BOX
BARREL SPAN	12.00 ft
BARREL RISE	12.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE (90-45 DEG.)
INLET DEPRESSION	NONE

CURRENT DATE: 09-20-2000 FILE DATE: 09-20-2000
CURRENT TIME: 11:43:48 FILE NAME: C7

****
********** TAILWATER **********
****

******* REGULAR CHANNEL CROSS SECTION **********

BOTTOM WIDTH	12.00 ft
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (ft/ft)	0.022
MANNING'S n (.01-0.1)	0.035
CHANNEL INVERT ELEVATION	1843.26 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	1843.26 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	1843.26	1.082	0.00	13.47	6.68
168.20	1844.80	1.031	1.54	7.26	2.13
336.40	1845.53	1.052	2.27	8.98	3.14
504.60	1846.08	1.062	2.82	10.12	3.91
672.80	1846.55	1.068	3.29	10.99	4.56
841.00	1846.96	1.072	3.70	11.70	5.13
1009.20	1847.33	1.075	4.07	12.31	5.64
1177.40	1847.67	1.078	4.41	12.84	6.10
1345.60	1847.97	1.081	4.71	13.32	6.53
1405.00	1848.08	1.082	4.82	13.47	6.68
1682.00	1848.54	1.085	5.28	14.14	7.31

****
********** ROADWAY OVERTOPPING DATA **********
****

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	40.00 ft
CREST LENGTH	1.00 ft
OVERTOPPING CREST ELEVATION	1867.23 ft

****

Structure # 13 at SR 74

CURRENT DATE: 09-18-2000 FILE DATE: 09-18-2000
CURRENT TIME: 10:32:36 FILE NAME: C13

****
********** FHWA CULVERT ANALYSIS **********
********** HY-8, VERSION 6.1 **********
****

CULV NO.	SITE DATA: INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	100.00	98.64	91.01	1 RCB	10.00	10.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

****

SUMMARY OF CULVERT FLOWS (cfs) FILE: C13 DATE: 09-18-2000

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
100.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
102.50	120.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
103.96	240.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
105.20	360.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
106.34	480.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
107.37	600.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
108.35	720.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
108.59	751.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
110.25	960.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
111.25	1080.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
112.30	1200.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

****

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: C13 DATE: 09-18-2000

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
100.00	0.000	0.00	0.00	0.00
102.50	0.000	120.00	0.00	0.00
103.96	0.000	240.00	0.00	0.00
105.20	0.000	360.00	0.00	0.00
106.34	0.000	480.00	0.00	0.00
107.37	0.000	600.00	0.00	0.00
108.35	0.000	720.00	0.00	0.00
108.59	0.000	751.00	0.00	0.00
110.25	0.000	960.00	0.00	0.00
111.25	0.000	1080.00	0.00	0.00
112.30	0.000	1200.00	0.00	0.00

****

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

****

CURRENT DATE: 09-18-2000 FILE DATE: 09-18-2000
CURRENT TIME: 10:32:36 FILE NAME: C13

PERFORMANCE CURVE FOR CULVERT 1 - 1(10.00 (ft) BY 10.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	100.00	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
120.00	102.50	2.50	2.50	1-S2n	0.89	1.65	1.03	1.56	11.64	5.88
240.00	103.96	3.96	3.96	1-S2n	1.42	2.62	1.75	2.28	13.71	7.24
360.00	105.20	5.20	5.20	1-S2n	1.90	3.43	2.38	2.83	15.10	8.13
480.00	106.34	6.34	6.34	1-S2n	2.31	4.16	2.96	3.29	16.21	8.81
600.00	107.37	7.37	7.37	1-S2n	2.70	4.83	3.52	3.69	17.06	9.37
720.00	108.35	8.35	8.35	1-S2n	3.09	5.45	4.04	4.04	17.81	9.84
751.00	108.59	8.59	8.59	1-S2n	3.18	5.61	4.18	4.13	17.98	9.95
960.00	110.25	10.25	10.25	5-S2n	3.79	6.60	5.00	4.67	19.18	10.63
1080.00	111.25	11.25	11.25	5-S2n	4.13	7.14	5.44	4.95	19.84	10.97
1200.00	112.30	12.30	12.30	5-S2n	4.46	7.66	5.95	5.21	20.16	11.28

El. inlet face invert 100.00 ft El. outlet invert 98.64 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	100.00 ft
OUTLET STATION	91.00 ft
OUTLET ELEVATION	98.64 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0149
CULVERT LENGTH ALONG SLOPE	91.01 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	BOX
BARREL SPAN	10.00 ft
BARREL RISE	10.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE (30-75 DEG. FLARE)
INLET DEPRESSION	NONE

CURRENT DATE: 09-18-2000 FILE DATE: 09-18-2000
CURRENT TIME: 10:32:36 FILE NAME: C13

****
********** TAILWATER **********
****

******* REGULAR CHANNEL CROSS SECTION **********

BOTTOM WIDTH	10.00 ft
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (ft/ft)	0.015
MANNING'S n (.01-0.1)	0.035
CHANNEL INVERT ELEVATION	98.64 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	98.64 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	98.64	0.000	0.00	0.00	0.00
120.00	100.20	0.831	1.56	5.88	1.46
240.00	100.92	0.845	2.28	7.24	2.13
360.00	101.47	0.852	2.83	8.13	2.65
480.00	101.93	0.857	3.29	8.81	3.08
600.00	102.33	0.860	3.69	9.37	3.45
720.00	102.68	0.863	4.04	9.84	3.79
751.00	102.77	0.863	4.13	9.95	3.87
960.00	103.31	0.867	4.67	10.63	4.37
1080.00	103.59	0.869	4.95	10.97	4.63
1200.00	103.85	0.871	5.21	11.28	4.88

****
********** ROADWAY OVERTOPPING DATA **********
****

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH	40.00 ft
CREST LENGTH	1.00 ft
OVERTOPPING CREST ELEVATION	116.00 ft

****

Structure # 63 at Beardsley Canal

CURRENT DATE: 11-30-2000 FILE DATE: 11-30-2000
CURRENT TIME: 12:53:29 FILE NAME: C705-C

****
********** FHWA CULVERT ANALYSIS **********
********** HY-8, VERSION 6.1 **********
****

CULV NO.	SITE DATA: INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	1338.24	1338.00	120.00	2 RCB	5.00	5.00	.015	CONVENTIONAL
2								
3								
4								
5								
6								

****

SUMMARY OF CULVERT FLOWS (cfs) FILE: C705-C DATE: 11-30-2000

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1338.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1342.26	200.0	200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1344.68	400.0	400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1347.93	600.0	600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1352.52	800.0	800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1359.03	1000.0	1000.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1367.08	1200.0	1200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1376.59	1400.0	1400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1377.62	1420.0	1420.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1400.00	1800.0	1800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1413.90	2000.0	2000.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1420.00	2081.6	2081.6	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

****

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: C705-C DATE: 11-30-2000

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
1338.24	0.000	0.00	0.00	0.00
1342.26	0.000	200.00	0.00	0.00
1344.68	0.000	400.00	0.00	0.00
1347.93	0.000	600.00	0.00	0.00
1352.52	0.000	800.00	0.00	0.00
1359.03	0.000	1000.00	0.00	0.00
1367.08	0.000	1200.00	0.00	0.00
1376.59	0.000	1400.00	0.00	0.00
1377.62	0.000	1420.00	0.00	0.00
1400.00	0.000	1800.00	0.00	0.00
1413.90	0.000	2000.00	0.00	0.00

****

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

****

CURRENT DATE: 11-30-2000 FILE DATE: 11-30-2000
CURRENT TIME: 12:53:29 FILE NAME: C705-C

PERFORMANCE CURVE FOR CULVERT 1 - 2(5.00 (ft) BY 5.00 (ft)) RCB

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1338.24	0.00	0.00	0-NF	0.00	0.00	0.00	-6.00	0.00	0.00
200.00	1342.26	3.92	4.02	2-M2c	3.50	2.32	2.32	-3.86	8.62	5.51
400.00	1344.68	6.44	6.36	2-M2c	5.00	3.68	3.68	-3.24	10.86	6.54
600.00	1347.93	9.69	9.41	2-M2c	5.00	4.83	4.83	-2.78	12.43	7.24
800.00	1352.52	14.28	13.03	6-S2n	5.00	5.00	4.90	-2.41	16.33	7.78
1000.00	1359.03	20.79	17.69	6-S2n	5.00	5.00	4.90	-2.10	20.41	8.23
1200.00	1367.08	28.84	23.38	6-S2n	5.00	5.00	4.90	-1.30	24.49	2.53
1400.00	1376.59	38.35	30.10	6-S2n	5.00	5.00	4.90	-1.03	28.57	3.15
1420.00	1377.62	39.38	30.83	6-S2n	5.00	5.00	4.90	-1.00	28.98	3.21
1800.00	1400.00	61.76	46.65	6-S2n	5.00	5.00	4.90	-0.54	36.73	4.13
2000.00	1413.90	75.66	56.47	6-S2n	5.00	5.00	4.90	-0.31	40.82	4.54

El. inlet face invert 1338.24 ft El. outlet invert 1338.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	100.00 ft
INLET ELEVATION	1338.24 ft
OUTLET STATION	220.00 ft
OUTLET ELEVATION	1338.00 ft
NUMBER OF BARRELS	2
SLOPE (V/H)	0.0020
CULVERT LENGTH ALONG SLOPE	120.00 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	BOX
BARREL SPAN	5.00 ft
BARREL RISE	5.00 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.015
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE (90-45 DEG.)
INLET DEPRESSION	NONE

CURRENT DATE: 11-30-2000 FILE DATE: 11-30-2000
CURRENT TIME: 12:53:29 FILE NAME: C705-C

****
********** TAILWATER **********
****

***** USER DEFINED CHANNEL CROSS-SECTION FILE NAME: C705-TW
MAIN CHANNEL AND LT & RT OVER BANKS FILE DATE: 11-29-00
LEFT CHANNEL BOUNDARY 2
RIGHT CHANNEL BOUNDARY 4
MANNING n LEFT OVER BANK 0.025
MANNING n MAIN CHANNEL 0.035
MANNING n RIGHT OVER BANK 0.050
SLOPE OF CHANNEL 0.0156 ft/ft

CROSS-SECTION COORD. NO.	X (ft)	Y (ft)
1	0.00	1340.00
2	11.15	1336.00
3	51.42	1332.00
4	75.27	1336.00
5	89.78	1338.00

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	1332.00	0.000	-6.00	0.00	0.00
200.00	1334.14	0.940	-3.86	5.51	1.03
400.00	1334.76	0.981	-3.24	6.54	1.33
600.00	1335.22	1.006	-2.78	7.24	1.55
800.00	1335.59	1.024	-2.41	7.78	1.73
1000.00	1335.90	1.039	-2.10	8.23	1.88
1200.00	1336.70	0.754	-1.30	2.53	0.32
1400.00	1336.97	0.796	-1.03	3.15	0.45
1420.00	1337.00	0.800	-1.00	3.21	0.46
1800.00	1337.46	0.851	-0.54	4.13	0.67
2000.00	1337.69	0.872	-0.31	4.54	0.77

Note: Shear stress was calculated using R.

****
********** ROADWAY OVERTOPPING DATA **********
****

WEIR COEFFICIENT 2.70
EMBANKMENT TOP WIDTH 40.00 ft
CREST LENGTH 608.54 ft
OVERTOPPING CREST ELEVATION 1420.00 ft

****

Structure # 74 at Waddell Canal

CURRENT DATE: 11-30-2000 FILE DATE: 11-30-2000
CURRENT TIME: 13:57:41 FILE NAME: C716O

****
********** FHWA CULVERT ANALYSIS **********
********** HY-8, VERSION 6.1 **********
****

C U L V NO.	SITE DATA: INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	1504.90	1496.00	252.16	2 RCP	4.50	4.50	.015	CONVENTIONAL
2								
3								
4								
5								
6								

****

SUMMARY OF CULVERT FLOWS (cfs) FILE: C716O DATE: 11-30-2000

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1504.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1509.94	230.0	230.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1516.13	460.0	460.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1526.53	690.0	690.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1544.42	920.0	920.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1592.19	1150.0	1150.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1729.99	1380.0	1380.0	0.0	0.0	0.0	0.0	0.0	0.00	1
2074.29	1610.0	1610.0	0.0	0.0	0.0	0.0	0.0	0.00	1
2108.01	1625.0	1625.0	0.0	0.0	0.0	0.0	0.0	0.00	1
4241.67	2070.0	2070.0	0.0	0.0	0.0	0.0	0.0	0.00	1
6746.91	2300.0	2300.0	0.0	0.0	0.0	0.0	0.0	0.00	1
6750.00	2300.2	2300.2	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

****

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: C716O DATE: 11-30-2000

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
1504.90	0.000	0.00	0.00	0.00
1509.94	0.000	230.00	0.00	0.00
1516.13	0.000	460.00	0.00	0.00
1526.53	0.000	690.00	0.00	0.00
1544.42	0.000	920.00	0.00	0.00
1592.19	0.000	1150.00	0.00	0.00
1729.99	0.000	1380.00	0.00	0.00
2074.29	0.000	1610.00	0.00	0.00
2108.01	0.000	1625.00	0.00	0.00
4241.67	0.000	2070.00	0.00	0.00
6746.91	0.000	2300.00	0.00	0.00

****

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

****

CURRENT DATE: 11-30-2000 FILE DATE: 11-30-2000
CURRENT TIME: 13:57:41 FILE NAME: C716O

PERFORMANCE CURVE FOR CULVERT 1 - 2(4.50 (ft) BY 4.50 (ft)) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1504.90	0.00	0.00	0-NF	0.00	0.00	0.00	-4.00	0.00	0.00
230.00	1509.94	5.04	5.04	5-S2n	1.86	3.16	1.90	-2.93	18.06	4.91
460.00	1516.13	11.23	11.23	5-S2n	2.82	4.29	2.92	-2.46	21.06	5.99
690.00	1526.53	21.63	16.83	6-S2n	4.50	4.50	4.40	-2.12	21.95	6.70
920.00	1544.42	39.52	33.35	6-S2n	4.50	4.50	4.40	-1.82	29.26	7.26
1150.00	1592.19	87.29	54.59	6-S2n	4.50	4.50	4.40	-1.58	36.58	7.70
1380.00	1729.99	225.09	80.54	6-S2n	4.50	4.50	4.40	-1.36	43.89	8.09
1610.00	2074.29	569.39	111.21	6-S2n	4.50	4.50	4.40	-1.16	51.21	8.42
1625.00	2108.01	603.11	113.38	6-S2n	4.50	4.50	4.40	-1.14	51.68	8.45
2070.00	4241.67	0.00	186.71	6-S2n	4.50	4.50	4.40	-0.80	65.84	9.00
2300.00	6746.91	0.00	231.54	6-S2n	4.50	4.50	4.40	-0.64	73.15	9.25

El. inlet face invert 1504.90 ft El. outlet invert 1496.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	100.00 ft
INLET ELEVATION	1504.90 ft
OUTLET STATION	352.00 ft
OUTLET ELEVATION	1496.00 ft
NUMBER OF BARRELS	2
SLOPE (V/H)	0.0353
CULVERT LENGTH ALONG SLOPE	252.16 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	4.50 ft
BARREL MATERIAL	CONCRETE
BARREL MANNING'S n	0.015
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

CURRENT DATE: 11-30-2000 FILE DATE: 11-30-2000
CURRENT TIME: 13:57:41 FILE NAME: C716O

****
********** TAILWATER **********
****

***** USER DEFINED CHANNEL CROSS-SECTION FILE NAME: C716OTW
MAIN CHANNEL AND LT & RT OVER BANKS FILE DATE: 11-30-00

LEFT CHANNEL BOUNDARY	3
RIGHT CHANNEL BOUNDARY	6
MANNING n LEFT OVER BANK	0.050
MANNING n MAIN CHANNEL	0.035
MANNING n RIGHT OVER BANK	0.050
SLOPE OF CHANNEL	0.0177 ft/ft

CROSS-SECTION COORD. NO.	X (ft)	Y (ft)
1	100.00	1504.00
2	115.00	1500.00
3	150.00	1496.00
4	165.00	1492.00
5	195.00	1492.00
6	285.00	1496.00
7	370.00	1500.00
8	425.00	1504.00

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	1492.00	0.000	-4.00	0.00	0.00
230.00	1493.07	0.960	-2.93	4.91	0.89
460.00	1493.54	1.008	-2.46	5.99	1.21
690.00	1493.88	1.037	-2.12	6.70	1.43
920.00	1494.18	1.058	-1.82	7.26	1.61
1150.00	1494.42	1.073	-1.58	7.70	1.76
1380.00	1494.64	1.087	-1.36	8.09	1.89
1610.00	1494.84	1.098	-1.16	8.42	2.01
1625.00	1494.86	1.098	-1.14	8.45	2.02
2070.00	1495.20	1.116	-0.80	9.00	2.22
2300.00	1495.36	1.124	-0.64	9.25	2.32

Note: Shear stress was calculated using R.

****
********** ROADWAY OVERTOPPING DATA **********
****

WEIR COEFFICIENT	2.70
EMBANKMENT TOP WIDTH	170.00 ft
CREST LENGTH	1360.00 ft
OVERTOPPING CREST ELEVATION	6750.00 ft

****

Structure # 86 at Lake Pleasant Road

CURRENT DATE: 12-11-2000 FILE DATE: 12-11-2000
CURRENT TIME: 10:09:25 FILE NAME: C86-WEIR

****
********** FHWA CULVERT ANALYSIS **********
********** HY-8, VERSION 6.1 **********
****

CULV NO.	SITE DATA: INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	1400.00	1399.90	50.00	2 CSP	4.50	4.50	.031	CONVENTIONAL
2								
3								
4								
5								
6								

****

SUMMARY OF CULVERT FLOWS (cfs) FILE: C86-WEIR DATE: 12-11-2000

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1400.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1403.69	120.0	120.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1406.10	240.0	240.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1408.22	360.0	318.1	0.0	0.0	0.0	0.0	0.0	39.94	9
1408.38	480.0	324.0	0.0	0.0	0.0	0.0	0.0	153.13	5
1408.41	500.0	324.2	0.0	0.0	0.0	0.0	0.0	171.76	3
1408.62	720.0	330.2	0.0	0.0	0.0	0.0	0.0	385.89	4
1408.71	840.0	333.7	0.0	0.0	0.0	0.0	0.0	498.92	3
1408.81	960.0	337.0	0.0	0.0	0.0	0.0	0.0	615.95	3
1408.90	1080.0	340.0	0.0	0.0	0.0	0.0	0.0	733.86	3
1408.98	1200.0	342.9	0.0	0.0	0.0	0.0	0.0	851.88	3
1408.10	313.6	313.6	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

****

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: C86-WEIR DATE: 12-11-2000

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
1400.00	0.000	0.00	0.00	0.00
1403.69	0.000	120.00	0.00	0.00
1406.10	0.000	240.00	0.00	0.00
1408.22	-0.003	360.00	1.92	0.53
1408.38	-0.006	480.00	2.89	0.60
1408.41	-0.008	500.00	4.03	0.81
1408.62	-0.003	720.00	3.88	0.54
1408.71	-0.005	840.00	7.41	0.88
1408.81	-0.004	960.00	7.09	0.74
1408.90	-0.003	1080.00	6.10	0.56
1408.98	-0.003	1200.00	5.18	0.43

****

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

****

CURRENT DATE: 12-11-2000 FILE DATE: 12-11-2000
CURRENT TIME: 10:09:25 FILE NAME: C86-WEIR

PERFORMANCE CURVE FOR CULVERT 1 - 2(4.50 (ft) BY 4.50 (ft)) CSP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1400.00	0.00	0.00	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
120.00	1403.69	3.25	3.69	2-M2c	4.50	2.25	2.25	1.49	7.54	4.65
240.00	1406.10	5.26	6.10	2-M2c	4.50	3.22	3.22	1.98	9.87	5.72
318.15	1408.21	6.91	8.21	2-M2c	4.50	3.67	3.67	2.30	11.47	6.67
323.99	1408.37	7.05	8.37	2-M2c	4.50	3.70	3.70	2.55	11.61	7.36
324.21	1408.41	7.05	8.41	7-M2c	4.50	3.70	3.70	2.58	11.61	7.47
330.23	1408.61	7.20	8.61	2-M2c	4.50	3.73	3.73	2.95	11.76	8.45
333.68	1408.71	7.28	8.71	2-M2c	4.50	3.74	3.74	3.13	11.84	8.90
336.96	1408.80	7.37	8.80	2-M2c	4.50	3.76	3.76	3.29	11.92	9.32
340.04	1408.89	7.44	8.89	2-M2c	4.50	3.77	3.77	3.45	11.99	9.70
342.94	1408.97	7.52	8.97	2-M2c	4.50	3.78	3.78	3.60	12.06	10.06

El. inlet face invert 1400.00 ft El. outlet invert 1399.90 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	100.00 ft
INLET ELEVATION	1400.00 ft
OUTLET STATION	150.00 ft
OUTLET ELEVATION	1399.90 ft
NUMBER OF BARRELS	2
SLOPE (V/H)	0.0020
CULVERT LENGTH ALONG SLOPE	50.00 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	4.50 ft
BARREL MATERIAL	CORRUGATED ALUMINUM
BARREL MANNING'S n	0.031
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

CURRENT DATE: 12-11-2000 FILE DATE: 12-11-2000
CURRENT TIME: 10:09:25 FILE NAME: C86-WEIR

****
********** TAILWATER **********
****

***** USER DEFINED CHANNEL CROSS-SECTION FILE NAME: 726727
MAIN CHANNEL AND LT & RT OVER BANKS FILE DATE: 12-8-00
LEFT CHANNEL BOUNDARY 2
RIGHT CHANNEL BOUNDARY 4
MANNING n LEFT OVER BANK 0.055
MANNING n MAIN CHANNEL 0.040
MANNING n RIGHT OVER BANK 0.045
SLOPE OF CHANNEL 0.0185 ft/ft

CROSS-SECTION COORD. NO.	X (ft)	Y (ft)
1	100.00	1406.70
2	113.60	1399.90
3	135.60	1400.80
4	146.60	1401.90
5	169.60	1402.10
6	174.00	1406.70

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	1399.90	0.000	0.00	0.00	0.00
120.00	1401.39	0.871	1.49	4.65	1.02
240.00	1401.89	0.918	1.98	5.72	1.39
360.00	1402.20	0.953	2.30	6.67	1.75
480.00	1402.45	0.977	2.55	7.36	2.03
500.00	1402.48	0.981	2.58	7.47	2.08
720.00	1402.85	1.011	2.95	8.45	2.50
840.00	1403.03	1.025	3.13	8.90	2.70
960.00	1403.19	1.037	3.29	9.32	2.89
1080.00	1403.35	1.047	3.45	9.70	3.07
1200.00	1403.50	1.057	3.60	10.06	3.24

Note: Shear stress was calculated using R.

****
********** ROADWAY OVERTOPPING DATA **********
****

ROADWAY SURFACE PAVED
EMBANKMENT TOP WIDTH 40.00 ft
CREST LENGTH 341.92 ft
OVERTOPPING CREST ELEVATION 1408.10 ft

****

APPENDIX L: HEC-RAS MODEL OUTPUT

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: Unnamed Wash 1
Project File : Unl_FpFw.prj
Run Date and Time: 5/23/01 11:31:22 AM

Project in English units

Project Description:
North Peoria Area Drainage Master Plan, FCD 99-45
Unnamed Wash 1 Floodplain
Delineation Study
Study Contractors: Stantec Consulting, Inc.
P82000146

Geometry Based on Aerial photography, Flight Date 2-18-00
Flow by
Cooper Aerial

Peak discharges are from 100-year, 6-hour HEC-1 model
dated
???, prepared by Stantec

PLAN DATA

Plan Title: 100-yr Existing Conditions Fp/Fw
Plan File : p:\82000146\Calcs\HEC-RAS\FEMA\Unnamed_Wash1\Unl_FpFw.p01

Geometry Title: Existing Conditions
Geometry File : p:\82000146\Calcs\HEC-RAS\FEMA\Unnamed_Wash1\Unl_FpFw.g01

Flow Title : 100-yr Existing Conditions
Flow File : p:\82000146\Calcs\HEC-RAS\FEMA\Unnamed_Wash1\Unl_FpFw.f01

Plan Summary Information:
Number of: Cross Sections = 96 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 1
Bridges = 0

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

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

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

River = Unnamed 1 Reach = Reach 1

RS	Profile	Method	Value1	Value2
6.311	Method 1	1	9986.4	510021.63
6.216	Method 1	1	9944.2	410042.03
6.100	Method 1	1	9979.1	610045.18
6.015	Method 1	1	9976.8	310018.83
5.969	Method 1	1	992	210019.42
5.917	Method 1	1	9987.8	110028.23
5.862	Method 1	1	9974.7	910023.36
5.746	Method 1	1	9940	10023.5
5.632	Method 1	1	9966.1	10015.5
5.505	Method 1	1	9979.9	610035.65
5.439	Method 1	1	9980.6	610157.67
5.380	Method 1	1	9987.7	310062.35
5.310	Method 1	1	9981.7	610022.31
5.227	Method 1	1	995	510027.18

5.207	Method 1	1	9966.110051.83	
5.176	Method 1	1	9963.5510033.72	
5.096	Method 1	1	9980.2210028.66	
5.007	Method 1	1	9975.4110057.71	
4.920	Method 1	1	9980.3210018.31	
4.879	Method 1	1	9979.810075.03	
4.839	Method 1	1	9978.33	10070
4.725	Method 1	1	9966.77	10020
4.628	Method 1	1	9957.0910045.54	
4.613	Method 1	1	9952.2210067.07	
4.536	Method 1	1	9983.29 10027.1	
4.436	Method 1	1	9965 10018.9	
4.412	Method 1	1	9970.33 10029.3	
4.361	Method 1	1	9964 10018.5	
4.256	Method 1	1	9974.56 10084.5	
4.170	Method 1	1	9983.5910083.85	
4.077	Method 1	1	9925 10021.4	
3.987	Method 1	1	9977.4	10050
3.895	Method 1	1	9973.510062.23	
3.803	Method 1	1	9961.86 10053.6	
3.706	Method 1	1	9770.7710040.64	
3.671	Method 1	1	9752.0710120.11	
3.643	Method 1	1	9749.8410157.33	
3.617	Method 1	1	9838.8110013.52	
3.577	Method 1	1	9921.01 10050.7	
3.515	Method 1	1	9967.6	10016
3.453	Method 1	1	9973.4 10034.5	
3.366	Method 1	1	9961.7	10028
3.274	Method 1	1	9973.7210028.26	
3.186	Method 1	1	9967.410048.31	
3.121	Method 1	1	9945 10024.9	
3.073	Method 1	1	9969.51 10047.3	
3.015	Method 1	1	9951.4710033.83	
2.923	Method 1	1	9969.0710035.27	
2.880	Method 1	1	9988.0410057.95	
2.848	Method 1	1	9974.0610082.83	
2.813	Method 1	1	9938.210009.38	
2.770	Method 1	1	9967.0210051.22	
2.674	Method 1	1	9953.210012.93	
2.611	Method 1	1	996510020.12	
2.557	Method 1	1	9977.1310031.47	
2.467	Method 1	1	9960.0710035.06	
2.390	Method 1	1	9927.8210043.92	
2.347	Method 1	1	9994.7410163.11	
2.312	Method 1	1	9911.5910035.19	
2.230	Method 1	1	9931.9310030.32	
2.134	Method 1	1	9945.6510012.64	
2.047	Method 1	1	9970.410040.39	
1.992	Method 1	1	9958.4110054.45	
1.928	Method 1	1	9981.5310034.07	
1.862	Method 1	1	9976.3710029.51	
1.768	Method 1	1	9963.9610022.66	
1.709	Method 1	1	9967.9810054.36	
1.675	Method 1	1	9979.74 10052.8	
1.637	Method 1	1	9983.71	10017
1.621	Method 1	1	9967.7910025.43	
1.590	Method 1	1	9968.4610034.51	
1.479	Method 1	1	9983.3810040.84	
1.398	Method 1	1	9988.1910018.43	
1.374	Method 1	1	9990.8410030.59	
1.367	Method 1	1	9981.1310012.61	
1.286	Method 1	1	9976.4210018.44	
1.208	Method 1	1	9970.5510021.38	
1.116	Method 1	1	9981.9910029.11	
1.010	Method 1	1	9986.7710013.13	
0.914	Method 1	1	9976.1410021.39	
0.850	Method 1	1	9978.0710032.34	
0.819	Method 1	1	9966.2310036.73	
0.724	Method 1	1	9954.5510034.85	
0.644	Method 1	1	9976.1510064.89	
0.575	Method 1	1	9978.28 10075.9	
0.547	Method 1	1	9974.210037.44	
0.523	Method 1	1	9976.5910069.25	
0.484	Method 1	1	9959.0810017.67	
0.453	Method 1	1	9961.2110019.61	
0.414	Method 1	1	9952.8410023.59	
0.356	Method 1	1	9969.9610107.72	
0.323	Method 1	1	9980.4510037.86	
0.238	Method 1	1	9985.3210140.19	
0.190	Method 1	1	9966.4310090.41	
0.141	Method 1	1	9930.0310011.69	
0.046	Method 1	1	993210044.84	

River = Unnamed 1 Reach = Reach 1

RS	Profile	Method	Value1	Value2
6.311	PF 3	1	9986.4510021.63	
6.216	PF 3	1	9944.2410042.03	
6.100	PF 3	1	9979.1610045.18	
6.015	PF 3	1	9976.8310018.83	
5.969	PF 3	1	992210019.42	
5.917	PF 3	1	9987.8110028.23	
5.862	PF 3	1	9974.7910023.36	
5.746	PF 3	1	9940 10023.5	
5.632	PF 3	1	9966.1 10015.5	
5.505	PF 3	1	9979.9610035.65	

```
5.439   PF 3                    1 9980.6610157.67
5.380   PF 3                    1 9987.7310062.35
5.310   PF 3                    1 9981.7610022.31
5.227   PF 3                    1    995510027.18
5.207   PF 3                    1  9968.110051.83
5.176   PF 3                    1 9983.5510033.72
5.096   PF 3                    1 9980.2210028.66
5.007   PF 3                    1 9975.4110057.71
4.920   PF 3                    1 9980.3210018.31
4.879   PF 3                    1  9979.810075.03
4.839   PF 3                    1 9978.33   10070
4.725   PF 3                    1 9966.77   10020
4.628   PF 3                    1 9957.0910045.54
4.613   PF 3                    1 9952.2210067.07
4.536   PF 3                    1 9983.29 10027.1
4.436   PF 3                    1    9905 10018.9
4.412   PF 3                    1 9970.33 10029.3
4.361   PF 3                    1    9964 10018.5
4.256   PF 3                    1 9974.56 10084.5
4.170   PF 3                    1 9983.5910083.85
4.077   PF 3                    1    9925 10021.4
3.987   PF 3                    1  9977.4   10050
3.895   PF 3                    1  9973.510062.23
3.803   PF 3                    1 9961.86 10053.6
3.706   PF 3                    1 9770.7710040.64
3.671   PF 3                    1 9752.0710120.11
3.643   PF 3                    1 9749.8410157.33
3.617   PF 3                    1 9838.8110013.52
3.577   PF 3                    1 9921.01 10050.7
3.515   PF 3                    1  9967.6   10016
3.453   PF 3                    1  9973.4 10034.5
3.366   PF 3                    1  9961.7   10028
3.274   PF 3                    1 9973.7210028.26
3.186   PF 3                    1  9967.410048.31
3.121   PF 3                    1    9945 10024.9
3.073   PF 3                    1 9969.51 10047.3
3.015   PF 3                    1 9951.4710033.83
2.923   PF 3                    1 9969.0710035.27
2.880   PF 3                    1 9988.0410057.95
2.848   PF 3                    1 9974.0610082.83
2.813   PF 3                    1  9938.210009.38
2.770   PF 3                    1 9967.0210051.22
2.674   PF 3                    1  9953.210012.93
2.611   PF 3                    1    996510020.12
2.557   PF 3                    1 9977.1310031.47
2.467   PF 3                    1 9960.0710035.06
2.390   PF 3                    1 9927.8210043.92
2.347   PF 3                    1 9994.7410163.11
2.312   PF 3                    1 9911.5910035.19
2.230   PF 3                    1 9931.9310030.32
2.134   PF 3                    1 9945.6510012.64
2.047   PF 3                    1  9970.410040.39
1.992   PF 3                    1 9958.4110054.45
1.928   PF 3                    1 9981.5310034.07
1.862   PF 3                    1 9976.3710029.51
1.768   PF 3                    1 9963.9610022.66
1.709   PF 3                    1 9967.9810054.36
1.675   PF 3                    1 9979.74 10052.8
1.637   PF 3                    1 9983.71   10017
1.621   PF 3                    1 9967.7910025.43
1.590   PF 3                    1 9968.4610034.51
1.479   PF 3                    1 9983.3810040.84
1.398   PF 3                    1 9988.1910018.43
1.374   PF 3                    1 9990.8410030.59
1.367   PF 3                    1 9981.1310012.61
1.286   PF 3                    1 9976.4210018.44
1.208   PF 3                    1 9970.5510021.38
1.116   PF 3                    1 9981.9910029.11
1.010   PF 3                    1 9986.7710013.13
0.914   PF 3                    1 9976.1410021.39
0.850   PF 3                    1 9978.0710032.34
0.819   PF 3                    1 9966.2310036.73
0.724   PF 3                    1 9954.5510034.85
0.644   PF 3                    1 9976.1510064.89
0.575   PF 3                    1 9978.28 10075.9
0.547   PF 3                    1  9974.210037.44
0.523   PF 3                    1 9976.5910069.25
0.484   PF 3                    1 9959.0810017.67
0.453   PF 3                    1 9961.2110019.61
0.414   PF 3                    1 9952.8410023.59
0.356   PF 3                    1 9969.9610107.72
0.323   PF 3                    1 9980.4510037.86
0.238   PF 3                    1 9985.3210140.19
0.190   PF 3                    1 9966.4310090.41
0.141   PF 3                    1 9930.0310011.69
0.046   PF 3                    1    993210044.84
```

FLOW DATA

Flow Title: 100-yr Existing Conditions
Flow File : p:\82000146\Calcs\HEC-RAS\FEMA\Unnamed_Wash1\Un1_FpFw.f01

Flow Data (cfs)

River	Reach	RS	Floodplain	Method 1
Unnamed 1	Reach 1	6.311	750	750
Unnamed 1	Reach 1	5.862	1190	1190
Unnamed 1	Reach 1	4.613	2330	2330
Unnamed 1	Reach 1	3.015	2890	2890
Unnamed 1	Reach 1	1.286	3190	3190

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Unnamed 1	Reach 1	Floodplain		Known WS = 1367.6
Unnamed 1	Reach 1	Method 1		Known WS = 1368.5

GEOMETRY DATA

Geometry Title: Existing Conditions
Geometry File : p:\82000146\Calcs\HEC-RAS\FEMA\Unnamed_Wash1\Un1_FpFw.g01

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 6.311

INPUT
Description: Upstream study limits at State Route 74.
100-year, 6-hour Peak
Discharge of 750 cfs from HEC-1 model at station S100.
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9957.1	1804.5	9960.6	1804.3	9988.1	1797	9994.6	1794	10006.9	1793.8
10007.9	1793.8	10009	1794	10019.3	1796.8	10027.7	1799.1	10040.6	1802.7
10043.5	1803.2	10049.5	1803.3	10050.4	1803.5	10057.7	1804	10059	1804

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9957.1	.05	9986.1	.04	10019.3	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.1	10019.3	500.34	502.22	485.2	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9972.60	9988.10	0.28	0.23	1.36	0.04	0.17	1.20
LB 9988.10	9994.34	70.81	11.16	6.87	9.44	1.79	6.34
9994.34	10000.58	218.82	21.17	6.27	29.18	3.39	10.33
10000.58	10006.82	230.71	21.82	6.24	30.76	3.50	10.57
10006.82	10013.06	179.80	18.98	6.41	23.97	3.04	9.47
10013.06	RB 10019.30	48.84	8.72	6.47	6.51	1.40	5.60
10019.30	10039.15	0.74	0.55	2.08	0.10	0.27	1.35

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9972.60	9988.10	0.29	0.24	1.38	0.04	0.18	1.21
LB 9988.10	9994.34	70.96	11.20	6.87	9.46	1.80	6.33
9994.34	10000.58	218.69	21.21	6.27	29.16	3.40	10.31
10000.58	10006.82	230.54	21.86	6.24	30.74	3.50	10.55
10006.82	10013.06	179.75	19.02	6.41	23.97	3.05	9.45
10013.06	RB 10019.30	49.02	8.76	6.47	6.54	1.40	5.60
10019.30	10039.15	0.76	0.56	2.10	0.10	0.28	1.36

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 6.216

INPUT

Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9877.5	1796	9905.1	1795.8	9914	1794.3	9921.9	1793.3	9941.3	1790.2
9945.8	1789.4	9946.5	1789.5	9954.5	1790	9960.1	1789.6	9960.2	1789.6
9977.3	1788.3	9979.7	1788.2	9983.9	1787.8	9995	1786.8	9999.9	1786.6
10001.3	1786.5	10005.2	1786.4	10014.5	1788.6	10016.3	1788.9	10016.4	1788.9
10037.9	1789.5	10040	1789.6	10041.3	1789.6	10041.7	1789.6	10052.5	1792.1
10071.9	1796.6								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9877.5	.05	9960.1	.04	10016.3	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960.1	10016.3	586.24	612.12	616.6	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9918.80	9960.10	3.16	2.88	14.07	0.42	0.21	1.10
LB 9960.10	9971.34	22.52	8.05	11.27	3.02	0.72	2.81
9971.34	9982.58	81.71	17.40	11.27	10.89	1.55	4.70
9982.58	9993.82	179.51	27.91	11.29	23.94	2.48	6.43
9993.82	10005.06	286.29	36.89	11.25	38.17	3.28	7.76
10005.06	RB 10016.30	145.80	24.84	11.52	19.44	2.21	5.87
10016.30	10027.42	20.29	9.39	11.12	2.71	0.84	2.16
10027.42	10038.54	9.44	5.93	11.12	1.26	0.53	1.59
10038.54	10049.66	1.17	1.18	4.48	0.16	0.27	0.99

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9918.80	9960.10	2.37	2.58	12.61	0.38	0.21	1.12
LB 9960.10	9971.34	22.15	7.90	11.27	2.95	0.70	2.80
9971.34	9982.58	81.40	17.25	11.27	10.85	1.53	4.72
9982.58	9993.82	179.82	27.76	11.29	23.98	2.47	6.48
9993.82	10005.06	287.42	36.74	11.25	38.32	3.27	7.82
10005.06	RB 10016.30	145.89	24.69	11.52	19.45	2.20	5.91
10016.30	10027.42	20.15	9.24	11.12	2.69	0.83	2.18
10027.42	10038.54	9.23	5.78	11.12	1.23	0.52	1.60
10038.54	10049.66	1.08	1.03	3.71	0.14	0.29	1.05

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 6.100

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9939.7	1788.3	9941	1788.3	9942	1788.3	9970.6	1782.2	9974.5	1781.3
9981.02	1779.91	9987.1	1778.6	9990.4	1778.5	9998.7	1777.5	10000.2	1777.3
10001.3	1777.6	10011.4	1779.7	10011.4	1779.8	10019.2	1779.3	10024.1	1779
10029.2	1776.3	10029.6	1776.1	10030.2	1775.9	10031.7	1775.9	10034.1	1775.9
10034.5	1775.9	10035.1	1776.6	10037.2	1778.8	10039.4	1778.8	10040.1	1778.8
10043.4	1779.8	10043.5	1779.8	10082.5	1792				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9939.7	.05	9981.02	.04	10011.4	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.02	10011.4	451.51	450.15	445.11	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10011.4	10082.5	1778

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9960.36	9981.02	1.04	0.60	2.43	0.14	0.25	1.73
LB 9981.02	9987.10	39.91	7.06	6.22	5.32	1.16	5.65
9987.10	9993.17	97.16	11.94	6.10	12.95	1.97	8.13
9993.17	9999.25	156.14	15.90	6.12	20.82	2.62	9.82
9999.25	10005.32	153.34	15.82	6.21	20.45	2.60	9.69
10005.32	RB 10011.40	50.70	8.19	6.31	6.76	1.35	6.19
10011.40	10025.62	56.25	15.73	14.44	7.50	1.11	3.57
10025.62	10039.84	181.42	31.91	14.61	24.19	2.24	5.68
10039.84	10054.06	14.05	4.78	5.87	1.87	0.85	2.94

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9960.36	9981.02	1.16	0.60	2.03	0.16	0.32	1.93
LB 9981.02	9987.10	40.21	7.15	6.22	5.36	1.18	5.62
9987.10	9993.17	96.99	12.04	6.10	12.93	1.98	8.05
9993.17	9999.25	155.35	16.00	6.12	20.71	2.63	9.71
9999.25	10005.32	152.57	15.92	6.21	20.34	2.62	9.58
10005.32	RB 10011.40	50.92	8.29	6.31	6.79	1.36	6.14
10011.40	10025.62	56.91	15.96	14.44	7.59	1.12	3.57
10025.62	10039.84	181.34	32.14	14.61	24.18	2.26	5.64
10039.84	10054.06	14.56	4.85	5.68	1.94	0.91	3.00

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 6.015

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9883.2	1779.9	9896.2	1778.9	9923.5	1775.5	9945.3	1774.7	9960	1774.2
9961.1	1774.2	9963.2	1773.6	9978.8	1770.6	9980.6	1770.2	9981.6	1770.2
9984.6	1769.7	9998.1	1767.6	10005.1	1767.9	10012	1768.2	10017.9	1770.6
10020.1	1771.5	10040.4	1779.7						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9883.2	.05	9978.8	.04	10017.9	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.8	10017.9	211.42	243.72	251.7	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9931.00	9978.80	0.49	0.37	2.01	0.06	0.19	1.30
LB 9978.80	9986.62	35.79	7.82	7.93	4.77	1.00	4.58
9986.62	9994.44	133.74	17.22	7.91	17.83	2.20	7.77
9994.44	10002.26	250.13	25.01	7.87	33.35	3.20	10.00
10002.26	10010.08	229.66	23.72	7.83	30.62	3.03	9.68
10010.08	RB 10017.90	100.00	14.74	8.29	13.33	1.88	6.79
10017.90	10029.15	0.18	0.18	1.00	0.02	0.19	1.04

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9931.00	9978.80	0.52	0.39	2.02	0.07	0.20	1.33
LB 9978.80	9986.62	36.12	7.89	7.93	4.82	1.01	4.58
9986.62	9994.44	133.83	17.30	7.91	17.84	2.21	7.74
9994.44	10002.26	249.75	25.09	7.87	33.30	3.21	9.96
10002.26	10010.08	229.38	23.79	7.83	30.58	3.04	9.64
10010.08	RB 10017.90	100.19	14.81	8.29	13.36	1.89	6.76
10017.90	10029.15	0.20	0.18	1.01	0.03	0.20	1.06

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 5.969

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9768	1779.8	9768.1	1779.8	9797.6	1770.7	9805.8	1768	9811.8	1767.3
9823.4	1767.6	9825	1767.7	9827.5	1767.7	9850.4	1767.5	9863.4	1767.4
9883.5	1767.4	9899.1	1767.4	9926.7	1767.4	9940	1766.2	9942.1	1766
9943.6	1765.9	9954.6	1767.3	9957.7	1767.7	9959.7	1767.7	9982.1	1767.6
9982.2	1767.6	9986.6	1766.9	9996.8	1765.2	10000.4	1764.7	10004.3	1764.6
10005.9	1764.4	10011.9	1766.5	10018.1	1768.1	10041.9	1774		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9768	.06	9982.2	.045	10018.1	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.2	10018.1	230	275.47	239.47	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9789.42	9810.84	5.01	3.91	6.44	0.67	0.62	1.28
9810.84	9832.26	31.28	18.99	21.43	4.17	0.89	1.65
9832.26	9853.68	29.88	18.47	21.42	3.98	0.86	1.62
9853.68	9875.10	38.92	21.64	21.42	5.19	1.01	1.80
9875.10	9896.52	40.01	22.01	21.42	5.34	1.03	1.82
9896.52	9917.94	40.01	22.01	21.42	5.33	1.03	1.82
9917.94	9939.36	64.14	29.24	21.47	8.55	1.36	2.19
9939.36	9960.78	87.30	35.23	21.55	11.64	1.64	2.48
9960.78	9982.20	25.28	16.71	21.42	3.37	0.78	1.51
LB 9982.20	9989.38	28.36	10.07	7.27	3.78	1.40	2.82
9989.38	9996.56	78.73	18.59	7.28	10.50	2.59	4.24
9996.56	10003.74	137.45	25.88	7.22	18.33	3.60	5.31
10003.74	10010.92	120.14	24.23	7.49	16.02	3.37	4.96
10010.92	RB 10018.10	23.36	9.05	7.44	3.12	1.26	2.58
10018.10	10030.00	0.10	0.22	1.36	0.01	0.16	0.47

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9917.94	9939.36	78.50	29.15	18.67	10.47	1.68	2.69
9939.36	9960.78	122.25	40.26	21.55	16.30	1.88	3.04
9960.78	9982.20	43.95	21.74	21.42	5.86	1.01	2.02
LB 9982.20	9989.38	41.57	11.76	7.27	5.54	1.64	3.54
9989.38	9996.56	103.03	20.28	7.28	13.74	2.82	5.08
9996.56	10003.74	172.90	27.57	7.22	23.05	3.84	6.27
10003.74	10010.92	152.17	25.92	7.49	20.29	3.61	5.87
10010.92	RB 10018.10	35.17	10.73	7.44	4.69	1.50	3.28
10018.10	10030.00	0.45	0.53	1.60	0.06	0.40	0.85

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 5.917

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9944.8	1774.1	9944.9	1774.1	9986.5	1765.5	9987.6	1765.3	9987.7	1765.2
9988.6	1764.8	9998.1	1760.8	10003.8	1761	10008.8	1761.3	10012.9	1762.6
10017	1764	10019.4	1764.2	10025.6	1764.6	10034.2	1766.4	10041	1767.8
10045	1768.6	10055.2	1770.3	10055.3	1770.3	10055.5	1770.3	10057.6	1770.8

10059.8 1770.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9944.8	.06	9988.6	.045	10017	.07

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
9988.6	10017	324.93	289.48	252.02	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9966.70	9988.60	0.12	0.14	0.86	0.02	0.17	0.90
LB 9988.60	9994.28	42.37	8.78	6.16	5.65	1.55	4.83
9994.28	9999.96	192.93	21.52	6.01	25.72	3.80	8.94
9999.96	10005.64	234.46	23.73	5.69	31.26	4.18	9.88
10005.64	10011.32	190.98	21.16	5.91	25.46	3.73	9.02
10011.32	RB 10017.00	72.79	12.01	5.99	9.71	2.11	6.06
10017.00	10025.56	15.57	7.15	8.58	2.08	0.83	2.18
10025.56	10034.12	0.77	0.74	2.72	0.10	0.28	1.04

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9966.70	9988.60	0.11	0.13	0.83	0.02	0.17	0.89
LB 9988.60	9994.28	42.10	8.71	6.16	5.61	1.53	4.83
9994.28	9999.96	193.14	21.51	6.01	25.75	3.79	8.98
9999.96	10005.64	234.83	23.66	5.69	31.31	4.17	9.92
10005.64	10011.32	191.17	21.10	5.81	25.49	3.71	9.06
10011.32	RB 10017.00	72.58	11.94	5.99	9.68	2.10	6.08
10017.00	10025.56	15.33	7.05	8.58	2.04	0.82	2.17
10025.56	10034.12	0.74	0.71	2.67	0.10	0.27	1.03

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 5.862

INPUT
Description: 100-year, 6-hour Peak Discharge of 1190 cfs from HEC-1 model at station C102R.
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9943.8	1769.9	9946.7	1769.2	9955.6	1767.2	9958.3	1766.7	9964.4	1764
9971.9	1760.9	9975.5	1759.9	9977.7	1759.3	9988.5	1756.3	9992.1	1756.4
10002.8	1756.1	10008.9	1757.2	10018.5	1758.4	10022.8	1759.9	10033.5	1763.7
10041	1765.8	10045.2	1766						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9943.8	.05	9975.5	.04	10022.8	.06

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
9975.5	10022.8	589.89	611.99	649.58	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.65	9975.50	0.06	0.07	0.74	0.00	0.10	0.81
LB 9975.50	9984.96	81.64	14.20	9.82	6.86	1.50	5.75
9984.96	9994.42	352.32	33.85	9.60	29.61	3.58	10.41
9994.42	10003.88	406.96	36.73	9.48	34.20	3.88	11.08
10003.88	10013.34	264.17	28.45	9.58	22.20	3.01	9.28
10013.34	RB 10022.80	84.82	14.50	9.75	7.13	1.53	5.85
10022.80	10034.00	0.04	0.05	0.59	0.00	0.10	0.67

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.65	9975.50	0.06	0.08	0.74	0.01	0.11	0.84

LB 9975.50	9984.96	81.96	14.27	9.82	6.89	1.51	5.74
9984.96	9994.42	352.07	33.92	9.60	29.59	3.59	10.38
9994.42	10003.88	406.57	36.80	9.48	34.17	3.89	11.05
10003.88	10013.34	264.15	28.52	9.58	22.20	3.01	9.26
10013.34	RB 10022.80	85.14	14.57	9.75	7.16	1.54	5.85
10022.80	10034.00	0.04	0.06	0.60	0.00	0.11	0.69

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 5.746

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9841.7	1766.4	9846.3	1766.6	9869.1	1755.3	9872.8	1753.5	9882.5	1753.1
9884.2	1752.9	9888.3	1752.1	9890	1751.8	9891.4	1751.8	9891.9	1751.7
9892.5	1751.7	9893.7	1751.7	9922.6	1750.9	9945.2	1750.5	9964.8	1750
9964.9	1750	9968.3	1749.6	9971.9	1749.2	9976.4	1749.2	9981.2	1749
9985.1	1749.1	9986.6	1749	9991.4	1748.6	9992.3	1748.5	9992.7	1748.5
10001.1	1748.5	10004.9	1748.4	10013.9	1750.3	10023.5	1751.5	10024.5	1751.6
10027.7	1751.7	10037.8	1752.3	10054.4	1758.6	10081.8	1768.1	10083.3	1768.3
10084.2	1768.5	10091.3	1769.4	10094.3	1769.7	10095.7	1769.9		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9841.7	.05	9964.9	.04	10023.5	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9964.9	10023.5	616.79	600.4	486.61	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9866.34	9890.98	0.07	0.14	1.61	0.01	0.09	0.48
9890.98	9915.62	17.50	11.74	24.66	1.47	0.48	1.49
9915.62	9940.26	69.96	26.96	24.65	5.88	1.09	2.60
9940.26	9964.90	132.03	39.46	24.65	11.10	1.60	3.35
LB 9964.90	9976.62	172.19	28.99	11.77	14.47	2.47	5.94
9976.62	9988.34	219.62	33.52	11.73	18.46	2.86	6.55
9988.34	10000.06	285.33	39.22	11.74	23.98	3.35	7.28
10000.06	10011.78	243.66	35.84	11.87	20.48	3.06	6.80
10011.78	RB 10023.50	48.40	13.57	11.84	4.07	1.16	3.57
10023.50	10059.60	1.22	1.56	7.74	0.10	0.20	0.78

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9915.62	9940.26	0.36	0.36	1.64	0.03	1.38	1.00
9940.26	9964.90	157.17	40.94	24.65	13.21	1.66	3.84
LB 9964.90	9976.62	184.39	29.70	11.77	15.49	2.53	6.21
9976.62	9988.34	233.93	34.22	11.73	19.66	2.92	6.84
9988.34	10000.06	302.41	39.92	11.74	25.41	3.41	7.58
10000.06	10011.78	258.95	36.54	11.87	21.76	3.12	7.09
10011.78	RB 10023.50	52.79	14.28	12.31	4.44	1.22	3.70

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 5.632

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9938.2	1752.3	9938.5	1752.3	9948.5	1749.9	9955	1748.3	9956.5	1747.9
9958.4	1747.4	9960	1746.9	9970.4	1745.2	9979.9	1743.3	9989.2	1742.2
9997.2	1741.6	10006.2	1741	10011.5	1743.1	10015.5	1744.7	10037.8	1747.6
10043.6	1748.4	10045	1748.7	10055.8	1751.3	10071.8	1757.2	10072	1757.3
10072.4	1757.4	10080.5	1759.8	10080.8	1759.8				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9938.2	.05	9970.4	.04	10015.5	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970.4	10015.5	631.09	672.93	668.96	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9954.30	9970.40	2.21	1.51	4.36	0.19	0.35	1.46
LB 9970.40	9979.42	68.45	14.47	9.20	5.75	1.60	4.73
9979.42	9988.44	204.40	27.77	9.09	17.18	3.08	7.36
9988.44	9997.46	314.89	35.92	9.05	26.46	3.98	8.77
9997.46	10006.48	402.79	41.66	9.06	33.85	4.62	9.67
10006.48	RB 10015.50	187.52	27.07	9.71	15.76	3.00	6.93
10015.50	10048.15	9.73	5.56	9.33	0.82	0.60	1.75

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9954.30	9970.40	2.98	1.84	4.43	0.25	0.43	1.63
LB 9970.40	9979.42	72.78	15.15	9.20	6.12	1.68	4.80
9979.42	9988.44	209.58	28.45	9.09	17.61	3.15	7.37
9988.44	9997.46	319.94	36.60	9.05	26.89	4.06	8.74
9997.46	10006.48	407.49	42.34	9.06	34.24	4.69	9.62
10006.48	RB 10015.50	177.23	27.75	10.99	14.89	3.08	6.39

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 5.505

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9896	1749.7	9897.8	1749.6	9899	1749.5	9919.2	1747.7	9919.4	1747.7
9935.6	1745.3	9936.9	1745.1	9947.6	1743.4	9948.1	1743.3	9953.4	1742.7
9955.2	1742.5	9955.5	1742.4	9962.4	1741.2	9970.7	1739.8	9973.7	1739.2
9975.4	1739	9979	1737.9	9980.8	1737.3	9989.8	1734.4	9996.5	1734
9998.1	1734	10018	1734.9	10029.2	1735.5	10030.2	1735.8	10034.8	1737.3
10059.7	1745.5	10071.8	1750.3	10086.1	1752.9				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9896	.05	9980.8	.04	10034.8	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980.8	10034.8	358.44	349.58	297.83	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9938.40	9980.80	0.11	0.12	0.88	0.01	0.14	0.95
LB 9980.80	9991.60	143.87	21.38	11.26	12.09	1.98	6.73
9991.60	10002.40	377.35	37.52	10.81	31.71	3.47	10.06
10002.40	10013.20	318.97	33.92	10.81	26.80	3.14	9.40
10013.20	10024.00	238.49	28.49	10.81	20.04	2.64	8.37
10024.00	RB 10034.80	111.10	18.20	11.09	9.34	1.69	6.11
10034.80	10060.45	0.09	0.12	0.89	0.01	0.14	0.79

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9938.40	9980.80	0.08	0.09	0.77	0.01	0.12	0.89
LB 9980.80	9991.60	142.74	21.01	11.26	11.99	1.95	6.79
9991.60	10002.40	379.15	37.15	10.81	31.86	3.44	10.21
10002.40	10013.20	319.93	33.55	10.81	26.89	3.11	9.54
10013.20	10024.00	238.37	28.12	10.81	20.03	2.60	8.48
10024.00	RB 10034.80	109.66	17.83	11.09	9.22	1.65	6.15
10034.80	10060.45	0.07	0.09	0.78	0.01	0.12	0.74

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 5.439

INPUT
Description:

Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9917.7	1738.2	9920.4	1738.1	9941.4	1737	9943.5	1736.8	9945.1	1736.7
9947.4	1736.4	9953.6	1735.4	9957.1	1735	9966.4	1733.5	9968.4	1733.2
9981.4	1731.3	9981.6	1731.2	9985.9	1729.3	9993.1	1726.8	10001.5	1726.6
10003.1	1726.5	10012.9	1729.3	10021	1731.9	10021.2	1731.9	10031.4	1731.7
10031.5	1731.7	10043.7	1731.9	10048.6	1732.2	10090.8	1732.6	10094.3	1732.6
10094.5	1732.6	10095	1732.6	10107.8	1732.3	10117.4	1732.1	10133.6	1731.9
10144.1	1730	10148.4	1729.2	10163.1	1732.7	10165	1733.1	10165.5	1733
10166.3	1733	10167.9	1733	10179.3	1732.1	10192.2	1733	10196.8	1733.7
10200.6	1734	10207.1	1734.7	10211.7	1735	10215.3	1735.4	10217	1735.6
10223.2	1735.8	10226.6	1735.9	10238.6	1736.2	10249.7	1736.8	10254.9	1736.8
10262.7	1737.2	10269.4	1737.7	10274.6	1738.1	10276.8	1738.3	10280.8	1738.7

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9917.7	.06	9981.6	.045	10021.2	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.6	10021.2	304.7	308.38	186.86	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9949.65	9981.60	0.04	0.07	0.97	0.00	0.06	0.60
LB 9981.60	9989.52	87.87	14.88	8.53	7.38	1.86	5.90
9989.52	9997.44	368.35	34.49	8.13	30.95	4.36	10.68
9997.44	10005.36	426.75	37.46	8.02	35.86	4.73	11.39
10005.36	10013.28	210.54	24.79	8.24	17.69	3.13	8.49
10013.28	RB 10021.20	24.11	6.14	6.50	2.03	0.99	3.93
10021.20	10125.04						
10125.04	10151.00	59.49	18.08	14.81	5.00	1.24	3.29
10151.00	10176.96	12.85	5.30	6.86	1.08	0.79	2.43

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9949.65	9981.60	0.08	0.11	1.01	0.01	0.12	0.76
LB 9981.60	9989.52	89.16	15.19	8.53	7.49	1.92	5.87
9989.52	9997.44	366.49	34.80	8.13	30.80	4.39	10.53
9997.44	10005.36	424.10	37.77	8.02	35.64	4.77	11.23
10005.36	10013.28	210.71	25.10	8.24	17.71	3.17	8.39
10013.28	RB 10021.20	24.90	6.39	6.63	2.09	1.01	3.90
10021.20	10125.04						
10125.04	10151.00	60.93	18.66	15.02	5.12	1.27	3.27
10151.00	10176.96	13.63	5.56	6.90	1.15	0.83	2.45

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 5.380

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9950.7	1733.7	9956.2	1733.4	9956.3	1733.3	9956.4	1733.3	9982.2	1727.3
9987	1726.1	9987.6	1725.8	9988.4	1725.4	9993.7	1722.8	9999.2	1722.3
10004.5	1721.9	10008.1	1723.2	10010.4	1723.5	10010.7	1723.4	10012	1723.1
10016.3	1723.2	10026.1	1723	10029.9	1722.9	10038.7	1722.9	10039.4	1722.9
10050.2	1722.7	10055.8	1722.4	10057.1	1722.3	10059.7	1722.2	10067	1722
10074.2	1723.1	10079.9	1723.8	10093.3	1724.6	10106.4	1725.2	10108.3	1725.7
10117.8	1728.1	10120.1	1728.7	10122.1	1729.4	10129.3	1732.2		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9950.7	.05	9988.4	.04	10010.4	.06

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

9986.4 10010.4 320.42 372.83 351.4 .3 .5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.55	9988.40	0.06	0.11	0.75	0.01	0.17	0.67
LB 9988.40	9992.80	20.40	6.23	4.90	1.71	1.41	3.28
9992.80	9997.20	76.07	13.27	4.52	6.39	3.02	5.73
9997.20	10001.60	96.30	15.15	4.42	8.09	3.44	6.36
10001.60	10006.00	105.71	16.15	4.50	8.88	3.67	6.55
10006.00	RB 10010.40	60.52	11.61	4.55	5.09	2.64	5.21
10010.40	10027.39	153.29	44.40	17.04	12.88	2.61	3.45
10027.39	10044.37	176.79	48.31	16.99	14.86	2.84	3.66
10044.37	10061.36	216.53	54.58	17.00	18.20	3.21	3.97
10061.36	10078.34	208.26	53.44	17.10	17.50	3.15	3.90
10078.34	10095.33	62.66	25.95	17.02	5.27	1.53	2.41
10095.33	10112.31	13.39	9.28	13.19	1.13	0.71	1.44

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.55	9988.40	0.14	0.15	0.80	0.01	0.22	0.94
LB 9988.40	9992.80	26.75	6.44	4.90	2.25	1.46	4.15
9992.80	9997.20	96.83	13.49	4.52	8.14	3.07	7.18
9997.20	10001.60	122.18	15.37	4.42	10.27	3.49	7.95
10001.60	10006.00	133.92	16.37	4.50	11.25	3.72	8.18
10006.00	RB 10010.40	77.33	11.82	4.55	6.50	2.69	6.54
10010.40	10027.39	204.12	45.24	17.04	17.15	2.66	4.51
10027.39	10044.37	234.84	49.15	16.99	19.73	2.89	4.78
10044.37	10061.36	286.69	55.41	17.00	24.09	3.26	5.17
10061.36	10078.34	7.19	3.62	4.65	0.60	3.64	1.99

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 5.310

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9948.8	1728.8	9952.1	1728.5	9956.8	1728.1	9961.7	1727.5	9965.5	1726.1
9967.3	1725.7	9976.9	1722.5	9982.4	1720.5	9992.6	1716.7	9994.4	1716.1
9997.4	1716.3	10009.8	1716.6	10010.1	1716.7	10021.6	1720.5	10042.4	1727.3
10045.5	1728.4	10046	1728.4	10054.9	1730.2	10071.7	1733.4		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9948.8	.05	9982.4	.04	10021.6	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.4	10021.6	421.6	435.07	440	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9965.60	9982.40	0.06	0.08	0.68	0.01	0.12	0.86
LB 9982.40	9990.24	77.06	13.28	8.37	6.48	1.69	5.80
9990.24	9998.08	356.82	32.89	8.10	29.98	4.20	10.85
9998.08	10005.92	383.22	33.89	7.84	32.20	4.32	11.31
10005.92	10013.76	307.27	30.00	8.05	25.82	3.83	10.24
10013.76	RB 10021.60	65.52	11.99	8.26	5.51	1.53	5.47
10021.60	10046.65	0.06	0.08	0.75	0.01	0.12	0.72

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9965.60	9982.40	0.38	0.28	1.00	0.03	0.44	1.36
LB 9982.40	9990.24	88.62	15.78	8.37	7.45	2.01	5.62
9990.24	9998.08	347.86	35.39	8.10	29.23	4.51	9.83
9998.08	10005.92	372.31	36.39	7.84	31.29	4.64	10.23
10005.92	10013.76	302.96	32.49	8.05	25.46	4.14	9.32
10013.76	RB 10021.60	77.51	14.49	8.26	6.51	1.85	5.35

10021.60	10046.65	0.36	0.31	1.07	0.03	0.44	1.16

Warning: The energy loss was greater than 1.0 ft (0.3 m), between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 5.227

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9881.7	1720.8	9888.3	1720.8	9893.4	1718.6	9913.9	1715	9932.6	1714.7
9935.2	1714.7	9948.4	1714.6	9963.6	1714.5	9968.2	1714.5	9980.8	1714.3
9989.2	1712.1	9990.8	1711.7	9991.2	1711.6	9999	1711.5	10004.2	1711.4
10007.4	1712.1	10010.2	1712.7	10015.2	1713.4	10021.9	1714.6	10023.7	1715.1
10026	1715.6	10028	1716	10038.9	1718.1	10046.3	1719.5	10064.1	1720.5
10088.1	1721.8								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9881.7	.06	9980.8	.045	10026	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980.8	10026	133.79	104.47	92.26	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9901.52	9921.34	16.34	8.16	11.13	1.37	0.74	2.00
9921.34	9941.16	56.43	21.62	19.82	4.74	1.09	2.61
9941.16	9960.98	70.97	24.80	19.82	5.96	1.25	2.86
9960.98	9980.80	85.31	27.70	19.82	7.17	1.40	3.08
LB 9980.80	9989.84	145.44	24.58	9.34	12.22	2.72	5.92
9989.84	9998.88	308.44	38.13	9.07	25.92	4.22	8.09
9998.88	10007.92	309.54	38.31	9.13	26.01	4.24	8.08
10007.92	10016.96	158.05	25.64	9.17	13.28	2.84	6.16
10016.96	RB 10026.00	39.40	11.18	9.24	3.31	1.24	3.53
10026.00	10057.05	0.07	0.14	1.20	0.01	0.12	0.51

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9941.16	9960.98	21.59	7.31	7.18	1.81	1.22	2.95
9960.98	9980.80	92.08	26.21	19.82	7.74	1.32	3.51
LB 9980.80	9989.84	161.47	23.90	9.34	13.57	2.64	6.76
9989.84	9998.88	348.22	37.45	9.07	29.26	4.14	9.30
9998.88	10007.92	349.51	37.63	9.13	29.37	4.16	9.29
10007.92	10016.96	175.82	24.96	9.17	14.77	2.76	7.04
10016.96	RB 10026.00	41.29	10.50	9.24	3.47	1.16	3.93
10026.00	10057.05	0.03	0.06	0.82	0.00	0.08	0.46

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 5.207

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9918.9	1719.4	9928.1	1719.5	9930.6	1719.5	9932.7	1719.6	9945.4	1716.8
9955.9	1714.6	9963.2	1714	9968.1	1713.7	9968.1	1713.6	9978.5	1711.9
9979.4	1711.8	9985.1	1711.3	9987.5	1711.3	9988.6	1711.1	9994.1	1710.5
9996.2	1710.4	10006.6	1710.6	10009.2	1710.6	10013.2	1711.4	10020.6	1712.7
10028.3	1713.3	10039.3	1714.1	10046.7	1714.8	10057.4	1715.8	10069.2	1716.7
10074.8	1717.1	10089.6	1718.3	10091.6	1718.4	10094.5	1718.7	10097.8	1718.9
10108.7	1719.7	10117.5	1720.4						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9918.9	.06	9968.1	.045	10020.6	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.1	10020.6	178.73	164.6	122.28	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9951.70	9968.10	24.96	15.26	15.55	2.10	0.99	1.64
LB 9968.10	9978.60	105.07	26.65	10.74	8.83	2.54	3.94
9978.60	9989.10	210.57	40.15	10.55	17.69	3.82	5.24
9989.10	9999.60	295.35	49.16	10.53	24.82	4.68	6.01
9999.60	10010.10	299.32	49.53	10.52	25.15	4.72	6.04
10010.10	RB 10020.60	181.39	36.89	10.67	15.24	3.51	4.92

10020.60	10052.90	73.35	42.30	31.34	6.16	1.35	1.73

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9968.10	9978.60	98.68	26.66	12.32	8.29	2.54	3.70
9978.60	9989.10	216.63	40.16	10.55	18.20	3.82	5.39
9989.10	9999.60	303.62	49.17	10.53	25.53	4.68	6.18
9999.60	10010.10	307.91	49.54	10.52	25.87	4.72	6.22
10010.10	RB 10020.60	186.62	36.90	10.67	15.68	3.51	5.06
10020.60	10052.90	76.36	42.33	31.34	6.42	1.36	1.80

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 5.176

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9928.1	1723.1	9932.1	1723	9938.3	1722.8	9940.6	1722.6	9949.1	1722
9964.3	1721.4	9966.2	1721.2	9966.7	1721.2	9971.3	1719	9983.8	1712.8
9992	1708.8	10004.5	1708.5	10007.7	1708.4	10010	1709.1	10016	1710.7
10016.1	1710.7	10045.4	1714.4	10060.6	1716.3	10067.8	1717.1	10073	1717.7
10080.2	1718.2	10082.6	1718.3	10087.1	1718.7	10094.1	1719.4	10095.2	1719.6
10104.7	1720.7	10107.1	1721	10115.9	1722	10119.7	1722.5	10125.7	1723.3
10131	1723.8	10137.2	1724.5	10142	1725	10150.2	1726.8	10151.8	1727.1
10162.2	1728.9	10166.4	1729.7						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9928.1	.05	9983.8	.04	10016	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.8	10016	370.18	425.37	451.12	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9955.95	9983.80	0.01	0.02	0.28	0.00	0.06	0.52
LB 9983.80	9990.24	60.52	10.92	7.17	5.09	1.70	5.54
9990.24	9996.68	271.58	26.07	6.64	22.82	4.05	10.42
9996.68	10003.12	308.17	27.78	6.44	25.90	4.31	11.09
10003.12	10009.56	314.83	28.29	6.53	26.46	4.39	11.13
10009.56	RB 10016.00	172.08	19.86	6.67	14.46	3.08	8.66
10016.00	10066.80	62.81	19.82	17.86	5.28	1.12	3.17

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9955.95	9983.80	0.02	0.03	0.33	0.00	0.11	0.67
LB 9983.80	9990.24	62.03	11.25	7.17	5.21	1.75	5.51
9990.24	9996.68	270.37	26.40	6.64	22.72	4.10	10.24
9996.68	10003.12	306.41	28.12	6.44	25.75	4.37	10.90
10003.12	10009.56	312.92	28.62	6.53	26.30	4.45	10.93
10009.56	RB 10016.00	172.46	20.20	6.67	14.49	3.14	8.54
10016.00	10066.80	65.79	20.74	17.91	5.53	1.17	3.17

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the

cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 5.096

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9902.5	1714	9913.9	1713.3	9917.1	1713.1	9938.7	1711.9	9942.3	1711.7
9943.1	1711.6	9951.1	1711.3	9960.8	1710.9	9965.1	1710.1	9981.8	1706.8
9988.6	1704.1	9992.8	1702.4	9998.7	1702.5	10003.8	1702.6	10006	1703
10009	1703.7	10018.9	1704.7	10022.4	1705.1	10028	1706.9	10035.4	1709.3
10049.6	1714.1								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9902.5	.05	9981.8	.04	10028	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.8	10028	471.85	467.51	464.25	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9942.15	9981.80	0.23	0.25	1.61	0.02	0.16	0.93
LB 9981.80	9991.04	117.29	19.86	9.95	9.86	2.15	5.90
9991.04	10000.28	432.37	42.44	9.38	36.33	4.59	10.19
10000.28	10009.52	368.72	38.54	9.36	30.99	4.17	9.57
10009.52	10018.76	201.50	26.74	9.29	16.93	2.89	7.54
10018.76	RB 10028.00	69.85	14.32	9.55	5.87	1.55	4.88
10028.00	10038.80	0.04	0.07	0.69	0.00	0.11	0.59

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9942.15	9981.80	0.27	0.28	1.63	0.02	0.18	0.98
LB 9981.80	9991.04	117.69	20.03	9.95	9.91	2.17	5.88
9991.04	10000.28	431.32	42.61	9.38	36.25	4.61	10.12
10000.28	10009.52	368.07	38.71	9.36	30.93	4.19	9.51
10009.52	10018.76	201.80	26.91	9.29	16.96	2.91	7.50
10018.76	RB 10028.00	70.59	14.49	9.55	5.93	1.57	4.87
10028.00	10038.80	0.05	0.08	0.71	0.00	0.12	0.63

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 5.007

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9918.5	1720	9919	1719.9	9923.6	1719.1	9927.6	1717.2	9930	1716.3
9933.2	1715.4	9935.4	1714.6	9941.2	1713.9	9946.4	1713.2	9957.2	1709.1
9966.1	1706	9982.4	1700.4	9984.7	1700.1	9988.5	1699.7	9994	1698
9995.1	1697.6	10005.3	1697.4	10006.3	1697.4	10009.2	1698.6	10017.8	1701.8
10017.9	1701.8	10027.2	1701.5	10033.7	1701.5	10040.1	1701.8	10057.7	1702.8
10060.5	1703.2	10072.1	1704.7	10098.9	1708.4	10119.8	1708.8	10140.8	1709.1
10152.6	1709.1								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9918.5	.05	9988.5	.04	10017.8	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.5	10017.8	443.93	461.58	472.84	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.50	9988.50	100.19	25.29	13.53	8.42	1.93	3.96
LB 9988.50	9994.36	178.22	23.49	6.14	14.98	4.01	7.59
9994.36	10000.22	284.72	30.64	5.91	23.93	5.23	9.29
10000.22	10006.08	298.26	31.40	5.86	25.06	5.36	9.50
10006.08	10011.94	197.73	25.23	6.28	16.62	4.31	7.84
10011.94	RB 10017.80	59.58	12.26	6.25	5.01	2.09	4.86
10017.80	10044.76	66.43	30.70	26.98	5.58	1.14	2.16
10044.76	10071.72	4.88	4.78	12.97	0.41	0.37	1.02

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.50	9988.50	99.64	24.96	13.45	8.37	1.92	3.99
LB 9988.50	9994.36	178.47	23.34	6.14	15.00	3.98	7.65
9994.36	10000.22	285.83	30.49	5.91	24.02	5.20	9.37
10000.22	10006.08	299.48	31.26	5.86	25.17	5.33	9.58
10006.08	10011.94	198.15	25.08	6.28	16.65	4.28	7.90
10011.94	RB 10017.80	59.09	12.11	6.25	4.97	2.07	4.88
10017.80	10044.76	64.83	30.02	26.98	5.45	1.11	2.16
10044.76	10071.72	4.50	4.46	12.55	0.38	0.36	1.01

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 4.920

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9911.6	1704.1	9923.7	1704.3	9928.1	1704.6	9935.7	1702.1	9949.3	1697.5
9952.2	1697.2	9973	1696.9	9982.8	1697	9989.7	1695.2	9995.8	1693.6
10007.6	1693.7	10008.3	1693.7	10008.8	1693.9	10016	1697.1	10017.4	1697.8
10020.8	1699.3	10030.2	1703.3	10035.7	1704.2	10039.7	1704.8	10042.7	1705
10057.5	1705.1	10058	1705.1	10092.8	1704.6	10096.9	1704.5	10098.2	1704.5
10103.9	1704.3	10108.2	1704.2	10112.3	1704.2	10117.4	1704		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9911.6	.05	9982.8	.04	10017.4	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.8	10017.4	217.01	217.23	200.01	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9940.08	9954.32	14.07	5.35	7.23	1.18	0.75	2.63
9954.32	9968.56	56.42	16.16	14.24	4.74	1.14	3.49
9968.56	9982.80	66.92	17.91	14.24	5.62	1.26	3.74
LB 9982.80	9989.72	89.24	14.56	7.15	7.50	2.10	6.13
9989.72	9996.64	250.20	26.99	7.13	21.02	3.90	9.27
9996.64	10003.56	331.66	31.60	6.92	27.87	4.57	10.50
10003.56	10010.48	302.04	30.21	7.12	25.38	4.37	10.00
10010.48	RB 10017.40	79.29	13.90	7.61	6.66	2.01	5.70
10017.40	10037.40	0.16	0.18	1.00	0.01	0.20	0.88

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.56	9982.80	13.00	4.57	4.34	1.09	1.84	2.84
LB 9982.80	9989.72	118.21	18.92	7.15	9.93	2.73	6.25
9989.72	9996.64	274.90	31.36	7.13	23.10	4.53	8.77
9996.64	10003.56	352.19	35.96	6.92	29.60	5.20	9.79
10003.56	10010.48	323.71	34.57	7.12	27.20	5.00	9.36
10010.48	RB 10017.40	106.96	18.27	7.61	8.99	2.64	5.86
10017.40	10037.40	1.04	0.76	1.62	0.09	0.83	1.37

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 4.879

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9916.4	1703.8	9919.5	1703.7	9930	1703	9950	1695.3	9953.5	1693.8
9954.4	1694.1	9955.7	1694.5	9958.7	1695.5	9975	1695.3	9979.7	1695.2
9979.8	1695.2	9990.4	1692.3	9990.6	1692.3	9991.1	1692.3	10005	1692.3
10012.5	1695.2	10013.9	1695.8	10014	1695.8	10014.8	1695.8	10024.7	1695.6
10028.8	1695.8	10036.3	1696	10039.6	1696	10048.9	1696.2	10058.4	1696
10061.4	1696	10066.8	1695.6	10074.4	1694.7	10077.8	1694.8	10083.4	1695.3
10091.8	1693.1	10092.8	1692.9	10096.3	1693.5	10103.8	1694.8	10106.6	1695.5
10115.2	1697.5	10120.5	1698.4	10125.4	1699.3	10128.6	1700	10135.9	1701.3
10138.1	1701.8	10146.1	1703.3						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9916.4	.06	9979.8	.045	10014	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.8	10014	233.03	210.17	100.03	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9941.76	9954.44	35.12	13.71	9.05	2.95	1.63	2.56
9954.44	9967.12	53.27	20.28	12.90	4.48	1.60	2.63
9967.12	9979.80	49.36	19.24	12.68	4.15	1.52	2.57
LB 9979.80	9986.64	79.52	17.54	7.09	6.68	2.56	4.53
9986.64	9993.48	186.29	29.04	6.98	15.65	4.25	6.42
9993.48	10000.32	210.25	30.98	6.84	17.67	4.53	6.79
10000.32	10007.16	197.13	30.07	7.00	16.57	4.40	6.56
10007.16	RB 10014.00	67.83	16.17	7.35	5.70	2.36	4.20
10014.00	10027.21	23.60	14.92	13.21	1.98	1.13	1.58
10027.21	10040.42	16.56	12.06	13.21	1.39	0.91	1.37
10040.42	10053.63	10.75	9.31	13.21	0.90	0.70	1.15
10053.63	10066.84	15.95	11.80	13.23	1.34	0.89	1.35
10066.84	10080.05	52.36	24.11	13.27	4.40	1.82	2.17
10080.05	10093.26	88.61	33.31	13.53	7.45	2.52	2.66
10093.26	10106.47	99.02	35.52	13.45	8.32	2.69	2.79
10106.47	10119.68	4.39	3.97	6.00	0.37	0.68	1.11

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9979.80	9986.64	96.53	19.00	8.93	8.28	2.78	5.19
9986.64	9993.48	255.70	30.50	6.98	21.49	4.46	8.38
9993.48	10000.32	287.14	32.44	6.84	24.13	4.74	8.85
10000.32	10007.16	269.83	31.53	7.00	22.68	4.61	8.56
10007.16	RB 10014.00	99.10	17.63	7.35	8.33	2.58	5.62
10014.00	10027.21	45.42	17.74	13.21	3.82	1.34	2.56
10027.21	10040.42	33.89	14.88	13.21	2.85	1.13	2.28
10040.42	10053.63	24.10	12.13	13.21	2.02	0.92	1.99
10053.63	10066.84	32.87	14.62	13.23	2.76	1.11	2.25
10066.84	10080.05	43.42	15.79	10.57	3.65	1.93	2.75

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 4.839

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9941.6	1720.8	9942.4	1721	9946.2	1719.2	9951.2	1718.1	9955.6	1716.7
9955.7	1716.7	9958.5	1712.6	9975.4	1697.1	9978.6	1694.6	9982.3	1691.7
9990.7	1691.7	9995.1	1691.6	9998.4	1691	9999	1690.9	9999.8	1690.8
10004.9	1690.2	10014.1	1692.3	10015.3	1692.6	10015.4	1692.6	10017.7	1692.8
10027.5	1693.8	10033	1693.9	10046.8	1694.2	10048.6	1694.4	10049.7	1694.5
10056.7	1695	10065.2	1694.9	10074	1694.8	10081.9	1692.7	10084.9	1691.9
10087.9	1692.5	10097.3	1694.5	10103.2	1695.6	10104.9	1696	10124.3	1696.1
10125	1696.1	10125.1	1696.1	10125.2	1696.1	10146.2	1700.4	10155.5	1702
10158.1	1702.5	10164.2	1703.9						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9941.6	.05	9978.6	.04	10015.3	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.6	10015.3	556.24	603.05	622.93	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9960.10	9978.60	0.02	0.03	0.35	0.00	0.11	0.58
LB 9978.60	9985.94	104.99	17.49	8.34	8.82	2.38	6.00
9985.94	9993.28	179.55	22.93	7.34	15.09	3.12	7.83
9993.28	10000.62	223.12	26.23	7.42	18.75	3.57	8.51
10000.62	10007.96	305.34	31.72	7.45	25.66	4.32	9.63
10007.96	RB 10015.30	171.89	22.58	7.53	14.44	3.08	7.61
10015.30	10033.91	76.66	26.05	18.67	6.44	1.40	2.94
10033.91	10052.53	20.07	11.65	18.64	1.69	0.63	1.72
10052.53	10071.14	0.03	0.09	1.58	0.00	0.06	0.35
10071.14	10089.75	88.89	27.72	17.47	7.47	1.63	3.21
10089.75	10108.36	19.43	8.70	9.43	1.63	0.94	2.23

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9960.10	9978.60	0.12	0.13	0.74	0.01	0.50	0.87
LB 9978.60	9985.94	121.05	20.37	8.34	10.17	2.77	5.94
9985.94	9993.28	195.59	25.81	7.34	16.44	3.52	7.58
9993.28	10000.62	237.40	29.11	7.42	19.95	3.97	8.16
10000.62	10007.96	315.69	34.60	7.45	26.53	4.71	9.13
10007.96	RB 10015.30	187.80	25.45	7.53	15.78	3.47	7.38
10015.30	10033.91	92.08	33.34	18.67	7.74	1.79	2.76
10033.91	10052.53	35.92	18.94	18.64	3.02	1.02	1.90
10052.53	10071.14	4.36	5.25	17.85	0.37	0.30	0.83

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 4.725

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9902.5	1698.7	9904	1697.5	9915	1694.4	9922.7	1692.2	9928	1689.1
9930.4	1687.5	9938.6	1686.1	9939.1	1686	9939.5	1686	9951.6	1686.1
9953.4	1686.4	9970.2	1686.3	9978	1685.2	9978.8	1685.1	9983.7	1684.8
9994.2	1684.1	9997.4	1684.5	10002	1685	10006.4	1685.4	10008	1685.7
10008	1685.8	10023.3	1686.3	10028.2	1686.7	10034.9	1688.6	10044.3	1690.3
10044.6	1690.3	10044.7	1690.4	10045.4	1690.5	10050.2	1690.9	10053.4	1691.9
10066.3	1695	10078	1697.8						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9902.5	.05	9970.2	.04	10008	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970.2	10008	468.06	507.76	505.61	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9929.58	9943.12	53.04	14.34	13.12	4.46	1.11	3.70
9943.12	9956.66	90.60	20.05	13.57	7.61	1.48	4.52
9956.66	9970.20	73.79	17.71	13.54	6.20	1.31	4.17
LB 9970.20	9977.76	92.63	14.22	7.63	7.78	1.88	6.51
9977.76	9985.32	171.25	20.51	7.58	14.39	2.71	8.35
9985.32	9992.88	226.61	24.25	7.58	19.04	3.21	9.34
9992.88	10000.44	228.47	24.41	7.61	19.20	3.23	9.36
10000.44	RB 10008.00	141.19	18.39	7.71	11.86	2.43	7.68
10008.00	10031.33	112.42	31.66	23.48	9.45	1.36	3.55
10031.33	10054.67	0.00	0.01	0.22	0.00	0.03	0.27

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9956.66	9970.20	21.51	5.37	4.99	1.81	1.56	4.01
LB 9970.20	9977.76	121.93	15.94	7.63	10.25	2.11	7.65
9977.76	9985.32	213.18	22.22	7.58	17.91	2.94	9.59
9985.32	9992.88	276.52	25.97	7.58	23.24	3.43	10.65
9992.88	10000.44	278.59	26.12	7.61	23.41	3.46	10.66
10000.44	RB 10008.00	178.37	20.11	7.71	14.99	2.66	8.87
10008.00	10031.33	99.92	22.55	13.69	8.40	1.88	4.43

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

Warning: *During the standard step iterations, when the assumed water surface was set equal to* critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 4.628

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9895.3	1684.7	9896.1	1684.7	9902.9	1684	9909.3	1683.7	9914.5	1683.5
9916.9	1683.4	9918.9	1683.4	9924	1683.1	9927.4	1683	9933.9	1682.7
9936.9	1682.6	9939.9	1682.6	9948.3	1682.7	9948.9	1682.7	9955	1682.2
9956.8	1681.9	9965.3	1680.4	9974.8	1678.7	9976.3	1678.6	9983.2	1677.9
9986.1	1677.3	9993.1	1676.2	10000.2	1676.6	10000.6	1676.6	10001	1676.6
10001.5	1676.7	10008	1677.1	10016.1	1676.9	10023	1676.7	10030	1678
10039.6	1680.3	10039.7	1680.4	10041.9	1681	10045.3	1681.8	10053.8	1683.5
10058.2	1684.4	10064	1685.2	10069.6	1685.7	10075.1	1686.5	10081.7	1686.8
10084	1687								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9895.3	.05	9965.3	.04	10039.7	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.3	10039.7	98.84	82.09	73.9	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9930.30	9965.30	5.66	5.94	8.33	0.48	0.72	0.95
LB 9965.30	9980.18	110.79	40.00	15.05	9.31	2.69	2.77
9980.18	9995.06	284.57	70.43	15.05	23.91	4.73	4.04
9995.06	10009.94	324.59	75.95	14.91	27.28	5.10	4.27
10009.94	10024.82	310.16	73.91	14.92	26.06	4.97	4.20
10024.82	RB 10039.70	151.12	48.48	15.28	12.70	3.26	3.12
10039.70	10061.85	3.10	4.06	6.02	0.26	0.69	0.76

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9930.30	9965.30	5.97	6.19	8.37	0.50	0.75	0.96
LB 9965.30	9980.18	111.53	40.45	15.05	9.37	2.72	2.76
9980.18	9995.06	284.16	70.88	15.05	23.88	4.76	4.01
9995.06	10009.94	323.87	76.40	14.91	27.22	5.13	4.24
10009.94	10024.82	309.56	74.36	14.92	26.01	5.00	4.16
10024.82	RB 10039.70	151.63	48.93	15.28	12.74	3.29	3.10
10039.70	10061.85	3.28	4.23	6.05	0.28	0.73	0.77

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 4.613

INPUT
Description: 100-year, 6-hour Peak Discharge of 2330 cfs from HEC-1 model at station C103R.
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9900	1682.9	9904.4	1682.7	9909.3	1682.5	9915.1	1682.4	9921.5	1682.1
9935.8	1681.5	9940.9	1681.4	9944.5	1681.2	9950.6	1681	9952.4	1680.8
9959	1680.6	9959.7	1680.6	9960.8	1680.5	9966.8	1679.5	9984.4	1676.4
9987.8	1675.8	9988.1	1675.8	9988.3	1675.8	9988.7	1675.7	9995.4	1675.7
9997.5	1675.3	10001.6	1675	10005.7	1675	10015.3	1675	10019.2	1675.7
10031.7	1677.8	10039.2	1678.4	10062.5	1680.4	10070.1	1681.1	10082.3	1681.6
10094.8	1682.1	10098	1682.3	10099.1	1682.3	10100.3	1682.3	10112.6	1682.7
10115.1	1682.8	10124	1683.3	10124.2	1683.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9900	.05	9988.3	.04	10039.2	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.3	10039.2	430.45	408.6	345.74	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9944.15	9988.30	280.51	75.25	36.50	12.04	2.09	3.73
LB 9988.30	9998.48	442.33	52.95	10.23	18.98	5.20	8.35
9998.48	10008.66	529.70	58.90	10.19	22.73	5.79	8.99
10008.66	10018.84	516.56	58.13	10.24	22.17	5.71	8.89
10018.84	10029.02	323.43	44.04	10.32	13.88	4.33	7.34
10029.02	RB 10039.20	163.00	29.10	10.24	7.00	2.86	5.60
10039.20	10081.70	74.47	34.06	27.97	3.20	1.22	2.19

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9944.15	9988.30	290.83	79.16	36.60	12.48	2.19	3.67
LB 9988.30	9998.48	437.65	54.05	10.23	18.78	5.31	8.10
9998.48	10008.66	522.30	60.00	10.19	22.42	5.89	8.70
10008.66	10018.84	509.55	59.23	10.24	21.87	5.82	8.60
10018.84	10029.02	322.21	45.14	10.32	13.83	4.43	7.14
10029.02	RB 10039.20	165.79	30.20	10.24	7.12	2.97	5.49
10039.20	10081.70	81.68	37.07	28.08	3.51	1.33	2.20

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 4.536

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9934.5	1693.5	9939.4	1693.3	9941.6	1693.2	9942	1693.2	9942.5	1693
9979.4	1678.3	9984.4	1675.6	9989.5	1672.9	9994	1671.6	9996.3	1670.5
10007.3	1670.4	10015.5	1670.3	10020.6	1672	10027.1	1674.2	10036.7	1674.7
10041	1675	10048	1676.7	10057.9	1678.9	10075.7	1680.3	10105.6	1682.7
10116.6	1684.4	10134.3	1687.1	10137.5	1687.4	10143.5	1688	10144.9	1688.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9934.5	.06	9984.4	.04	10027.1	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.4	10027.1	488.47	524.83	547.46	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.45	9984.40	0.38	0.33	1.26	0.02	0.30	1.16
LB 9984.40	9992.94	168.29	22.99	9.35	7.22	2.69	7.32
9992.94	10001.48	559.14	46.19	8.83	24.00	5.41	12.10
10001.48	10010.02	639.64	49.40	8.54	27.45	5.79	12.95
10010.02	10018.56	615.03	48.63	8.71	26.40	5.69	12.65
10018.56	RB 10027.10	259.77	29.40	9.01	11.15	3.44	8.84
10027.10	10056.55	87.75	25.54	19.00	3.77	1.36	3.44

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.45	9984.40	0.93	0.61	1.51	0.04	0.55	1.51
LB 9984.40	9992.94	189.70	25.14	9.35	8.14	2.94	7.54
9992.94	10001.48	585.83	48.34	8.83	25.14	5.66	12.12
10001.48	10010.02	666.94	51.55	8.54	28.62	6.04	12.94
10010.02	10018.56	642.00	50.78	8.71	27.55	5.95	12.64
10018.56	RB 10027.10	244.61	31.55	11.26	10.50	3.69	7.75

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 4.436

INPUT
Description:

Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9838.4	1676.2	9839.9	1676	9842.1	1675.8	9846.9	1675.1	9852.8	1674.4
9855.2	1674.1	9858.9	1673.7	9861.2	1673.5	9863.5	1673.2	9871.3	1672
9873.5	1671.5	9881.1	1669.5	9882.1	1669.2	9889	1667.9	9892.7	1667.1
9894.4	1667	9908.6	1667.7	9909.9	1667.8	9913.2	1668.2	9922.2	1669
9928.1	1668.4	9930.2	1668.5	9951.1	1667.6	9957.5	1667.2	9958.3	1667.2
9966.8	1667.5	9969.4	1667.5	9969.5	1667.5	9974.5	1667	9977.6	1666.6
9978.9	1666.5	9984.2	1666.2	9988.6	1666.4	9991.6	1666.6	9997.2	1665.7
9997.3	1665.7	9997.4	1665.7	10000.7	1666	10000.9	1666	10010.1	1666.8
10014.2	1667.2	10018.9	1668.1	10030.4	1669.8	10030.9	1669.9	10031.2	1669.9
10031.4	1669.9	10050.1	1671.9	10051.2	1672.1	10055.7	1672.5	10061.2	1673.1
10066.3	1673.7								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9838.4	.05	9969.4	.04	10018.9	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969.4	10018.9	113.89	127.12	100.61	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 4.412

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9935.8	1675.7	9949.3	1672.3	9960.9	1669.3	9964.7	1668.2	9967.5	1667.5
9971.7	1666.3	9975.2	1665.3	9986.1	1661.8	9987.9	1661.4	9989.3	1661
9990.6	1660.7	9993.5	1660.8	9996.8	1660.6	9999.8	1661.1	10007.1	1662.2
10007.3	1662.2	10014.5	1662.1	10016.4	1661.9	10018.7	1662	10023.5	1663.1
10026.4	1663.8	10029.3	1664.3	10029.4	1664.3	10032.6	1664.3	10038.4	1663.8
10041.4	1664.4	10042.6	1664.7	10047.5	1664.7	10053.5	1663.8	10059.2	1663.9
10064.8	1664	10072.1	1663.9	10073.3	1663.7	10074.6	1663.6	10079.1	1663.8
10079.6	1664	10081.4	1664.8	10085.7	1665.9	10087.2	1666.1	10094.7	1667.9
10101	1668.4	10109.1	1669	10117	1671.1	10121.2	1672.4	10124.9	1673.3
10128.8	1673.8	10136.4	1675.5						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9935.8	.05	9971.7	.04	10029.3	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.7	10029.3	270.09	270.35	257.05	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.75	9971.70	0.21	0.27	1.43	0.01	0.20	0.77
LB 9971.70	9983.22	109.94	24.62	12.06	4.72	2.14	4.47
9983.22	9994.74	517.19	61.80	11.80	22.20	5.36	8.37
9994.74	10006.26	538.12	62.93	11.64	23.10	5.46	8.55
10006.26	10017.78	405.40	52.93	11.54	17.40	4.59	7.66
10017.78	RB 10029.30	264.53	41.29	11.77	11.35	3.58	6.41
10029.30	10050.72	171.49	50.53	21.57	7.36	2.36	3.39
10050.72	10072.14	223.83	59.16	21.45	9.61	2.76	3.78
10072.14	10093.56	99.29	33.85	17.99	4.26	1.93	2.93

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.75	9971.70	1.08	0.72	1.76	0.05	0.53	1.49
LB 9971.70	9983.22	160.52	28.42	12.06	6.89	2.47	5.65
9983.22	9994.74	656.69	65.60	11.80	28.18	5.69	10.01
9994.74	10006.26	682.07	66.73	11.64	29.27	5.79	10.22
10006.26	10017.78	523.11	56.72	11.54	22.45	4.92	9.22
10017.78	RB 10029.30	306.53	45.09	14.49	13.16	3.91	6.80

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 4.361

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9892.7	1674.3	9895.3	1674.2	9897.8	1673.9	9904.6	1672.9	9906.2	1672.8
9912.4	1671.7	9913.2	1671.4	9913.5	1671.3	9920.8	1668.5	9935.2	1662.6
9937.6	1662.4	9950.7	1661.9	9958.4	1661.8	9964	1661.8	9964.1	1661.8
9966.5	1661.6	9977.7	1660.1	9978	1660	10002.9	1658.1	10003.7	1658.2
10018.4	1662	10018.5	1662	10029.4	1662.9	10030	1662.9	10030.5	1663
10031.1	1663.2	10037.6	1665.1	10051.2	1669	10053.7	1669.6	10055.3	1669.7
10069.9	1670.6	10078.9	1670.9	10089.2	1670.9	10089.8	1671		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9892.7	.05	9964	.04	10018.5	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9964	10018.5	556.72	552.25	500.69	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9928.35	9946.17	57.40	15.95	13.70	2.46	1.18	3.60
9946.17	9964.00	148.81	31.38	17.83	6.39	1.76	4.74
LB 9964.00	9974.90	191.49	26.59	10.98	8.22	2.44	7.20
9974.90	9985.80	395.62	41.06	10.96	16.98	3.77	9.64
9985.80	9996.70	561.16	50.58	10.93	24.08	4.64	11.09
9996.70	10007.60	668.03	56.40	11.05	28.67	5.17	11.84
10007.60	RB 10018.50	267.88	32.84	11.26	11.50	3.01	8.16
10018.50	10042.27	39.61	14.26	14.21	1.70	1.01	2.78

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9964.00	9974.90	220.10	33.09	13.41	9.45	3.04	6.65
9974.90	9985.80	460.85	47.56	10.96	19.78	4.36	9.69
9985.80	9996.70	625.88	57.09	10.93	26.86	5.24	10.96
9996.70	10007.60	730.52	62.91	11.05	31.35	5.77	11.61
10007.60	RB 10018.50	292.65	39.34	13.48	12.56	3.61	7.44

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 4.256

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9942.9	1668.6	9949.8	1667	9950.7	1666.7	9953	1666.3	9962	1663.5

9965.8	1661.9	9974.6	1659	9981.3	1657.6	9983.7	1657.1	9988.1	1655.6
9998.4	1654.1	9998.5	1654.1	9998.6	1654	9998.8	1654	10014.8	1653.7
10022.3	1655	10034.9	1657	10035	1657	10050	1657.2	10056.7	1657.3
10062.5	1657.1	10082.4	1655.7	10082.9	1655.6	10083.8	1655.7	10093.5	1656.7
10113.6	1657.5	10119.2	1657.7	10139.9	1661.3	10149.6	1663.1	10155.2	1663.4
10171.2	1664.6	10173.5	1664.8	10179.5	1665.2	10182.8	1665.3	10184.4	1665.4

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9942.9	.05	9981.3	.04	10034.9	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.3	10034.9	394.19	454.34	451.53	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.50	9981.30	9.40	4.79	6.89	0.40	0.71	1.96
LB 9981.30	9992.02	178.21	30.22	11.06	7.65	2.82	5.90
9992.02	10002.74	422.26	50.29	10.83	18.12	4.69	8.40
10002.74	10013.46	502.92	55.63	10.72	21.58	5.19	9.04
10013.46	10024.18	408.68	49.36	10.86	17.54	4.60	8.28
10024.18	RB 10034.90	185.40	30.72	10.85	7.96	2.87	6.04
10034.90	10053.59	107.61	35.34	18.69	4.62	1.89	3.05
10053.59	10072.28	121.42	38.01	18.72	5.21	2.03	3.19
10072.28	10090.96	229.56	55.77	18.77	9.85	2.98	4.12
10090.96	10109.65	123.49	38.40	18.71	5.30	2.05	3.22
10109.65	10128.34	41.05	19.19	17.23	1.76	1.12	2.14

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.50	9981.30	9.23	4.21	6.49	0.40	0.66	2.19
LB 9981.30	9992.02	197.10	29.28	11.06	8.46	2.73	6.73
9992.02	10002.74	477.04	49.35	10.83	20.47	4.60	9.67
10002.74	10013.46	569.89	54.69	10.72	24.46	5.10	10.42
10013.46	10024.18	461.42	48.42	10.86	19.80	4.52	9.53
10024.18	RB 10034.90	205.24	29.78	10.85	8.81	2.78	6.89
10034.90	10053.59	120.72	33.70	18.69	5.18	1.80	3.58
10053.59	10072.28	136.98	36.38	18.72	5.88	1.95	3.77
10072.28	10090.96	152.38	35.89	15.42	6.54	2.94	4.25

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 4.170

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9959.1	1664.3	9965	1663.7	9968.2	1663.3	9976.7	1658.1	9985.8	1652.7
9992.7	1648.6	9998.8	1648.8	10009.6	1649	10012.7	1649.6	10019.6	1651
10021.1	1651.2	10054.3	1651.7	10058.6	1651.8	10059	1651.8	10075.6	1652.4
10094	1656	10099.3	1657.1	10110.4	1657.5	10120.7	1657.9	10137.6	1658.6
10146.6	1658.9	10149.8	1659.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9959.1	.05	9985.8	.04	10021.1	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.8	10021.1	452.9	494.4	500.88	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9976.90	9985.80	3.33	1.45	2.57	0.14	0.66	2.29
LB 9985.80	9992.86	201.11	24.07	8.19	8.63	3.41	8.35
9992.86	9999.92	461.96	37.38	7.06	19.83	5.29	12.36
9999.92	10006.98	438.04	36.20	7.06	18.80	5.13	12.10
10006.98	10014.04	382.82	33.55	7.15	16.43	4.75	11.41
10014.04	RB 10021.10	222.23	24.26	7.19	9.54	3.44	9.16
10021.10	10037.19	225.19	43.32	16.09	9.66	2.69	5.20
10037.19	10053.27	192.43	39.42	16.09	8.26	2.45	4.88
10053.27	10069.36	150.34	34.00	16.10	6.45	2.11	4.42
10069.36	10085.45	52.55	17.42	14.65	2.26	1.20	3.02

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross

section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9976.90	9985.80	4.66	1.96	2.80	0.20	0.89	2.37
LB 9985.80	9992.86	201.67	25.70	8.19	8.66	3.64	7.85
9992.86	9999.92	445.98	39.01	7.06	19.14	5.52	11.43
9999.92	10006.98	423.84	37.82	7.06	18.19	5.36	11.21
10006.98	10014.04	372.51	35.17	7.15	15.99	4.98	10.59
10014.04	RB 10021.10	222.66	25.89	7.19	9.56	3.67	8.60
10021.10	10037.19	232.98	47.03	16.09	10.00	2.92	4.95
10037.19	10053.27	201.68	43.13	16.09	8.66	2.68	4.68
10053.27	10069.36	161.18	37.71	16.10	6.92	2.34	4.27
10069.36	10085.45	62.83	20.76	14.88	2.70	1.43	3.03

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 4.077

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9847.3	1656.6	9848.2	1656.3	9857	1653.4	9870.8	1650.9	9873.6	1650.5
9876.2	1649.9	9886.1	1648.1	9890.7	1647	9899.8	1647.2	9907.7	1647.3
9912.4	1647.7	9931.5	1648.4	9936.6	1648.5	9951.4	1647.8	9974.2	1646.8
9979.9	1646.6	9982.8	1646.6	9982.9	1646.6	9985.8	1646	9994.5	1644.5
9994.7	1644.5	10008.7	1644.2	10013.5	1645.5	10021.4	1647.5	10027.1	1649
10029.8	1649.7	10032.1	1650.3	10033	1650.4	10054	1651.7	10061.2	1652
10064.4	1652.1	10070.9	1652.4	10077.8	1652.5	10087.6	1652.8	10094.6	1652.9

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9847.3	.05	9982.8	.04	10021.4	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.8	10021.4	464.33	473.79	447.83	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9874.40	9887.95	25.13	10.91	11.11	1.08	1.00	2.30
9887.95	9901.50	153.23	35.05	13.63	6.58	2.59	4.37
9901.50	9915.05	127.08	31.27	13.57	5.45	2.31	4.06
9915.05	9928.60	76.50	23.05	13.56	3.28	1.70	3.32
9928.60	9942.15	52.16	18.32	13.56	2.24	1.35	2.85
9942.15	9955.70	86.15	24.76	13.57	3.70	1.83	3.48
9955.70	9969.25	138.78	32.96	13.56	5.96	2.43	4.21
9969.25	9982.80	196.01	40.54	13.56	8.41	2.99	4.84
LB 9982.80	9990.52	218.73	29.91	7.85	9.39	3.87	7.31
9990.52	9998.24	346.44	39.28	7.78	14.87	5.09	8.82
9998.24	10005.96	385.16	41.73	7.72	16.53	5.41	9.23
10005.96	10013.68	344.52	39.39	7.90	14.79	5.10	8.75
10013.68	RB 10021.40	159.45	24.89	7.96	6.84	3.22	6.41
10021.40	10045.80	20.67	9.61	8.87	0.89	1.12	2.15

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9915.05	9928.60	18.80	6.64	5.51	0.81	1.85	2.83
9928.60	9942.15	80.26	22.74	13.56	3.44	1.68	3.53
9942.15	9955.70	121.59	29.18	13.57	5.22	2.15	4.17
9955.70	9969.25	183.71	37.38	13.56	7.88	2.76	4.92
9969.25	9982.80	249.98	44.96	13.56	10.73	3.32	5.56
LB 9982.80	9990.52	262.67	32.43	7.85	11.27	4.20	8.10
9990.52	9998.24	403.29	41.80	7.78	17.31	5.41	9.65
9998.24	10005.96	445.71	44.25	7.72	19.13	5.73	10.07
10005.96	10013.68	400.93	41.90	7.90	17.21	5.43	9.57
10013.68	RB 10021.40	163.05	27.40	10.54	7.00	3.55	5.95

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1

REACH: Reach 1 RS: 3.987

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9874.9	1656.6	9879.5	1655.9	9891.8	1653.9	9892.9	1653.9	9895.6	1653.7
9902.4	1652.8	9909.3	1651.8	9911	1651.7	9913.6	1651.5	9920.3	1651.1
9922.7	1650.7	9930	1650	9932.6	1649.8	9933.2	1649.7	9933.7	1649.7
9935.4	1649.1	9938.3	1648.5	9952.6	1645	9956.8	1644.5	9963.4	1643.5
9969.1	1643	9977.3	1642.6	9977.4	1642.6	9979.8	1642.2	9983.5	1641.8
9987.5	1641.4	10005.6	1640.4	10011.8	1640.1	10013.9	1640.7	10021.6	1642.7
10021.7	1642.7	10027.4	1642.8	10028	1642.8	10029.4	1643	10037.6	1644
10041.4	1643.9	10049.5	1643.6	10057.8	1642.4	10059.4	1642.2	10061.3	1642.3
10062.3	1642.6	10062.9	1642.3	10067.9	1643	10089.4	1645.9	10094.2	1646.6
10094.7	1646.7	10095.4	1646.7	10095.9	1646.8	10103.4	1647	10118.2	1646.9
10131.2	1647.2	10152	1646.7	10157.2	1647	10168.6	1647	10180.6	1647.3
10181.6	1647.3	10182.2	1647.3	10183.6	1647.3	10185.2	1647.3	10213.2	1647.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9874.9	.05	9977.4	.04	10021.7	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.4	10021.7	482.25	485.32	487.05	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9926.15	9977.40	165.93	38.87	25.44	7.12	1.54	4.27
LB 9977.40	9986.26	232.35	27.60	8.93	9.97	3.12	8.42
9986.26	9995.12	337.76	34.47	8.88	14.50	3.89	9.80
9995.12	10003.98	412.30	38.85	8.87	17.70	4.38	10.61
10003.98	10012.84	483.60	42.82	8.91	20.76	4.83	11.29
10012.84	RB 10021.70	283.32	31.41	9.16	12.16	3.54	9.02
10021.70	10069.58	381.79	94.30	48.24	16.39	1.97	4.05
10069.58	10117.45	32.93	13.28	14.16	1.41	0.95	2.48

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9977.40	9986.26	243.14	36.57	12.46	10.44	4.13	6.65
9986.26	9995.12	406.01	43.43	8.88	17.43	4.90	9.35
9995.12	10003.98	476.58	47.81	8.87	20.45	5.40	9.97
10003.98	10012.84	542.87	51.78	8.91	23.30	5.84	10.48
10012.84	RB 10021.70	352.08	40.37	9.16	15.11	4.56	8.72
10021.70	10069.58	309.32	76.19	30.99	13.28	2.69	4.06

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 3.895

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9866.5	1656.7	9874.3	1655.1	9881.7	1654	9890.7	1652.7	9891.7	1652.5
9898	1651.3	9898.2	1651.3	9925.1	1645.6	9926.3	1645.3	9926.7	1645.2
9929.3	1644.5	9943.9	1640.8	9952.3	1639.1	9955.3	1639	9969.2	1639.3
9972.6	1639.3	9972.8	1639.3	9973.3	1639.3	9973.5	1639.3	9974.6	1639.2
9987.5	1637.3	9996.6	1637.3	10003.6	1637.4	10010.7	1638.3	10022.5	1639.8
10022.7	1639.8	10061.8	1640	10065	1640.1	10069.4	1640	10071.2	1639.9
10084	1639.5	10091.5	1640.5	10091.7	1640.5	10091.9	1640.5	10092.5	1640.5
10094.5	1640.5	10101.6	1640.4	10110	1641.5	10115.8	1642	10120.9	1642.6
10135.5	1645.5	10146.1	1647.3	10148.1	1648.1	10153.6	1649.3	10160.5	1651
10164.5	1651.9	10169	1652.3	10171.9	1652.8	10175.8	1653.7	10180	1654.4
10187.7	1657.6	10188	1657.7	10189	1658.1	10194.6	1659.4		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9866.5	.05	9973.5	.04	10022.7	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9973.5	10022.7	486.27	485.61	441.58	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9902.17	9937.83	0.34	0.54	2.13	0.01	0.26	0.63
9937.83	9973.50	365.42	110.62	36.03	15.68	3.10	3.30
LB 9973.50	9983.34	215.02	41.59	9.94	9.23	4.23	5.17
9983.34	9993.18	327.72	53.44	9.88	14.07	5.43	6.13
9993.18	10003.02	338.84	54.43	9.84	14.54	5.53	6.23
10003.02	10012.86	276.31	48.30	9.91	11.86	4.91	5.72
10012.86	RB 10022.70	169.45	36.02	9.92	7.27	3.66	4.70
10022.70	10065.67	335.10	126.64	42.98	14.38	2.95	2.65
10065.67	10108.65	288.72	115.95	43.11	12.39	2.70	2.49
10108.65	10151.63	13.07	11.43	13.66	0.56	0.84	1.14

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9973.50	9983.34	254.94	41.61	13.50	10.94	4.23	6.13
9983.34	9993.18	476.55	53.46	9.88	20.45	5.43	8.91
9993.18	10003.02	492.72	54.44	9.84	21.15	5.53	9.05
10003.02	10012.86	401.81	48.31	9.91	17.25	4.91	8.32
10012.86	RB 10022.70	246.45	36.04	9.92	10.58	3.66	6.84
10022.70	10065.67	457.54	117.05	42.38	19.64	2.96	3.91

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 3.803

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9933.2	1659.1	9949.3	1649.5	9959.3	1643.4	9968.9	1638.4	9969.9	1638
9973.8	1636.3	9978.9	1634.2	9991.2	1634.6	10003.9	1634.8	10007.4	1634.7
10020.9	1635.6	10024.5	1635.8	10044.9	1637.8	10053.6	1638.8	10053.7	1638.8
10060.4	1639.5	10066.9	1639.8	10072.9	1640.6	10091.3	1643	10092.3	1643.2
10092.5	1643.2	10100.5	1644.2	10105.2	1645.3	10116.7	1648.1	10124.6	1650.2
10133	1652.1	10140.4	1654.4	10157	1658.4				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9933.2	.05	9969.9	.04	10053.6	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969.9	10053.6	464.92	512	525.26	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.67	9969.90	25.71	16.78	9.02	1.10	2.09	1.53
LB 9969.90	9986.64	492.75	113.87	17.51	21.15	6.80	4.33
9986.64	10003.38	586.60	124.17	16.74	25.18	7.42	4.72
10003.38	10020.12	536.09	117.71	16.77	23.01	7.03	4.55
10020.12	10036.86	394.14	97.96	16.81	16.92	5.85	4.02
10036.86	RB 10053.60	226.21	70.25	16.84	9.71	4.20	3.22
10053.60	10088.07	68.50	55.04	30.74	2.94	1.80	1.24

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.67	9969.90	27.00	16.65	8.98	1.16	2.08	1.62
LB 9969.90	9986.64	513.44	113.60	17.51	22.04	6.79	4.52
9986.64	10003.38	611.42	123.90	16.74	26.24	7.40	4.93
10003.38	10020.12	558.67	117.45	16.77	23.98	7.02	4.76
10020.12	10036.86	410.43	97.69	16.81	17.61	5.84	4.20
10036.86	RB 10053.60	209.03	69.99	20.09	8.97	4.18	2.99

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1

REACH: Reach 1 RS: 3.706

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9609.8	1650.3	9612.5	1650.2	9616.8	1649.7	9624.7	1649.2	9632.1	1648.7
9646.6	1648.2	9647.5	1648.1	9648	1648.1	9649.8	1647.9	9654.9	1647.7
9664	1646.6	9672.1	1646	9679.9	1645.5	9681.9	1645.4	9684.4	1645.3
9686	1645.2	9697.7	1644.5	9711.8	1643.6	9715.2	1643.6	9720.3	1643.5
9728.6	1643.2	9737.1	1643	9747.5	1642.7	9749.7	1642.7	9760.3	1642.5
9761.5	1642.4	9761.9	1642.4	9782.2	1641.8	9784.7	1641.4	9791.6	1640.9
9795	1640.7	9800	1639.9	9803.7	1639.5	9807	1639.4	9824.9	1637.7
9830.8	1637.2	9853.9	1635.8	9858	1635.7	9859.5	1635.6	9866	1635.1
9867.9	1634.9	9878.3	1634.2	9884.5	1633.7	9892	1633.5	9895.2	1633.5
9901.1	1633.2	9904.5	1633.2	9910.6	1632.9	9932.7	1632.1	9944.4	1632
9959.4	1631.8	9961.2	1631.8	9978.2	1631.9	9984.5	1631.9	9986.1	1631.8
10012.6	1630.6	10017.3	1632.8	10020.3	1634	10044.8	1643.8	10049.4	1645
10058	1647.5								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9609.8	.05	9910.6	.04	10020.3	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9910.6	10020.3	228.4	183.34	184.01	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9760.20	9835.40	65.29	156.95	64.88	2.80	2.43	0.42
9835.40	9910.60	491.67	559.51	75.33	21.10	7.44	0.88
LB 9910.60	9932.54	313.25	211.39	21.95	13.44	9.63	1.48
9932.54	9954.48	341.28	222.49	21.94	14.65	10.14	1.53
9954.48	9976.42	350.21	225.97	21.94	15.03	10.30	1.55
9976.42	9998.36	358.78	229.33	21.96	15.40	10.45	1.56
9998.36	RB 10020.30	365.68	234.98	22.68	15.69	10.71	1.56
10020.30	10032.87	40.88	70.68	13.53	1.75	5.62	0.58
10032.87	10045.43	2.97	12.10	8.38	0.13	1.56	0.25

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9760.20	9835.40	65.29	156.95	64.88	2.80	2.43	0.42
9835.40	9910.60	491.67	559.51	75.33	21.10	7.44	0.88
LB 9910.60	9932.54	313.24	211.39	21.95	13.44	9.63	1.48
9932.54	9954.48	341.28	222.49	21.94	14.65	10.14	1.53
9954.48	9976.42	350.21	225.97	21.94	15.03	10.30	1.55
9976.42	9998.36	358.77	229.33	21.96	15.40	10.45	1.56
9998.36	RB 10020.30	365.68	234.98	22.68	15.69	10.71	1.56
10020.30	10032.87	40.88	70.68	13.53	1.75	5.62	0.58
10032.87	10045.43	2.97	12.10	8.37	0.13	1.56	0.25

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 3.671

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9692.5	1650.6	9704.6	1648.9	9716.7	1647.4	9728.1	1645.8	9743.1	1643.5
9745.6	1643	9754.6	1641.8	9755.4	1641.8	9756	1641.7	9767.7	1639.2
9769.3	1639	9772.9	1638.7	9776.2	1638.1	9780	1637.4	9780.5	1637.3
9791.6	1635.3	9792.5	1635	9794.3	1634.7	9815	1633.8	9825.5	1632.9
9827.8	1633	9829.3	1632.9	9839.6	1632.4	9840.2	1632.4	9845.8	1632.1
9850.7	1631.8	9850.9	1631.8	9860.8	1630.5	9863.3	1630.2	9866.8	1629.9
9875	1629	9877.2	1629	9879.4	1629	9883.1	1629	9916.8	1629.2
9942.8	1629.3	9943.5	1629.3	9943.9	1629.3	9944.9	1629.3	9988.5	1629.3
10004.7	1629.2	10014.3	1630.3	10026.1	1631.8	10057.4	1635.9	10062.2	1636.7
10065.1	1636.7	10072	1638	10079.6	1638.9	10082.3	1639.3	10086	1639.5
10087.4	1639.5	10099.9	1640	10100.6	1640.1	10100.9	1640.1	10113.6	1641.3
10123.7	1642.6	10137.7	1644.1	10143.2	1644.5	10149.6	1645.6	10153.1	1645.9
10158	1646.5	10161.1	1646.7	10162.8	1647	10180.9	1649.6	10198.3	1652.1
10198.6	1652.1	10200.3	1652.3	10203.3	1652.7				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9692.5	.05	9850.9	.04	10026.1	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9850.9	10026.1	117.28	149.51	153.42	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta	Right Sta	Flow	Area	W.P.	% Conv.	Hydr D.	Velocity

(ft)	(ft)	(cfs)	(sq ft)	(ft)		(ft)	(ft/s)
9732.10	9771.70	5.41	33.31	19.95	0.23	1.70	0.16
9771.70	9811.30	99.38	252.41	40.00	4.27	6.37	0.39
9811.30	9850.90	187.88	368.66	39.68	8.06	9.31	0.51
LB 9850.90	9885.94	360.94	428.30	35.21	15.49	12.22	0.84
9885.94	9920.98	402.12	456.13	35.04	17.26	13.02	0.88
9920.98	9956.02	394.24	450.74	35.04	16.92	12.86	0.87
9956.02	9991.06	392.95	449.86	35.04	16.86	12.84	0.87
9991.06	RB 10026.10	357.28	425.66	35.20	15.33	12.15	0.84
10026.10	10070.40	112.19	329.37	44.73	4.82	7.44	0.34
10070.40	10114.70	17.54	107.94	44.50	0.75	2.44	0.16
10114.70	10159.00	0.08	1.88	5.45	0.00	0.35	0.04

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9732.10	9771.70	5.41	33.31	19.95	0.23	1.70	0.16
9771.70	9811.30	99.38	252.41	40.00	4.27	6.37	0.39
9811.30	9850.90	187.88	368.66	39.68	8.06	9.31	0.51
LB 9850.90	9885.94	360.94	428.30	35.21	15.49	12.22	0.84
9885.94	9920.98	402.12	456.13	35.04	17.26	13.02	0.88
9920.98	9956.02	394.24	450.74	35.04	16.92	12.86	0.87
9956.02	9991.06	392.94	449.86	35.04	16.86	12.84	0.87
9991.06	RB 10026.10	357.28	425.66	35.20	15.33	12.15	0.84
10026.10	10070.40	112.19	329.37	44.73	4.82	7.44	0.34
10070.40	10114.70	17.54	107.94	44.50	0.75	2.44	0.16
10114.70	10159.00	0.08	1.88	5.45	0.00	0.35	0.04

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 3.643

INPUT
Description: Cross section immediately upstream of stock tank embankment (modeled as an inline weir).

Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9700.9	1650.3	9705.9	1649.6	9709.9	1648.9	9719.5	1647.5	9733.7	1645.1
9738.8	1644.4	9754.9	1641.1	9760.2	1641.6	9771.6	1643.7	9771.8	1643.6
9771.9	1643.6	9789.7	1640.8	9814.9	1637.8	9819.6	1636.7	9833.8	1633.5
9836.3	1632.9	9851.8	1631.3	9859.4	1630.5	9867.4	1629.5	9867.5	1629.5
9872.4	1629	9883.9	1627.8	9884	1627.8	9885.1	1627.7	9897.7	1627.7
9908.7	1627.6	9913.4	1627.5	9914	1627.5	9916	1627.6	9929.6	1627.5
9930.6	1627.5	9930.8	1627.5	9944.9	1627.4	9948.8	1627.9	9950	1627.5
9960	1627.6	9965.9	1627.7	9971.5	1627.8	9977.7	1627.8	9982.8	1627.9
9988.9	1628	9993.4	1628	9999.2	1628.1	10005.9	1628.2	10007.5	1628.2
10025.6	1628.4	10030.1	1628.6	10035.3	1628.6	10038.6	1628.6	10041.9	1628.8
10044.6	1628.9	10045.2	1629	10045.4	1629	10058	1629.1	10058.2	1629.1
10069.6	1628.9	10070	1628.9	10080.6	1629.7	10082.1	1629.9	10083.9	1630.3
10089.8	1630.8	10094.2	1631.5	10096.3	1632.1	10099.4	1632.8	10107.2	1634.4
10108	1634.5	10112.1	1635	10118.5	1635.8	10123	1636.5	10129.3	1637.5
10135.8	1638.8	10137.3	1639	10143.3	1639.9	10145	1640.2	10183.8	1646.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9700.9	.05	9867.5	.04	10045.2	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9867.5	10045.2	137.8	139.23	137.67	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9700.9	9771.52	1644.95

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9736.21	9771.52	0.00	7.59	13.46	0.00	0.57	0.00
9771.52	9819.51	15.90	99.68	38.72	0.68	2.60	0.16
9819.51	9867.50	176.14	462.13	48.61	7.56	9.63	0.38
LB 9867.50	9903.04	356.24	497.54	35.63	15.29	14.00	0.72
9903.04	9938.58	382.50	518.72	35.54	16.42	14.60	0.74
9938.58	9974.12	378.89	516.32	35.64	16.26	14.53	0.73
9974.12	10009.66	362.39	502.17	35.54	15.55	14.13	0.72
10009.66	RB 10045.20	341.81	484.96	35.56	14.67	13.65	0.70
10045.20	10079.85	179.94	451.93	34.68	7.72	13.04	0.40
10079.85	10114.50	109.75	337.79	35.17	4.71	9.75	0.32
10114.50	10149.15	26.17	142.81	35.10	1.12	4.12	0.18
10149.15	10183.80	0.28	5.25	8.28	0.01	0.64	0.05

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9736.21	9771.52	0.00	7.59	13.46	0.00	0.57	0.00
9771.52	9819.51	15.90	99.68	38.72	0.68	2.60	0.16
9819.51	9867.50	176.14	462.13	48.61	7.56	9.63	0.38
LB 9867.50	9903.04	356.24	497.54	35.63	15.29	14.00	0.72
9903.04	9938.58	382.50	518.72	35.54	16.42	14.60	0.74
9938.58	9974.12	378.89	516.32	35.64	16.26	14.53	0.73
9974.12	10009.66	362.39	502.17	35.54	15.55	14.13	0.72
10009.66	RB 10045.20	341.81	484.96	35.56	14.67	13.65	0.70

10045.20	10079.85	179.94	451.93	34.68	7.72	13.04	0.40
10079.85	10114.50	109.75	337.79	35.17	4.71	9.75	0.32
10114.50	10149.15	26.17	142.81	35.10	1.12	4.12	0.18
10149.15	10183.80	0.28	5.25	8.28	0.01	0.64	0.05

Warning: The encroachment was ignored because the encroachment was coded either outside of the cross section or inside of the channel.

INLINE WEIR RIVER: Unnamed 1
REACH: Reach 1 RS: 3.631

INPUT
Description: Earthen embankment at Bailey stock tank
Distance from Upstream XS = 65
Deck/Roadway Width = 10
Weir Coefficient = 3
Bridge Deck/Roadway Skew = 0
Weir Embankment Coordinates num = 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9781	1642	9955	1642	9960	1640	10060	1640	10080	1636
10110	1640	10183.8	1646.3						

Upstream Embankment side slope = 2 horiz. to 1.0 vertical
Downstream Embankment side slope = 2 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .95
Elevation at which weir flow begins = 1636
Weir crest shape = Broad Crested

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 3.617

INPUT
Description: Cross section immediately downstream of stock tank embankment (modeled as an inline weir).
No reduction in peak discharge due to potential storage behind the embankment
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9762.8	1640.9	9791.3	1635.9	9813.5	1631	9816.5	1630.5	9819	1630.2
9828.8	1628.1	9838.7	1626.2	9848.5	1624.4	9850.8	1623.9	9864.1	1624
9879.7	1624	9889	1624	9891	1624	9901.4	1624	9903.6	1624
9913.6	1623.9	9913.7	1623.9	9923.5	1624.7	9933	1625.1	9933.9	1625.2
9934	1625.2	9935.2	1625	9945.2	1624.5	9945.6	1624.5	9945.7	1624.5
9946.5	1624.4	9957.2	1624.5	9958.7	1624.4	9966	1624.5	9976.8	1624.4
9977.5	1624.3	9979.5	1624.3	9990.2	1624.2	9994.4	1624.2	9995.1	1624.2
9998.7	1624.6	10008.02	1625.71	10023.1	1627	10023.7	1627	10024.8	1627.1
10032.3	1628.5	10038.3	1629.3	10038.7	1629.4	10039.8	1629.6	10040.5	1629.7
10042.2	1629.8	10052.9	1631.3	10062.2	1630.8	10062.6	1630.8	10062.8	1630.8
10073.1	1632.8	10082.1	1633.8	10086.5	1634.5	10094.8	1635.8	10099	1636.7
10103	1637.8	10105.5	1638.1	10118	1639.4	10119.9	1639.6	10129.8	1641.1
10133.1	1641.5								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9762.8	.05	9838.7	.041	10008.02	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9838.7	10008.02	221.82	208.6	196.65	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9838.70	9872.56	467.69	61.42	33.97	20.07	1.82	7.61
9872.56	9906.43	637.63	73.88	33.86	27.37	2.18	8.63
9906.43	9940.29	400.08	55.90	33.93	17.17	1.65	7.16
9940.29	9974.16	421.31	57.62	33.88	18.08	1.70	7.31
9974.16	RB 10008.02	401.60	56.04	33.96	17.24	1.65	7.17
10008.02	10070.56	1.69	1.29	5.52	0.07	0.24	1.31

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9838.70	9872.56	467.70	61.47	33.97	20.07	1.82	7.61
9872.56	9906.43	637.49	73.92	33.86	27.36	2.18	8.62
9906.43	9940.29	400.13	55.95	33.93	17.17	1.65	7.15
9940.29	9974.16	421.34	57.67	33.88	18.08	1.70	7.31
9974.16	RB 10008.02	401.64	56.09	33.96	17.24	1.66	7.16
10008.02	10070.56	1.71	1.30	5.52	0.07	0.24	1.31

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 3.577

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9885.1	1628.1	9887.4	1628	9910.6	1625.7	9913.4	1625.5	9915.1	1625.1
9925.9	1622.3	9932.5	1622.1	9954.5	1621.1	9954.6	1621.1	9957	1620.9
9965.7	1620.3	9969.2	1620	9970.8	1619.9	9980.6	1619.7	9984.9	1619.6
9991.4	1619.5	9995.7	1619.2	9999.4	1619.1	10000.7	1619.1	10002.4	1619
10008.9	1619.8	10015.9	1620.7	10016	1620.7	10018.3	1620.5	10021.1	1620.2
10026.6	1619.6	10032.2	1620.9	10042.3	1623.1	10051.3	1623.6	10054.6	1623.8
10060.7	1624.4	10066.8	1625.3	10069.8	1625.6	10073.1	1626.1	10077.9	1626.6
10082.8	1627.2	10087.9	1627.7	10092.8	1628.2	10102.8	1629.6	10105.7	1629.9

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9885.1	.05	9954.6	.04	10015.9	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9954.6	10015.9	333.89	325.38	296.36	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9919.85	9937.22	57.48	19.55	16.38	2.47	1.21	2.94
9937.22	9954.60	153.30	36.08	17.39	6.58	2.08	4.25
LB 9954.60	9966.86	245.83	35.82	12.29	10.55	2.92	6.86
9966.86	9979.12	361.52	45.12	12.27	15.52	3.68	8.01
9979.12	9991.38	409.09	48.57	12.26	17.56	3.96	8.42
9991.38	10003.64	481.70	53.61	12.28	20.67	4.37	8.98
10003.64	RB 10015.90	354.82	44.73	12.36	15.23	3.65	7.93
10015.90	10038.35	260.24	67.14	22.80	11.17	2.99	3.88
10038.35	10060.80	6.02	5.50	12.46	0.26	0.45	1.09

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9919.85	9937.22	81.36	28.55	16.94	3.49	1.76	2.85
9937.22	9954.60	175.22	45.72	17.39	7.52	2.63	3.83
LB 9954.60	9966.86	250.31	42.62	12.29	10.74	3.48	5.87
9966.86	9979.12	348.16	51.92	12.27	14.94	4.23	6.71
9979.12	9991.38	387.87	55.37	12.26	16.65	4.52	7.01
9991.38	10003.64	447.97	60.41	12.28	19.23	4.93	7.42
10003.64	RB 10015.90	342.34	51.53	12.36	14.69	4.20	6.64
10015.90	10038.35	278.62	79.59	22.80	11.96	3.55	3.50
10038.35	10060.80	18.15	12.35	13.01	0.78	1.00	1.47

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 3.515

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9911.6	1625.1	9914	1624.7	9916.8	1624.3	9924.2	1623.1	9930.1	1622.4
9931.6	1622.1	9936	1621.2	9939.9	1620.8	9942.4	1620.2	9966.3	1616.1
9967.6	1615.9	9971.5	1615.5	9980.9	1616.2	9984.4	1616.4	9996	1615
10000.1	1614.4	10000.9	1614.4	10001.6	1614.5	10009.5	1615.8	10016	1616.8
10019.6	1617.4	10023.6	1617.7	10044.1	1619.4	10057.1	1621.2	10059.8	1621.6
10087	1624								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9911.6	.05	9967.6	.04	10016	.06

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

9967.6	10016	331.88	331.98	327.06		.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9939.60	9953.60	11.53	5.19	7.90	0.49	0.67	2.22
9953.60	9967.60	191.66	35.49	14.20	8.23	2.53	5.40
LB 9967.60	9977.28	385.05	37.80	9.72	16.53	3.90	10.19
9977.28	9986.96	308.21	33.07	9.71	13.23	3.42	9.32
9986.96	9996.64	417.90	39.76	9.75	17.94	4.11	10.51
9996.64	10006.32	555.98	47.26	9.79	23.86	4.88	11.77
10006.32	RB 10016.00	328.82	34.50	9.80	14.11	3.56	9.53
10016.00	10033.75	119.27	32.46	17.85	5.12	1.83	3.67
10033.75	10051.50	11.57	6.82	11.94	0.50	0.57	1.70

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9967.60	9977.28	385.05	39.72	13.63	16.53	4.10	9.69
9977.28	9986.96	390.66	34.99	9.71	16.77	3.61	11.16
9986.96	9996.64	521.57	41.68	9.75	22.38	4.31	12.51
9996.64	10006.32	685.46	49.18	9.79	29.42	5.08	13.94
10006.32	RB 10016.00	347.26	36.42	12.81	14.90	3.76	9.54

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 3.453

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9923.9	1626.7	9926.6	1626	9928.5	1625.5	9929.5	1625.3	9939.1	1622.5
9939.3	1622.5	9939.4	1622.4	9940.5	1622.4	9944.8	1622.1	9949	1622
9954	1621.6	9969.5	1617.5	9977.5	1614.8	9992	1610	10003.8	1610
10012.4	1609.8	10028.3	1612.9	10034	1613.8	10034.5	1613.8	10035.1	1613.8
10039.4	1613.8	10080.3	1615.9	10093.7	1616.7	10127.7	1620.1	10135.9	1620.9
10166.2	1625.8	10178.7	1627.8	10183	1628.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9923.9	.05	9977.5	.04	10034.5	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.5	10034.5	447.87	454.49	458.74	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9950.70	9977.50	4.79	2.84	4.33	0.21	0.69	1.68
LB 9977.50	9988.90	211.75	37.30	12.01	9.09	3.27	5.68
9988.90	10000.30	604.04	68.91	11.56	25.92	6.05	8.77
10000.30	10011.70	644.38	71.24	11.40	27.66	6.25	9.05
10011.70	10023.10	500.22	61.62	11.60	21.47	5.41	8.12
10023.10	RB 10034.50	214.86	37.07	11.57	9.22	3.25	5.80
10034.50	10071.63	145.52	61.88	37.17	6.25	1.67	2.35
10071.63	10108.75	4.44	5.08	13.47	0.19	0.38	0.87

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross

section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9950.70	9977.50	6.29	3.26	4.43	0.27	0.80	1.93
LB 9977.50	9988.90	233.22	38.47	12.01	10.01	3.37	6.06
9988.90	10000.30	649.92	70.08	11.56	27.89	6.15	9.27
10000.30	10011.70	692.70	72.40	11.40	29.73	6.35	9.57
10011.70	10023.10	539.98	62.78	11.60	23.18	5.51	8.60
10023.10	RB 10034.50	207.89	38.24	14.06	8.92	3.35	5.44

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 3.366

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9891	1627.1	9897.5	1625.9	9898	1625.9	9898.3	1625.8	9899.9	1625.5
9909.1	1622.7	9909.5	1622.6	9920.2	1621.1	9928.6	1619.8	9933.3	1619.3
9936.3	1618.6	9937.8	1618.3	9938.6	1618.1	9943.9	1616.7	9950.1	1614.8
9961.3	1611.4	9964	1610.6	9965.7	1610.1	9968.5	1609.3	9971.8	1608.8
9976.4	1608.1	9979.9	1607.6	9995.5	1605.9	10013.1	1607.7	10018.2	1608.2
10026.2	1610.7	10038.6	1614.7	10038.9	1614.8	10039	1614.8	10039.3	1614.8
10068.7	1620.3	10069.1	1620.3	10080	1621.8	10084.8	1622.6	10091.9	1624
10099.6	1625.6								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9891	.05	9964	.04	10026.2	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9964	10026.2	485.35	486.11	488.32	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9927.50	9964.00	1.37	0.78	2.40	0.06	0.34	1.75
LB 9964.00	9976.44	188.75	26.53	12.72	8.10	2.13	7.11
9976.44	9988.88	536.08	49.34	12.53	23.01	3.97	10.87
9988.88	10001.32	802.86	62.83	12.51	34.46	5.05	12.78
10001.32	10013.76	578.96	51.63	12.50	24.85	4.15	11.21
10013.76	RB 10026.20	221.29	29.30	12.84	9.50	2.36	7.55
10026.20	10062.90	0.69	0.52	1.89	0.03	0.29	1.31

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9927.50	9964.00	1.49	0.83	2.42	0.06	0.36	1.79
LB 9964.00	9976.44	190.08	26.79	12.72	8.16	2.15	7.09
9976.44	9988.88	535.80	49.60	12.53	23.00	3.99	10.80
9988.88	10001.32	800.93	63.09	12.51	34.37	5.07	12.69
10001.32	10013.76	578.43	51.89	12.50	24.83	4.17	11.15
10013.76	RB 10026.20	222.50	29.56	12.84	9.55	2.38	7.53
10026.20	10062.90	0.76	0.56	1.91	0.03	0.31	1.35

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 3.274

INPUT

Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9889.6	1620.9	9891.1	1620.4	9895.2	1618.9	9897.1	1618.1	9900.5	1617.3
9901.3	1617.2	9906.3	1616.6	9907.5	1616.2	9915.6	1614.7	9920.5	1613.8
9936.4	1610.2	9937.3	1610	9960.3	1607.5	9965.3	1606.8	9966.5	1606.6
9977	1603.9	9987.7	1601.3	10001.4	1597.9	10010.1	1598.7	10020.8	1599.7
10026.7	1603.7	10037.2	1610.7	10037.9	1611.2	10038.4	1611.5	10054.9	1620.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9889.6	.05	9977	.04	10026.7	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977	10026.7	465.24	469.43	471.12	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9933.30	9977.00	2.33	1.38	3.38	0.10	0.42	1.69
LB 9977.00	9986.94	115.28	20.38	10.23	4.95	2.05	5.66
9986.94	9996.88	425.01	44.60	10.24	18.24	4.49	9.53
9996.88	10006.82	785.63	64.13	10.10	33.72	6.45	12.25
10006.82	10016.76	679.00	58.48	9.98	29.14	5.88	11.61
10016.76	RB 10026.70	321.56	39.09	11.19	13.80	3.93	8.23
10026.70	10040.80	1.19	0.82	1.88	0.05	0.52	1.46

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9933.30	9977.00	6.79	3.11	3.91	0.29	0.95	2.19
LB 9977.00	9986.94	142.10	25.61	10.23	6.10	2.58	5.55
9986.94	9996.88	430.66	49.83	10.24	18.48	5.01	8.64
9996.88	10006.82	754.13	69.36	10.10	32.37	6.98	10.87
10006.82	10016.76	659.71	63.71	9.98	28.31	6.41	10.35
10016.76	RB 10026.70	333.93	44.32	11.19	14.33	4.46	7.53
10026.70	10040.80	2.69	1.64	2.40	0.12	1.05	1.64

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 3.186

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9850.4	1605.7	9870.5	1603.9	9877.8	1603.2	9884.9	1602.3	9904.9	1600.1
9926.9	1599.3	9936.6	1598.9	9946.3	1599.3	9946.4	1599.3	9947.1	1599.3
9967.3	1598.7	9967.4	1598.7	9975.4	1597	9977.4	1596.6	9984.1	1596.3
9985.6	1596.3	9986.3	1596.2	9986.8	1596.2	9994	1595.9	9995.7	1595.8
10005.1	1595.4	10016.3	1599.7	10017	1599.8	10018.2	1599.9	10020.4	1600.1
10025.7	1600	10028.7	1600.1	10035.5	1600	10037.3	1600.2	10043.3	1600.5
10045	1600.8	10049	1601.2	10050.9	1601.5	10057.9	1602.5	10064.6	1602.8
10070.5	1603.8	10077.4	1604.9	10082.6	1605.5	10087.7	1605.9	10096.6	1607

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9850.4	.05	9967.4	.04	10016.3	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967.4	10016.3	328.94	340.33	345.52	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9873.80	9897.20	0.08	0.15	1.68	0.00	0.09	0.49
9897.20	9920.60	64.46	25.34	23.46	2.77	1.08	2.54
9920.60	9944.00	173.60	45.89	23.42	7.45	1.96	3.78
9944.00	9967.40	194.17	49.07	23.41	8.33	2.10	3.96
LB 9967.40	9977.18	237.30	33.92	9.99	10.18	3.47	7.00
9977.18	9986.96	403.47	46.27	9.80	17.32	4.73	8.72
9986.96	9996.74	464.58	50.34	9.79	19.94	5.15	9.23
9996.74	10006.52	521.53	54.17	9.89	22.38	5.54	9.63
10006.52	RB 10016.30	212.58	32.35	10.48	9.12	3.31	6.57
10016.30	10036.38	48.39	22.26	20.10	2.08	1.11	2.17
10036.38	10056.45	9.83	6.96	11.99	0.42	0.58	1.41

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9967.40	9977.18	257.70	37.72	12.81	11.06	3.86	6.83
9977.18	9986.96	494.13	50.07	9.80	21.21	5.12	9.87
9986.96	9996.74	563.17	54.14	9.79	24.17	5.54	10.40
9996.74	10006.52	626.97	57.97	9.89	26.91	5.93	10.82
10006.52	RB 10016.30	274.67	36.15	10.48	11.79	3.70	7.60
10016.30	10036.38	88.40	30.06	20.10	3.79	1.50	2.94
10036.38	10056.45	24.96	11.59	12.38	1.07	0.97	2.15

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 3.121

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9814.8	1603.8	9823.3	1602.9	9830.9	1602.4	9837.6	1602	9870.9	1598.8
9892.2	1597.8	9900	1597.3	9913.7	1596.5	9919	1596.1	9925.8	1595.8
9931.1	1595.6	9934.2	1595.7	9942.4	1595.7	9944.2	1595.7	9945.8	1595.7
9968.5	1595.7	9968.6	1595.6	9975.9	1593.9	9980.6	1593	9984.6	1592.7
9991.8	1592.2	10000.1	1592.4	10003.9	1592.5	10010.1	1593.5	10024.9	1596.2
10032.3	1597.5	10051.6	1599.2	10070.4	1601.3	10083.5	1602.9	10084.4	1602.9
10085.9	1603	10103.4	1604.2						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9814.8	.06	9968.6	.065	10024.9	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.6	10024.9	271.57	253.82	205.72	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9876.32	9907.08	11.99	7.00	14.98	0.51	0.47	1.71
9907.08	9937.84	219.01	53.40	30.80	9.40	1.74	4.10
9937.84	9968.60	301.62	64.71	30.80	12.94	2.10	4.66
LB 9968.60	9979.86	242.64	39.25	11.53	10.41	3.49	6.18
9979.86	9991.12	472.36	58.07	11.30	20.27	5.16	8.13
9991.12	10002.38	524.03	61.72	11.26	22.49	5.48	8.49
10002.38	10013.64	390.27	51.97	11.40	16.75	4.61	7.51
10013.64	RB 10024.90	152.50	29.62	11.45	6.55	2.63	5.15
10024.90	10064.15	15.58	7.58	10.97	0.67	0.70	2.06

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9937.84	9968.60	346.07	70.27	26.62	14.85	2.98	4.92
LB 9968.60	9979.86	294.54	49.09	11.53	12.64	4.36	6.00
9979.86	9991.12	512.65	67.91	11.30	22.00	6.03	7.55
9991.12	10002.38	560.62	71.56	11.26	24.06	6.36	7.83
10002.38	10013.64	435.65	61.81	11.40	18.70	5.49	7.05
10013.64	RB 10024.90	180.48	39.46	13.92	7.75	3.50	4.57

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 3.073

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9920.6	1606.7	9928	1604.8	9933.5	1603.9	9939	1603	9948.3	1600.7
9949.5	1600.3	9960.1	1596.9	9960.5	1596.8	9971.1	1593.6	9985.7	1589.3
9987	1588.9	9989.1	1588.3	10007.5	1588.6	10007.7	1588.6	10007.8	1588.6
10007.9	1588.6	10008.8	1588.9	10015.6	1590.6	10016.9	1591	10021.7	1591.3
10035.2	1592.5	10037.7	1592.9	10047.2	1594.4	10047.3	1594.4	10048	1594.4
10050.9	1594.3	10063.4	1593.8	10077.2	1594.3	10087.1	1594.7	10091	1594.5
10094.5	1594.3	10101.8	1593.6	10115.9	1592.5	10119.4	1591.5	10122	1591.3
10126.7	1590.8	10133.9	1589.6	10140.8	1588.6	10144.6	1590.1	10150.6	1591.9
10161.3	1594.7	10161.4	1594.7	10178.1	1595.7	10185.2	1596	10191.6	1596.1
10194.5	1596.2	10207.5	1596.8	10215.9	1597.2	10225.1	1597.6		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9920.6	.06	9971.1	.065	10047.3	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.1	10047.3	332.16	306.29	158.74	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9945.85	9971.10	0.44	0.38	1.66	0.02	0.24	1.16
LB 9971.10	9986.34	198.34	41.50	15.89	8.51	2.72	4.78
9986.34	10001.58	679.53	85.71	15.36	29.16	5.62	7.93
10001.58	10016.82	517.48	73.16	15.55	22.21	4.80	7.07
10016.82	10032.06	178.17	38.33	15.29	7.65	2.51	4.65
10032.06	RB 10047.30	33.38	13.24	13.24	1.43	1.01	2.52
10047.30	10069.52	1.36	2.00	13.10	0.06	0.15	0.68
10069.52	10091.75	0.01	0.04	1.57	0.00	0.03	0.22
10091.75	10113.97	25.00	12.81	17.23	1.07	0.75	1.95
10113.97	10136.20	354.43	69.98	22.53	15.21	3.15	5.06
10136.20	10158.42	341.85	69.15	23.09	14.67	3.11	4.94
10158.42	10180.65	0.01	0.03	0.52	0.00	0.07	0.38

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9945.85	9971.10	2.99	1.23	2.20	0.13	0.78	2.42
LB 9971.10	9986.34	313.54	49.70	15.89	13.46	3.26	6.31
9986.34	10001.58	926.33	93.90	15.36	39.76	6.16	9.86
10001.58	10016.82	723.09	81.35	15.55	31.03	5.34	8.89
10016.82	10032.06	288.10	46.52	15.29	12.36	3.05	6.19
10032.06	RB 10047.30	75.95	21.08	15.62	3.26	1.38	3.60

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 3.015

INPUT
Description: 100-year, 6-hour peak discharge of 2890 cfs from HEC-1 model at station C104.
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9846.2	1598.1	9865.1	1596.4	9876	1595.6	9877.5	1595.4	9884.8	1594.7
9885.8	1594.6	9891.4	1593.9	9892.6	1593.8	9897.1	1593.7	9905.7	1593
9913.6	1592.4	9917.6	1592.1	9934.1	1591	9934.3	1591	9934.9	1590.9
9939.8	1590	9944.8	1589.3	9947.6	1588.8	9950.1	1588.5	9955.5	1588.1
9960.1	1587.8	9960.2	1587.7	9961.1	1587.5	9965.5	1586.4	9977.7	1583.9
9991.4	1582.3	9992.3	1582.2	9992.7	1582.2	9997	1581.4	9997.4	1581.4
10002.2	1581.7	10002.5	1581.8	10008.4	1583.5	10016.1	1584.2	10020.6	1584.5
10021.8	1584.6	10031.7	1587.7	10039	1590.1	10040.5	1590.2	10046.7	1590.9
10077.5	1594	10089.8	1595.1	10099.5	1596.1	10104.9	1596.6	10106.5	1596.8
10113.8	1597.7								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9846.2	.055	9960.2	.055	10031.7	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960.2	10031.7	460.62	483.24	501.59	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9903.20	9960.20	4.50	2.73	8.79	0.16	0.31	1.65
LB 9960.20	9974.50	193.19	33.38	14.64	6.68	2.33	5.79
9974.50	9988.80	677.55	70.47	14.44	23.44	4.93	9.61
9988.80	10003.10	1083.69	93.43	14.45	37.50	6.53	11.60
10003.10	10017.40	673.55	70.43	14.55	23.31	4.93	9.56
10017.40	RB 10031.70	256.24	39.69	14.79	8.87	2.78	6.46
10031.70	10072.75	1.28	0.74	2.24	0.04	0.35	1.72

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9903.20	9960.20	4.53	2.74	8.79	0.16	0.31	1.65
LB 9960.20	9974.50	193.30	33.40	14.64	6.69	2.34	5.79
9974.50	9988.80	677.52	70.50	14.44	23.44	4.93	9.61
9988.80	10003.10	1083.51	93.45	14.45	37.49	6.53	11.59

10003.10	10017.40	673.52	70.46	14.55	23.31	4.93	9.56
10017.40	RB 10031.70	256.34	39.72	14.79	8.87	2.78	6.45
10031.70	10072.75	1.29	0.75	2.24	0.04	0.35	1.72

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 2.923

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9948	1588.1	9949.7	1587.8	9961.1	1584.7	9973	1580.3	9973.1	1580.2
9977.3	1578.9	9981.1	1577.2	9985.1	1576.4	9989.5	1575.2	9994.5	1574
9999.4	1573.7	9999.5	1573.7	9999.6	1573.7	10004.8	1574.9	10005.5	1574.9
10010.6	1575	10011.3	1575.2	10015.9	1576.1	10023.7	1576.7	10025.5	1576.8
10033.8	1581	10042.2	1585.3	10046	1587.4	10047.1	1587.5	10050.6	1587.3
10057	1587.5	10057.8	1587.6	10059	1587.7	10064.4	1588.1		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9948	.055	9973	.055	10033.8	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9973	10033.8	240.71	229.35	196.32	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9960.50	9973.00	6.38	2.86	4.19	0.22	0.73	2.23
LB 9973.00	9985.16	269.06	43.62	12.84	9.31	3.59	6.17
9985.16	9997.32	814.15	83.75	12.47	28.17	6.89	9.72
9997.32	10009.48	907.31	88.90	12.30	31.39	7.31	10.21
10009.48	10021.64	631.30	71.50	12.29	21.84	5.88	8.83
10021.64	RB 10033.80	261.02	43.27	13.17	9.03	3.56	6.03
10033.80	10049.10	0.77	0.55	1.65	0.03	0.38	1.39

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9960.50	9973.00	6.35	2.85	4.18	0.22	0.73	2.23
LB 9973.00	9985.16	268.93	43.58	12.84	9.31	3.58	6.17
9985.16	9997.32	814.26	83.72	12.47	28.18	6.88	9.73
9997.32	10009.48	907.47	88.87	12.30	31.40	7.31	10.21
10009.48	10021.64	631.32	71.46	12.29	21.84	5.88	8.83
10021.64	RB 10033.80	260.90	43.23	13.17	9.03	3.56	6.03
10033.80	10049.10	0.77	0.55	1.65	0.03	0.38	1.39

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 2.880

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9960.9	1603.8	9963.2	1602.3	9965.4	1600.9	9988.2	1577.7	9994.6	1571.2
9995	1570.8	9995.2	1570.7	9995.6	1570.8	9997.9	1570.8	10002.6	1571
10006.8	1571.1	10007.6	1571.1	10008.8	1571.3	10015.7	1572.8	10025.8	1573.1
10032.8	1573.3	10045.4	1575.7	10052.4	1577	10054	1577.2	10081.5	1581.8
10091.4	1582.2	10104.7	1582.7						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9960.9	.06	9988.2	.06	10032.8	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.2	10032.8	159.24	167.27	171.89	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9974.55	9988.20	0.01	0.01	0.22	0.00	0.08	0.53
LB 9988.20	9997.12	305.90	39.57	11.84	10.58	4.44	7.73
9997.12	10006.04	774.06	61.68	8.93	26.78	6.91	12.55
10006.04	10014.96	628.93	54.83	9.08	21.76	6.15	11.47
10014.96	10023.88	443.75	44.20	8.94	15.35	4.96	10.04
10023.88	RB 10032.80	405.05	41.82	8.92	14.02	4.69	9.69
10032.80	10056.77	332.21	55.32	24.36	11.50	2.31	6.01
10056.77	10080.73	0.09	0.12	1.20	0.00	0.10	0.74

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9974.55	9988.20	0.01	0.01	0.23	0.00	0.08	0.54
LB 9988.20	9997.12	305.95	39.61	11.84	10.59	4.44	7.72
9997.12	10006.04	773.65	61.72	8.93	26.77	6.92	12.53
10006.04	10014.96	628.69	54.88	9.08	21.75	6.15	11.46
10014.96	10023.88	443.72	44.25	8.94	15.35	4.96	10.03
10023.88	RB 10032.80	405.07	41.86	8.92	14.02	4.69	9.68
10032.80	10056.77	332.82	55.44	24.36	11.52	2.31	6.00
10056.77	10080.73	0.09	0.12	1.20	0.00	0.10	0.76

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 2.848

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9940.7	1583.7	9949	1582.9	9953.3	1582.5	9954.3	1582.5	9957	1582.2
9960	1581.1	9960.6	1580.9	9961.7	1580.1	9965.7	1578.5	9978.7	1572.7
9987.4	1568.9	9990	1568.7	10003.2	1567.9	10005	1567.8	10007.7	1568.4
10011.8	1569	10015.9	1569	10016.4	1569.1	10026	1570.9	10027	1571
10027.5	1571.1	10040.5	1573.3	10050.2	1574.9	10052.4	1575	10056.6	1575.2
10058.7	1575.2	10063.5	1574.5	10068.8	1573.8	10072.6	1574.8	10074.9	1575
10082.1	1574.7	10085.2	1575	10091.8	1575.7	10122.3	1578.4	10123.1	1578.6
10148.1	1589.8								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9940.7	.06	9978.7	.06	10040.5	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.7	10040.5	153.85	188.43	225.87	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10056.15	10148.1	1575.41

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.70	9978.70	15.40	4.80	5.08	0.53	1.04	3.20
LB 9978.70	9991.06	472.96	56.54	13.16	16.37	4.57	8.37
9991.06	10003.42	886.89	80.45	12.38	30.69	6.51	11.02
10003.42	10015.78	817.08	76.81	12.47	28.27	6.21	10.64
10015.78	10028.14	499.61	57.34	12.56	17.29	4.64	8.71
10028.14	RB 10040.50	180.46	31.10	12.54	6.24	2.52	5.80
10040.50	10056.15	17.60	6.55	9.03	0.61	0.74	2.69
10056.15	10086.80	0.00	5.41	13.46	0.00	0.41	0.00

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.70	9978.70	15.21	4.74	5.05	0.53	1.03	3.21
LB 9978.70	9991.06	472.77	56.37	13.16	16.36	4.56	8.39
9991.06	10003.42	887.81	80.29	12.38	30.72	6.50	11.06
10003.42	10015.78	817.80	76.65	12.47	28.30	6.20	10.67
10015.78	10028.14	499.45	57.18	12.56	17.28	4.63	8.73
10028.14	RB 10040.50	179.69	30.94	12.54	6.22	2.50	5.81
10040.50	10056.15	17.27	6.44	8.95	0.60	0.73	2.68
10056.15	10086.80	0.00	5.24	12.86	0.00	0.41	0.00

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 2.813

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9877.2	1580.2	9881.8	1578.7	9894.4	1574.9	9921	1574.8	9922.9	1574.8
9932.3	1572.7	9950.7	1568.6	9966.4	1567	9968.6	1566.9	9969.9	1566.9
9976.7	1566.8	9982.6	1565.8	9992.1	1564.1	9992.2	1564.1	10001.9	1563.9
10003.6	1564.6	10005.9	1567.3	10008.2	1570.3	10010.7	1572.6	10013.9	1574.8
10018.9	1579.6								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9877.2	.06	9976.7	.06	10008.2	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.7	10008.2	216.74	225.46	210.16	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9936.90	9956.80	173.27	36.31	18.94	6.00	1.95	4.77
9956.80	9976.70	675.28	83.85	19.95	23.37	4.21	8.05
LB 9976.70	9983.00	302.42	32.25	6.39	10.46	5.12	9.38
9983.00	9989.30	418.01	39.19	6.40	14.46	6.22	10.67
9989.30	9995.60	535.63	45.33	6.35	18.53	7.19	11.82
9995.60	10001.90	566.67	46.75	6.30	19.61	7.42	12.12
10001.90	RB 10008.20	217.57	30.58	9.17	7.53	4.85	7.11
10008.20	10013.55	1.16	0.64	1.60	0.04	0.54	1.81

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9936.90	9956.80	175.19	36.71	18.96	6.06	1.97	4.77
9956.80	9976.70	676.54	84.28	19.95	23.41	4.23	8.03
LB 9976.70	9983.00	302.34	32.39	6.39	10.46	5.14	9.33
9983.00	9989.30	417.39	39.33	6.40	14.44	6.24	10.61
9989.30	9995.60	534.42	45.46	6.35	18.49	7.22	11.76
9995.60	10001.90	565.31	46.89	6.30	19.56	7.44	12.06
10001.90	RB 10008.20	217.60	30.72	9.17	7.53	4.88	7.08
10008.20	10013.55	1.22	0.67	1.63	0.04	0.56	1.82

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 2.770

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9949	1578.4	9953.5	1575.6	9958.9	1573.6	9959.7	1573	9969.8	1567.1
9970.2	1566.8	9970.3	1566.8	9990.6	1562.1	9990.7	1562.1	9990.9	1562.1
10000.7	1561.9	10001.9	1561.9	10008.1	1561.9	10015.6	1563.4	10019.1	1564.1
10024.4	1564.4	10034.6	1564.8	10036.9	1565	10041	1565.9	10048.9	1567.8
10079.6	1580								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9949	.055	9970.3	.055	10019.1	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970.3	10019.1	499.23	506.19	499.62	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.65	9970.30	7.63	3.16	3.82	0.26	0.96	2.42
LB 9970.30	9980.06	163.01	29.80	10.02	5.64	3.05	5.47
9980.06	9989.82	410.37	51.85	10.02	14.20	5.31	7.91
9989.82	9999.58	613.00	65.35	9.78	21.21	6.70	9.38
9999.58	10009.34	629.92	66.43	9.78	21.80	6.81	9.48
10009.34	RB 10019.10	449.84	54.65	9.95	15.57	5.60	8.23
10019.10	10031.20	349.63	52.20	12.11	12.10	4.31	6.70
10031.20	10043.30	237.79	41.64	12.28	8.23	3.44	5.71
10043.30	10055.40	28.81	10.02	8.26	1.00	1.26	2.88

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.65	9970.30	7.03	2.91	3.67	0.24	0.92	2.41
LB 9970.30	9980.06	160.24	29.05	10.02	5.54	2.98	5.52
9980.06	9989.82	410.77	51.11	10.02	14.21	5.24	8.04
9989.82	9999.58	616.70	64.60	9.78	21.34	6.62	9.55
9999.58	10009.34	633.93	65.68	9.78	21.94	6.73	9.65
10009.34	RB 10019.10	450.85	53.90	9.95	15.60	5.52	8.36
10019.10	10031.20	348.28	51.27	12.11	12.05	4.24	6.79
10031.20	10043.30	235.06	40.72	12.28	8.13	3.36	5.77
10043.30	10055.40	27.13	9.42	8.05	0.94	1.22	2.88

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross

section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 2.674

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9921.7	1570	9921.8	1570	9933	1568.5	9934	1568.2	9935.7	1567.7
9938.5	1566.8	9942.6	1565.5	9947.3	1564.1	9953.6	1561.6	9956.6	1560.9
9956.7	1560.9	9961.9	1559.4	9973.7	1556.1	9975.4	1555.7	9977.4	1555.5
9985.5	1554.7	9988	1554.5	9990.1	1554.4	9994.2	1554.2	10003.4	1553.8
10009.8	1559.8	10013.8	1562.3	10019.2	1565.7	10035.5	1577.4	10040.7	1580.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9921.7	.06	9956.7	.06	10009.8	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9956.7	10009.8	269.32	330.79	339.22	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9939.20	9956.70	3.07	1.64	3.61	0.11	0.47	1.87
LB 9956.70	9967.32	130.32	25.25	11.04	4.51	2.38	5.16
9967.32	9977.94	496.18	56.07	10.92	17.17	5.28	8.85
9977.94	9988.56	773.59	72.50	10.66	26.77	6.83	10.67
9988.56	9999.18	914.06	80.03	10.63	31.63	7.54	11.42
9999.18	RB 10009.80	564.21	64.93	13.00	19.52	6.11	8.69
10009.80	10025.25	8.57	3.07	3.69	0.30	0.98	2.80

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9939.20	9956.70	4.76	2.24	3.78	0.16	0.64	2.12
LB 9956.70	9967.32	139.53	27.07	11.04	4.83	2.55	5.15
9967.32	9977.94	498.88	57.90	10.92	17.26	5.45	8.62
9977.94	9988.56	768.59	74.32	10.66	26.59	7.00	10.34
9988.56	9999.18	904.67	81.85	10.63	31.30	7.71	11.05
9999.18	RB 10009.80	563.23	66.75	13.00	19.49	6.29	8.44
10009.80	10025.25	10.34	3.60	3.86	0.36	1.15	2.87

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 2.611

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9829.9	1570.2	9853.4	1562	9855.7	1561.2	9860.9	1560.8	9886.8	1559
9893.5	1558.3	9893.8	1558.3	9897.3	1557.9	9902.7	1557.5	9907.1	1557.6
9913.6	1557.8	9932.4	1557.6	9934.4	1557.6	9936.2	1557.6	9937.2	1557.3
9946.1	1555.4	9949.6	1554.6	9950.4	1554.5	9960.6	1554	9977.4	1553.2
9977.5	1553.2	9982.9	1551.4	9989.5	1549.4	9991.9	1548.6	9995	1547.5
9998.8	1547.7	10000.4	1547.8	10008.7	1548.1	10011.4	1549.5	10019.7	1555.4
10027	1560.7	10027.4	1560.9	10028.1	1561.5	10036.2	1569.2		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9829.9	.06	9977.4	.06	10019.7	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.4	10019.7	297.19	285.83	257.33	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9940.53	9977.40	257.46	53.79	32.88	8.91	1.64	4.79
LB 9977.40	9985.86	248.73	32.70	8.88	8.61	3.87	7.61
9985.86	9994.32	595.63	55.26	8.90	20.61	6.53	10.78
9994.32	10002.78	861.38	67.73	8.51	29.81	8.01	12.72
10002.78	10011.24	753.34	63.29	8.78	26.07	7.48	11.90
10011.24	RB 10019.70	173.41	28.01	10.36	6.00	3.31	6.19
10019.70	10027.95	0.05	0.06	0.52	0.00	0.15	0.85

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta	Right Sta	Flow	Area	W.P.	% Conv.	Hydr D.	Velocity

(ft)	(ft)	(cfs)	(sq ft)	(ft)		(ft)	(ft/s)
9940.53	9977.40	153.66	27.87	14.37	5.32	2.25	5.51
LB 9977.40	9985.86	260.20	33.03	8.88	9.00	3.90	7.88
9985.86	9994.32	618.91	55.59	8.90	21.42	6.57	11.13
9994.32	10002.78	893.44	68.05	8.51	30.91	8.04	13.13
10002.78	10011.24	781.82	63.62	8.78	27.05	7.52	12.29
10011.24	RB 10019.70	181.90	28.33	10.36	6.29	3.35	6.42
10019.70	10027.95	0.08	0.08	0.56	0.00	0.19	0.97

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 2.557

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9950.6	1572.8	9952.1	1571.6	9959.7	1565.9	9964	1563.3	9968.5	1558.2
9979.3	1548.7	9979.4	1548.7	9982.9	1543.7	9998.1	1543.2	9998.9	1543.2
9999.4	1543.2	10008.6	1544.9	10008.8	1544.9	10020.4	1546.3	10025.6	1548.3
10037.8	1553.1	10046.7	1556.9	10063	1562.7	10066.7	1564.2	10076.2	1568.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9950.6	.055	9979.4	.055	10020.4	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.4	10020.4	476.26	475.97	475.25	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9965.00	9979.40	6.35	2.26	2.99	0.22	1.00	2.80
LB 9979.40	9987.60	432.27	48.27	10.81	14.96	5.89	8.95
9987.60	9995.80	726.35	59.03	8.20	25.13	7.20	12.30
9995.80	10004.00	715.46	58.71	8.28	24.76	7.16	12.19
10004.00	10012.20	511.78	48.08	8.30	17.71	5.86	10.65
10012.20	RB 10020.40	368.52	39.40	8.26	12.75	4.80	9.35
10020.40	10039.00	129.26	23.98	11.88	4.47	2.17	5.39

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9965.00	9979.40	5.87	2.10	2.88	0.20	0.96	2.79
LB 9979.40	9987.60	432.26	47.68	10.81	14.96	5.81	9.07
9987.60	9995.80	729.09	58.44	8.20	25.23	7.13	12.48
9995.80	10004.00	718.09	58.11	8.28	24.85	7.09	12.36
10004.00	10012.20	511.72	47.48	8.30	17.71	5.79	10.78
10012.20	RB 10020.40	366.79	38.80	8.26	12.69	4.73	9.45
10020.40	10039.00	126.18	23.19	11.68	4.37	2.13	5.44

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 2.467

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9904.2	1567.9	9923.7	1560.5	9944	1553.6	9949.7	1550.6	9954.6	1548.1
9961.6	1544.6	9969.1	1540.9	9973.2	1540.3	9974.6	1540.1	9985.4	1539.7
9992.8	1539.3	9994.9	1539.1	9998.1	1538.4	10001.6	1538.4	10005.2	1538.6
10011.4	1539.2	10012.8	1539.4	10015.8	1539.6	10023.9	1540.6	10031.4	1543.8
10047.3	1550.6	10050.5	1551.9	10050.8	1552	10068.9	1558.8	10073.7	1561.1
10083.9	1565.2	10090.3	1567.2	10097.5	1569.3	10098	1569.5		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9904.2	.055	9961.6	.055	10031.4	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9961.6	10031.4	403.61	406.44	407.61	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9932.90	9961.60	0.76	0.58	1.71	0.03	0.38	1.31
LB 9961.60	9975.56	304.32	51.45	14.88	10.53	3.69	5.92

9975.56	9989.52	631.57	77.75	13.97	21.85	5.57	8.12
9989.52	10003.48	819.27	91.09	14.05	28.35	6.52	8.99
10003.48	10017.44	762.39	87.17	14.02	26.38	6.24	8.75
10017.44	RB 10031.40	365.55	57.09	14.66	12.65	4.09	6.40
10031.40	10064.70	6.14	2.86	3.98	0.21	0.78	2.15

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9932.90	9961.60	1.06	0.74	1.81	0.04	0.49	1.43
LB 9961.60	9975.56	306.67	52.90	14.88	10.68	3.79	5.83
9975.56	9989.52	630.70	79.20	13.97	21.82	5.67	7.96
9989.52	10003.48	814.47	92.55	14.05	28.18	6.63	8.80
10003.48	10017.44	758.81	88.63	14.02	26.26	6.35	8.56
10017.44	RB 10031.40	369.10	58.55	14.66	12.77	4.19	6.30
10031.40	10064.70	7.19	3.24	4.08	0.25	0.89	2.22

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 2.390

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9869	1548.4	9874	1547.4	9880.9	1546.3	9895.2	1543.8	9899.4	1543.2
9905.7	1542.5	9919.3	1540.8	9926	1540.3	9929	1539.7	9951.4	1538
9969.8	1536.6	9969.9	1536.6	9973.5	1535.9	9982.5	1534.2	9983.5	1534
9984.7	1534	9993.7	1534.5	9995.4	1534.6	9996.2	1534.6	10002.7	1534.8
10003.5	1534.8	10005.8	1534.6	10007	1534.6	10017.9	1534.5	10024.5	1535.8
10034.8	1537.8	10042.8	1539.8	10049.4	1540.6	10056	1541.4	10059.3	1541.4
10075.8	1542.7	10091.6	1544.3						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9869	.07	9969.8	.07	10042.8	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969.8	10042.8	254.76	229.15	116.94	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9919.40	9944.60	29.32	13.04	16.84	1.01	0.78	2.25
9944.60	9969.80	283.83	59.89	25.27	9.82	2.38	4.74
LB 9969.80	9984.40	539.25	68.74	14.85	18.66	4.71	7.84
9984.40	9999.00	719.04	81.19	14.62	24.88	5.56	8.86
9999.00	10013.60	660.94	77.17	14.61	22.87	5.29	8.56
10013.60	10028.20	541.78	68.84	14.80	18.75	4.72	7.87
10028.20	RB 10042.80	115.79	27.40	14.97	4.01	1.88	4.23
10042.80	10067.20	0.04	0.08	1.12	0.00	0.07	0.49

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9919.40	9944.60	20.32	9.78	15.82	0.70	0.62	2.08
9944.60	9969.80	263.23	54.84	25.27	9.11	2.18	4.80
LB 9969.80	9984.40	544.98	65.81	14.85	18.86	4.51	8.28
9984.40	9999.00	734.95	78.26	14.62	25.43	5.36	9.39
9999.00	10013.60	673.38	74.24	14.61	23.30	5.09	9.07
10013.60	10028.20	547.59	65.91	14.80	18.95	4.51	8.31
10028.20	RB 10042.80	105.55	24.48	14.70	3.65	1.71	4.31

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 2.347

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9986.9	1551.1	9994.8	1537	9998.7	1530.1	10004.3	1530.9	10010.7	1531.2
10013.7	1531.3	10014.2	1531.4	10020.5	1531.4	10027.7	1531.5	10030.3	1531.5
10034.4	1531.8	10035.3	1531.9	10045.7	1533.2	10050.9	1533.7	10055.1	1534
10060.9	1534.7	10061.5	1534.7	10067.3	1534.7	10072.7	1534.8	10072.9	1534.8
10074.6	1534.7	10088.4	1533.7	10090.7	1533.9	10095	1534.2	10102.3	1534.7
10108.9	1534.9	10116.4	1535.2	10122.4	1534.3	10123.6	1534.1	10151.8	1536
10154.1	1536.1	10156.5	1536.1	10157.5	1536.1	10157.7	1536.2	10164.9	1537.4
10165.5	1537.4	10169.7	1537.9	10173.7	1538.2	10177.4	1538.2	10178.6	1538.3
10178.9	1538.3	10185.5	1539.5	10190.8	1540.2	10200.7	1541.9	10201.4	1542

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9986.9	.07	9994.8	.07	10060.9	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9994.8	10060.9	200.15	183.17	104.86	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9990.85	9994.80	0.00	0.00	0.12	0.00	0.05	0.19
LB 9994.80	10008.02	424.56	73.56	17.31	14.69	5.56	5.77
10008.02	10021.24	542.56	76.55	13.24	18.77	5.79	7.09
10021.24	10034.46	509.44	73.70	13.23	17.63	5.58	6.91
10034.46	10047.68	352.88	59.28	13.32	12.21	4.48	5.95
10047.68	RB 10060.90	191.63	41.06	13.29	6.63	3.11	4.67
10060.90	10080.97	192.04	49.29	20.09	6.65	2.46	3.90
10080.97	10101.04	268.15	60.26	20.12	9.28	3.00	4.45
10101.04	10121.11	160.35	44.27	20.14	5.55	2.21	3.62
10121.11	10141.19	191.91	49.32	20.14	6.64	2.46	3.89
10141.19	10161.26	56.31	23.65	20.17	1.95	1.18	2.38
10161.26	10181.33	0.17	0.29	1.88	0.01	0.15	0.61

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9990.85	9994.80	0.01	0.03	0.51	0.00	0.44	0.26
LB 9994.80	10008.02	401.57	78.71	17.31	13.90	5.95	5.10
10008.02	10021.24	511.00	81.70	13.24	17.68	6.18	6.25
10021.24	10034.46	481.75	78.86	13.23	16.67	5.96	6.11
10034.46	10047.68	342.59	64.43	13.32	11.85	4.87	5.32
10047.68	RB 10060.90	197.17	46.21	13.29	6.82	3.50	4.27
10060.90	10080.97	209.21	57.11	20.09	7.24	2.85	3.66
10080.97	10101.04	280.08	68.08	20.12	9.69	3.39	4.11
10101.04	10121.11	179.23	52.10	20.14	6.20	2.60	3.44
10121.11	10141.19	209.04	57.14	20.14	7.23	2.85	3.66
10141.19	10161.26	77.27	31.47	20.17	2.67	1.57	2.46
10161.26	10181.33	1.07	1.01	2.27	0.04	0.54	1.06

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 2.312

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9819.2	1541.7	9820.2	1541.4	9835.9	1539.1	9843.2	1538.2	9849.4	1537.1
9866.5	1533.4	9868.6	1533.1	9870.3	1532.9	9871.4	1532.9	9874.2	1532.7
9884.3	1532	9885	1531.9	9886.3	1531.7	9892.4	1531.3	9903.3	1530.7
9904.2	1530.7	9905.3	1530.7	9907.7	1530.8	9917.7	1531.4	9919.2	1531.7
9923.5	1532.4	9932.1	1533.9	9934	1534	9938.7	1534.1	9963	1533.9
9967.3	1533.7	9981.9	1530.2	9982.9	1530	9983.7	1529.8	9984.2	1529.7
9985.7	1529.5	9997.5	1527.9	9999.1	1527.9	10000	1527.9	10001.7	1528
10010.7	1528.4	10013.2	1529.1	10020.6	1530.9	10029.2	1531.7	10029.8	1531.8
10029.9	1531.8	10042.2	1535.8	10042.8	1535.9	10043.4	1536.1	10052.2	1537
10057.1	1537.7	10061	1538.2	10068.2	1539	10072.5	1539.7		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9819.2	.05	9967.3	.055	10029.9	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967.3	10029.9	362.26	433.25	447.01	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9863.63	9878.44	25.73	8.29	12.56	0.89	0.66	3.11
9878.44	9893.25	147.65	25.28	14.86	5.11	1.71	5.84
9893.25	9908.06	302.23	38.83	14.83	10.46	2.62	7.78
9908.06	9922.87	215.56	31.77	14.91	7.46	2.14	6.79
9922.87	9937.68	12.71	4.34	7.16	0.44	0.61	2.93
9937.68	9967.30						
LB 9967.30	9979.82	77.83	16.61	12.10	2.69	1.41	4.69
9979.82	9992.34	475.40	50.15	12.71	16.45	4.01	9.48
9992.34	10004.86	794.05	67.94	12.57	27.48	5.43	11.69
10004.86	10017.38	620.95	58.94	12.74	21.49	4.71	10.54
10017.38	RB 10029.90	202.71	30.03	12.66	7.01	2.40	6.75
10029.90	10044.10	15.18	4.55	5.56	0.53	0.86	3.34

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9908.06	9922.87	139.00	29.83	14.50	4.81	2.64	4.66
9922.87	9937.68	24.54	10.67	14.95	0.85	0.72	2.30
9937.68	9952.49	1.14	1.68	14.81	0.04	0.11	0.68
9952.49	9967.30	4.47	3.83	14.81	0.15	0.26	1.17
LB 9967.30	9979.82	138.66	24.55	12.88	4.80	1.96	5.65
9979.82	9992.34	588.96	58.16	12.71	20.38	4.65	10.13
9992.34	10004.86	925.33	75.95	12.57	32.02	6.07	12.18
10004.86	10017.38	743.13	66.94	12.74	25.71	5.35	11.10
10017.38	RB 10029.90	290.94	38.04	12.66	10.07	3.04	7.65
10029.90	10044.10	33.83	7.93	6.20	1.17	1.50	4.26

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 2.230

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9842	1532	9845	1531.8	9850.2	1531.5	9875.9	1528.8	9880	1528.3
9882.5	1528	9900.3	1524.9	9900.7	1524.9	9901.1	1524.8	9902.4	1524.7
9913.4	1523.8	9934.4	1523.4	9935.9	1523.3	9936.3	1523.3	9937.8	1524
9949.3	1528.2	9951.4	1528	9962.1	1526.7	9962.3	1526.7	9983.7	1523.7
9994.2	1522.1	9997	1521.6	10002.1	1521.4	10003	1521.3	10005	1521.4
10005.8	1521.5	10008.9	1522.1	10015.4	1523.6	10018.7	1522.7	10019.3	1522.5
10022	1522.6	10022.1	1522.6	10024.4	1524	10029.4	1527.2	10043.5	1536.3
10047.2	1537	10056.7	1539.2	10059.4	1540	10075.7	1541.8		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9842	.05	9962.3	.055	10029.4	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9962.3	10029.4	496.31	509.18	505.48	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9878.09	9890.12	5.97	3.60	6.52	0.21	0.56	1.66
9890.12	9902.15	105.92	25.94	12.20	3.67	2.16	4.08
9902.15	9914.18	246.33	42.85	12.07	8.52	3.56	5.75
9914.18	9926.21	314.75	49.59	12.03	10.89	4.12	6.35
9926.21	9938.24	333.37	51.64	12.22	11.54	4.29	6.46
9938.24	9950.27	63.65	18.06	10.59	2.20	1.82	3.53
9950.27	9962.30	8.55	5.13	9.26	0.30	0.56	1.67
LB 9962.30	9975.72	101.68	27.28	13.55	3.52	2.03	3.73
9975.72	9989.14	304.58	52.71	13.56	10.54	3.93	5.78
9989.14	10002.56	592.95	78.54	13.53	20.52	5.85	7.55
10002.56	10015.98	532.78	73.98	13.68	18.44	5.51	7.20
10015.98	RB 10029.40	279.21	51.93	14.88	9.66	3.87	5.38
10029.40	10044.83	0.24	0.27	1.09	0.01	0.30	0.90

Warning: Divided flow computed for this cross-section.

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9926.21	9936.24	172.62	31.35	11.52	5.97	4.97	5.51
9936.24	9950.27	114.92	25.58	12.75	3.98	2.13	4.49
9950.27	9962.30	37.30	12.76	12.11	1.29	1.06	2.92
LB 9962.30	9975.72	184.06	36.32	13.55	6.37	2.71	5.07
9975.72	9989.14	445.51	61.75	13.56	15.42	4.60	7.22
9989.14	10002.56	798.86	87.58	13.53	27.64	6.53	9.12
10002.56	10015.98	725.41	83.02	13.68	25.10	6.19	8.74
10015.98	RB 10029.40	409.90	60.96	14.88	14.18	4.54	6.72
10029.40	10044.83	1.42	0.89	1.77	0.05	0.97	1.60

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 2.134

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9898.7	1524.2	9910.7	1522.8	9929.6	1521.9	9936.5	1521.1	9939.7	1521
9946.8	1520	9951.2	1519.1	9954.5	1518.3	9960.7	1517.3	9971.5	1515.7
9975.8	1515.6	9978.2	1515.1	9983.5	1514.4	9986.3	1514.3	9996.9	1513.5
10002.7	1513.6	10003.9	1513.7	10011.5	1519.3	10020.6	1526.2	10025.5	1530.5
10030.3	1531.9	10032.4	1532.9	10034.1	1533.2	10038.6	1534.3	10040.7	1535.3
10042.5	1536.8	10043.7	1537.6						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9898.7	.055	9951.2	.055	10011.5	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951.2	10011.5	434.95	458.98	449.99	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9933.70	9951.20	6.78	2.79	5.66	0.23	0.50	2.43
LB 9951.20	9963.26	171.83	27.28	12.26	5.95	2.26	6.30
9963.26	9975.32	458.10	48.96	12.15	15.85	4.06	9.36
9975.32	9987.38	735.57	65.07	12.16	25.45	5.40	11.30
9987.38	9999.44	975.16	76.88	12.09	33.74	6.37	12.68
9999.44	RB 10011.50	541.61	57.13	13.90	18.74	4.74	9.48
10011.50	10022.23	0.94	0.49	1.43	0.03	0.43	1.91

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9933.70	9951.20	5.79	2.40	5.13	0.20	0.48	2.41
LB 9951.20	9963.26	166.84	26.39	12.26	5.77	2.19	6.32
9963.26	9975.32	455.94	48.07	12.15	15.78	3.99	9.49
9975.32	9987.38	737.73	64.18	12.16	25.53	5.32	11.50
9987.38	9999.44	981.49	75.98	12.09	33.96	6.30	12.92
9999.44	RB 10011.50	541.45	56.24	13.90	18.74	4.66	9.63
10011.50	10022.23	0.76	0.41	1.31	0.03	0.39	1.85

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 2.047

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9924.8	1521.2	9930.1	1520.8	9940.1	1519	9947.4	1520.2	9950.5	1520.4
9969.5	1510.3	9973.5	1508.1	9977.7	1505.8	9978.2	1505.7	9989.4	1504.1
9998.3	1503.2	10004.1	1503.5	10005.5	1503.5	10006.3	1503.5	10014.1	1505.7
10021.1	1507.5	10021.2	1507.5	10036.8	1509.4	10042.1	1510	10047.5	1512.3
10066.8	1519.1	10077.3	1521	10083.1	1522.1				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9924.8	.055	9973.5	.055	10021.2	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9973.5	10021.2	298.81	290.36	298.2	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.27	9973.50	8.87	2.65	3.54	0.31	0.85	3.35
LB 9973.50	9983.04	321.78	35.58	10.19	11.13	3.73	9.05
9983.04	9992.58	630.63	52.06	9.62	21.82	5.46	12.11
9992.58	10002.12	823.74	61.00	9.57	28.50	6.39	13.50
10002.12	10011.66	710.21	56.21	9.75	24.57	5.89	12.63
10011.66	RB 10021.20	297.99	33.54	9.86	10.31	3.52	8.89
10021.20	10041.83	96.77	21.89	19.33	3.35	1.14	4.42

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.27	9973.50	9.81	2.88	3.62	0.34	0.93	3.40
LB 9973.50	9983.04	323.83	36.30	10.19	11.21	3.81	8.92
9983.04	9992.58	627.93	52.79	9.62	21.73	5.53	11.89
9992.58	10002.12	817.45	61.73	9.57	28.29	6.47	13.24
10002.12	10011.66	705.97	56.94	9.75	24.43	5.97	12.40
10011.66	RB 10021.20	300.50	34.27	9.86	10.40	3.59	8.77
10021.20	10041.83	104.52	23.36	19.40	3.62	1.22	4.47

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 1.992

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9943	1516.8	9961	1501.9	9967.1	1498.9	9977.3	1499.7	9986.1	1501.2
9986.2	1501.2	9993.6	1496.4	9999	1493.8	10000.3	1493.9	10004.2	1494
10011.1	1494.4	10016.4	1496.8	10022.2	1500.1	10028.8	1501.3	10033.2	1501.4
10050.2	1502.4	10058.2	1505.5	10065.8	1507.9	10075.7	1511.1	10078.3	1512.2
10080.3	1512.9	10087.6	1516.1	10089.7	1516.6				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9943	.06	9986.1	.06	10022.2	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986.1	10022.2	340.59	337.51	319.26	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9951.62	9960.24	1.86	1.39	2.38	0.06	0.76	1.34
9960.24	9968.86	141.07	32.56	9.55	4.88	3.78	4.33
9968.86	9977.48	214.57	40.25	8.65	7.42	4.67	5.33
9977.48	9986.10	136.82	30.86	8.74	4.73	3.58	4.43
LB 9986.10	9993.32	187.03	36.98	8.59	6.47	5.12	5.06
9993.32	10000.54	521.90	66.11	7.87	18.06	9.16	7.89
10000.54	10007.76	641.75	72.33	7.23	22.21	10.02	8.87
10007.76	10014.98	540.02	66.56	7.61	18.69	9.22	8.11
10014.98	RB 10022.20	249.21	43.19	8.23	8.62	5.98	5.77
10022.20	10035.70	158.18	40.37	13.61	5.47	2.99	3.92
10035.70	10049.20	88.24	28.36	13.52	3.05	2.10	3.11

10049.20	10062.70	9.35	5.17	5.55	0.32	0.99	1.81

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9951.62	9960.24	1.86	1.39	2.38	0.06	0.76	1.34
9960.24	9968.86	141.07	32.56	9.55	4.88	3.78	4.33
9968.86	9977.48	214.58	40.25	8.65	7.42	4.67	5.33
9977.48	9986.10	136.82	30.86	8.74	4.73	3.58	4.43
LB 9986.10	9993.32	187.03	36.98	8.59	6.47	5.12	5.06
9993.32	10000.54	521.90	66.11	7.87	18.06	9.16	7.89
10000.54	10007.76	641.75	72.33	7.23	22.21	10.02	8.87
10007.76	10014.98	540.02	66.56	7.61	18.69	9.22	8.11
10014.98	RB 10022.20	249.20	43.19	8.23	8.62	5.98	5.77
10022.20	10035.70	158.18	40.37	13.61	5.47	2.99	3.92
10035.70	10049.20	88.24	28.36	13.52	3.05	2.10	3.11
10049.20	10062.70	9.35	5.17	5.55	0.32	0.99	1.81

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 1.928

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9953.9	1529.6	9962.1	1522.8	9962.3	1522.7	9962.3	1522.6	9962.4	1522.5
9981.4	1499.4	9987.3	1492.3	10000.5	1491.5	10001	1491.5	10001.8	1491.6
10015.9	1493.7	10024	1496	10024.3	1496.1	10031.1	1498.1	10031.8	1498.3
10033.2	1498.9	10042	1502.4	10054.8	1507.6	10079.6	1510		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9953.9	.06	9981.4	.06	10031.1	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.4	10031.1	365.87	345.26	306.03	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9981.40	9991.34	391.73	48.61	13.08	13.55	4.95	8.06
9991.34	10001.28	956.21	74.46	9.96	33.09	7.49	12.84
10001.28	10011.22	845.74	69.42	10.05	29.26	6.98	12.18
10011.22	10021.16	531.39	52.84	10.20	18.39	5.32	10.06
10021.16	RB 10031.10	160.53	25.92	10.36	5.55	2.61	6.19
10031.10	10047.27	4.40	1.79	3.19	0.15	0.60	2.46

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9981.40	9991.34	391.75	48.61	13.08	13.56	4.96	8.06
9991.34	10001.28	956.20	74.46	9.96	33.09	7.49	12.84
10001.28	10011.22	845.73	69.42	10.05	29.26	6.98	12.18
10011.22	10021.16	531.39	52.84	10.20	18.39	5.32	10.06
10021.16	RB 10031.10	160.53	25.92	10.36	5.55	2.61	6.19
10031.10	10047.27	4.40	1.79	3.19	0.15	0.60	2.46

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 1.862

INPUT
Description:
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9947.3	1507.8	9949.7	1507.8	9968.3	1498.8	9981	1491.8	9985.3	1489.5
9995.1	1485.5	10003.8	1485.6	10006.6	1485.5	10011.7	1486.4	10016.2	1487
10017.8	1487.3	10026	1492	10042.1	1502.8	10055.4	1504.5	10063.7	1505.3
10073	1507.6								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9947.3	.06	9981	.06	10026	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981	10026	508.64	499.19	473.46	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.77	9981.00	16.73	5.91	5.29	0.58	1.28	2.83
LB 9981.00	9990.00	286.80	43.23	9.95	9.99	4.80	6.68
9990.00	9999.00	738.93	74.27	9.41	25.57	8.25	9.95
9999.00	10008.00	842.23	79.01	9.02	29.14	8.78	10.66
10008.00	10017.00	696.44	70.89	9.11	24.17	7.88	9.85
10017.00	RB 10026.00	294.19	44.26	10.27	10.18	4.92	6.65
10026.00	10041.67	10.68	4.12	4.22	0.37	1.18	2.59

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.77	9981.00	16.73	5.91	5.29	0.58	1.28	2.83
LB 9981.00	9990.00	286.80	43.23	9.95	9.99	4.80	6.68
9990.00	9999.00	738.94	74.27	9.41	25.57	8.25	9.95
9999.00	10008.00	842.24	79.00	9.02	29.14	8.78	10.66
10008.00	10017.00	696.45	70.88	9.11	24.17	7.88	9.85
10017.00	RB 10026.00	294.18	44.25	10.27	10.18	4.92	6.65
10026.00	10041.67	10.67	4.12	4.22	0.37	1.18	2.59

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 1.768

INPUT
Description:
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9928.4	1498.2	9942.4	1496.2	9964.3	1486.5	9972.6	1482.9	9977.9	1482
9994.6	1479.3	9996.3	1479.3	10006.4	1479.1	10021.7	1486.2	10023.4	1487
10047.7	1499.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9928.4	.06	9964.3	.06	10021.7	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9964.3	10021.7	247.98	310.53	346.2	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9952.33	9964.30	0.02	0.03	0.37	0.00	0.08	0.59
LB 9964.30	9975.78	165.88	28.97	12.27	5.74	2.52	5.73
9975.78	9987.26	579.80	60.08	11.63	20.06	5.23	9.65
9987.26	9998.74	939.06	80.08	11.58	32.49	6.98	11.73
9998.74	10010.22	974.29	82.70	11.87	33.71	7.20	11.78
10010.22	RB 10021.70	230.70	35.75	12.66	7.98	3.11	6.45
10021.70	10030.37	0.26	0.22	1.06	0.01	0.23	1.22

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9952.33	9964.30	0.02	0.03	0.37	0.00	0.08	0.59
LB 9964.30	9975.78	165.90	28.98	12.27	5.74	2.52	5.73
9975.78	9987.26	579.80	60.08	11.63	20.06	5.23	9.65
9987.26	9998.74	939.03	80.09	11.58	32.49	6.98	11.72
9998.74	10010.22	974.26	82.71	11.87	33.71	7.20	11.78
10010.22	RB 10021.70	230.72	35.75	12.66	7.98	3.11	6.45
10021.70	10030.37	0.26	0.22	1.06	0.01	0.23	1.22

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 1.709

INPUT
Description:
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9938.7	1493.8	9952.1	1490.3	9965	1485.3	9979.3	1479.2	9986.7	1476
9999.4	1476.1	10013.2	1476.5	10016.4	1476.5	10019.4	1477.1	10035.3	1480
10039.2	1480.7	10039.7	1480.8	10042.2	1481.3	10067.6	1487	10076.3	1488.5
10096.4	1492.1	10098.7	1492.6	10105.8	1493.8				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9938.7	.06	9979.3	.06	10019.4	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.3	10019.4	172.32	179.1	189.35	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.00	9979.30	90.52	27.34	12.31	3.13	2.41	3.31
LB 9979.30	9987.32	337.70	52.56	8.68	11.69	6.55	6.43
9987.32	9995.34	495.71	64.10	8.02	17.15	7.99	7.73
9995.34	10003.36	487.08	63.44	8.02	16.85	7.91	7.68
10003.36	10011.38	465.52	61.74	8.02	16.11	7.70	7.54
10011.38	RB 10019.40	436.11	59.54	8.08	15.09	7.42	7.32
10019.40	10036.68	483.71	92.51	17.56	16.74	5.35	5.23
10036.68	10053.96	93.65	34.63	17.67	3.24	2.00	2.70
10053.96	10071.24	0.00	0.02	0.41	0.00	0.05	0.22

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.00	9979.30	90.46	27.32	12.30	3.13	2.41	3.31
LB 9979.30	9987.32	337.71	52.54	8.68	11.69	6.55	6.43
9987.32	9995.34	495.76	64.08	8.02	17.15	7.99	7.74
9995.34	10003.36	487.13	63.42	8.02	16.86	7.91	7.68
10003.36	10011.38	465.56	61.72	8.02	16.11	7.70	7.54
10011.38	RB 10019.40	436.14	59.52	8.08	15.09	7.42	7.33
10019.40	10036.68	483.69	92.48	17.56	16.74	5.35	5.23
10036.68	10053.96	93.55	34.59	17.67	3.24	2.00	2.70
10053.96	10071.24	0.00	0.02	0.40	0.00	0.04	0.21

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 1.675

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9966.5	1502.6	9968.3	1502.1	9981.6	1479.2	9983.6	1475.6	9985.1	1473.2
9987	1473.1	9998.3	1471.9	10002.2	1472	10016.7	1477	10025.6	1479.5
10030.9	1481.1	10036.4	1481.9	10040.3	1481.9	10041.2	1481.9	10041.9	1481.9
10044.6	1482	10048.9	1482.2	10070.2	1483.3	10085.9	1483.3	10095.9	1484.7
10115.8	1488	10134.3	1491						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9966.5	.06	9981.6	.06	10030.9	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.6	10030.9	200.81	203	198.24	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9974.05	9981.60	5.95	2.98	3.70	0.21	1.60	2.00
LB 9981.60	9991.46	588.37	82.13	13.34	20.36	8.33	7.16
9991.46	10001.32	1012.21	100.95	9.90	35.02	10.24	10.03
10001.32	10011.18	790.05	88.66	10.38	27.34	8.99	8.91
10011.18	10021.04	366.67	55.87	10.35	12.69	5.67	6.56
10021.04	RB 10030.90	111.62	27.29	10.27	3.86	2.77	4.09
10030.90	10065.37	15.13	10.63	21.97	0.52	0.49	1.42

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9974.05	9981.60	5.92	2.96	3.69	0.20	1.60	2.00
LB 9981.60	9991.46	588.47	82.06	13.34	20.36	8.32	7.17
9991.46	10001.32	1012.62	100.88	9.90	35.04	10.23	10.04
10001.32	10011.18	790.25	88.60	10.38	27.34	8.99	8.92
10011.18	10021.04	366.51	55.81	10.35	12.68	5.66	6.57
10021.04	RB 10030.90	111.35	27.23	10.27	3.85	2.76	4.09
10030.90	10065.37	14.88	10.49	21.85	0.51	0.48	1.42

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 1.637

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9928.7	1499	9936.7	1496.9	9940.6	1495.6	9955.2	1493.5	9957.8	1493.2
9963.2	1489.1	9967.8	1485.3	9972.4	1483.2	9982.7	1477.5	9985.1	1475.9
9988.8	1473.5	9990.3	1472.4	9993.8	1469.1	9997	1468	9997.8	1467.7
10001.8	1467.4	10005.9	1466.8	10015.9	1475.8	10018.8	1478.5	10018.9	1478.6
10036.2	1482.6	10065.4	1490.5	10071.6	1492.2	10077.2	1493.1	10083.2	1494.8
10083.5	1494.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9928.7	.06	9985.1	.06	10015.9	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.1	10015.9	80.11	82.9	84.66	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9956.90	9985.10	1.58	0.64	1.67	0.05	0.46	2.46
LB 9985.10	9991.26	136.39	18.36	7.59	4.72	2.98	7.43
9991.26	9997.42	664.34	46.81	7.32	22.99	7.60	14.19
9997.42	10003.58	1045.92	57.56	6.22	36.19	9.34	18.17
10003.58	10009.74	847.82	54.73	7.51	29.34	8.88	15.49
10009.74	RB 10015.90	192.59	23.40	8.29	6.66	3.80	8.23
10015.90	10049.70	1.37	0.56	1.51	0.05	0.51	2.42

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9956.90	9985.10	1.65	0.66	1.69	0.06	0.48	2.49
LB 9985.10	9991.26	137.09	18.46	7.59	4.74	3.00	7.43
9991.26	9997.42	664.24	46.90	7.32	22.98	7.61	14.16
9997.42	10003.58	1045.10	57.65	6.22	36.16	9.36	18.13
10003.58	10009.74	847.27	54.83	7.51	29.32	8.90	15.45
10009.74	RB 10015.90	193.22	23.49	8.29	6.69	3.81	8.23
10015.90	10049.70	1.42	0.58	1.52	0.05	0.53	2.44

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the

cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 1.621

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9949.7	1484.7	9953.7	1483.9	9957.1	1482.8	9963.9	1478.2	9970.6	1472
9973.7	1471.4	9974.2	1471.2	9979.6	1470.2	9982	1469.7	9987.4	1469.4
9987.5	1469.4	9990.3	1467.9	9991.1	1467.7	9991.7	1467.8	9996.6	1468
10003.9	1467.9	10009.6	1467.4	10011.6	1467.4	10013.5	1467.3	10013.7	1467.3
10014.3	1467.7	10019.9	1471.5	10034.5	1479.7	10049.2	1486	10050.9	1487

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9949.7	.055	9987.5	.055	10019.9	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.5	10019.9	158.28	161.94	163.12	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.15	9968.60	0.40	0.31	1.11	0.01	0.38	1.29
9968.60	9978.05	170.69	28.50	10.34	5.91	3.02	5.99
9978.05	9987.50	394.18	45.60	9.54	13.64	4.82	8.65
LB 9987.50	9993.98	444.76	41.64	6.89	15.39	6.43	10.68
9993.98	10000.46	489.48	43.04	6.48	16.94	6.64	11.37
10000.46	10006.94	502.98	43.78	6.49	17.40	6.76	11.49
10006.94	10013.42	555.47	46.46	6.49	19.22	7.17	11.96
10013.42	RB 10019.90	297.73	34.34	7.77	10.30	5.30	8.67
10019.90	10035.40	34.31	8.58	6.34	1.19	1.55	4.00

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.15	9968.60	0.40	0.31	1.11	0.01	0.38	1.30
9968.60	9978.05	170.87	28.54	10.34	5.91	3.02	5.99
9978.05	9987.50	394.27	45.63	9.54	13.64	4.83	8.64
LB 9987.50	9993.98	444.70	41.67	6.89	15.39	6.43	10.67
9993.98	10000.46	489.39	43.06	6.48	16.93	6.65	11.36
10000.46	10006.94	502.88	43.80	6.49	17.40	6.76	11.48
10006.94	10013.42	555.34	46.49	6.49	19.22	7.17	11.95
10013.42	RB 10019.90	297.75	34.36	7.77	10.30	5.30	8.66
10019.90	10035.40	34.40	8.60	6.35	1.19	1.56	4.00

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 1.590

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9929.6	1486.8	9930.4	1486.4	9931.8	1485.7	9941.1	1482.3	9945.2	1481.1
9953.1	1479.1	9956.8	1478.7	9967.1	1473.7	9981.5	1469	9981.6	1469
9990	1465.1	9996.4	1464.9	10009.8	1464.7	10009.9	1464.7	10016.5	1466.8
10032	1471.9	10033.3	1472.9	10040.8	1475.1	10043.7	1475.9	10067.1	1484.4
10070.7	1485.7	10075.7	1487.9						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9929.6	.055	9981.6	.055	10032	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.6	10032	595.02	588.5	561.54	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9955.60	9981.60	112.18	28.17	13.82	3.88	2.14	3.98
LB 9981.60	9991.68	509.93	65.87	10.94	17.64	6.53	7.74
9991.68	10001.76	808.97	84.09	10.08	27.99	8.34	9.62
10001.76	10011.84	821.10	85.16	10.18	28.41	8.45	9.64
10011.84	10021.92	492.58	63.70	10.60	17.04	6.32	7.73
10021.92	RB 10032.00	143.29	30.38	10.61	4.96	3.01	4.72
10032.00	10053.85	1.95	1.33	2.90	0.07	0.53	1.47

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9955.60	9981.60	113.22	28.44	13.84	3.92	2.16	3.98
LB 9981.60	9991.68	509.89	66.08	10.94	17.64	6.56	7.72
9991.68	10001.76	807.99	84.30	10.08	27.96	8.36	9.58
10001.76	10011.84	820.06	85.37	10.18	28.38	8.47	9.61
10011.84	10021.92	492.63	63.90	10.60	17.05	6.34	7.71
10021.92	RB 10032.00	144.15	30.59	10.61	4.99	3.03	4.71
10032.00	10053.85	2.06	1.38	2.92	0.07	0.55	1.49

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 1.479

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9953.6	1492.6	9955	1492.1	9955.3	1491.8	9956.3	1491.3	9964.3	1486.6
9966.4	1484.1	9984.2	1464.8	9988.9	1459.6	9992.1	1459.2	10005.7	1459.3
10010.3	1459.4	10012	1459.5	10017	1459.9	10024.2	1460.3	10024.4	1460.4
10026.7	1461	10027.6	1461.3	10028.9	1461.8	10031.9	1462.7	10036.9	1464.4
10069.2	1475	10072.6	1475.8						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9953.6	.055	9984.2	.055	10036.9	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.2	10036.9	421.65	428.79	433.45	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.90	9984.20	0.59	0.37	1.22	0.02	0.45	1.61
LB 9984.20	9994.74	476.85	53.68	12.87	16.50	5.09	8.88
9994.74	10005.28	804.79	67.83	10.54	27.85	6.44	11.87
10005.28	10015.82	759.57	65.56	10.56	26.28	6.22	11.59
10015.82	10026.36	617.85	58.11	10.64	21.38	5.51	10.63
10026.36	RB 10036.90	223.77	32.13	11.11	7.74	3.05	6.96
10036.90	10054.75	6.57	2.55	4.15	0.23	0.65	2.58

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.90	9984.20	0.54	0.34	1.17	0.02	0.43	1.58
LB 9984.20	9994.74	476.52	53.29	12.87	16.49	5.06	8.94
9994.74	10005.28	806.28	67.44	10.54	27.90	6.40	11.96
10005.28	10015.82	760.72	65.17	10.56	26.32	6.18	11.67
10015.82	10026.36	618.00	57.72	10.64	21.38	5.48	10.71
10026.36	RB 10036.90	221.80	31.75	11.11	7.67	3.01	6.99
10036.90	10054.75	6.16	2.41	4.03	0.21	0.63	2.56

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 1.398

INPUT
Description:
Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9970.5	1468.2	9977.3	1466.3	9977.9	1465.8	9979.3	1463.1	9990	1452.2
9999.8	1440.9	10013.4	1450.6	10013.7	1450.8	10034.1	1464.8		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

9970.5 .055 9990 .055 10013.7 .055

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9990 10013.7 125.78 126.94 130.26 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9980.25	9990.00	5.83	1.67	2.58	0.20	0.92	3.49
LB 9990.00	9994.74	195.06	21.69	7.23	6.75	4.58	8.99
9994.74	9999.48	722.79	47.60	7.24	25.01	10.04	15.18
9999.48	10004.22	1059.99	55.26	5.92	36.68	11.66	19.18
10004.22	10008.96	608.21	39.35	5.82	21.05	8.30	15.46
10008.96	RB 10013.70	254.64	23.32	5.81	8.81	4.92	10.92
10013.70	10023.90	43.49	7.66	5.73	1.50	1.62	5.67

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9980.25	9990.00	6.37	1.79	2.65	0.22	0.99	3.55
LB 9990.00	9994.74	197.19	22.03	7.23	6.82	4.65	8.95
9994.74	9999.48	720.72	47.93	7.24	24.94	10.11	15.04
9999.48	10004.22	1055.26	55.60	5.92	36.51	11.73	18.98
10004.22	10008.96	607.93	39.68	5.82	21.04	8.37	15.32
10008.96	RB 10013.70	256.97	23.66	5.81	8.89	4.99	10.86
10013.70	10023.90	45.56	8.00	5.80	1.58	1.69	5.70

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 1.374

INPUT
Description:
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9982.4	1460.2	9991.9	1448	9996	1442.5	9999.7	1438.2	10025.9	1448.3
10026.1	1448.3	10031.2	1449.5	10033.5	1451.6	10049.4	1464	10072.5	1483.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9982.4	.055	9991.9	.055	10025.9	.055

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9991.9 10025.9 31.52 34.55 28.31 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9987.15	9991.90	1.83	0.72	1.72	0.06	0.68	2.56
LB 9991.90	9998.70	382.00	39.59	11.00	13.22	5.82	9.65
9998.70	10005.50	1211.98	68.80	7.75	41.94	10.12	17.61
10005.50	10012.30	785.57	51.76	7.29	27.18	7.61	15.18
10012.30	10019.10	388.58	33.93	7.29	13.45	4.99	11.45
10019.10	RB 10025.90	112.22	16.10	7.29	3.88	2.37	6.97
10025.90	10049.20	7.83	2.59	4.82	0.27	0.55	3.03

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta	Right Sta	Flow	Area	W.P.	% Conv.	Hydr D.	Velocity

(ft)	(ft)	(cfs)	(sq ft)	(ft)		(ft)	(ft/s)
9987.15	9991.90	1.96	0.76	1.76	0.07	0.72	2.59
LB 9991.90	9998.70	382.58	39.86	11.00	13.24	5.86	9.60
9998.70	10005.50	1207.96	69.08	7.75	41.80	10.16	17.49
10005.50	10012.30	784.67	52.03	7.29	27.15	7.65	15.08
10012.30	10019.10	389.91	34.20	7.29	13.49	5.03	11.40
10019.10	RB 10025.90	114.26	16.37	7.29	3.95	2.41	6.98
10025.90	10049.20	8.66	2.77	4.85	0.30	0.59	3.12

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 1.367

INPUT
Description:
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9969.2	1457.6	9970.7	1455.4	9977.5	1446	9983	1438.7	9985.6	1438.6
9992.4	1438	9996.5	1430.1	10000	1425.1	10005.6	1432.2	10013.8	1442.7
10019.7	1450.4	10047.6	1475.5	10057.1	1483.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9969.2	.055	9992.4	.055	10013.8	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9992.4	10013.8	433.56	429.03	431.88	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9980.80	9986.60	80.14	11.51	6.71	2.77	2.11	6.96
9986.60	9992.40	167.85	16.95	5.82	5.81	2.92	9.90
LB 9992.40	9996.68	312.26	31.25	9.22	10.80	7.30	9.99
9996.68	10000.96	1088.61	60.35	7.34	37.67	14.10	18.04
10000.96	10005.24	883.80	52.00	6.91	30.58	12.15	17.00
10005.24	10009.52	326.44	28.67	6.95	11.30	6.70	11.39
10009.52	RB 10013.80	30.92	6.12	5.02	1.07	1.98	5.05

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9980.80	9986.60	82.04	11.78	6.76	2.84	2.15	6.96
9986.60	9992.40	170.85	17.24	5.82	5.91	2.97	9.91
LB 9992.40	9996.68	312.73	31.46	9.22	10.82	7.35	9.94
9996.68	10000.96	1084.29	60.56	7.34	37.52	14.15	17.90
10000.96	10005.24	881.13	52.21	6.91	30.49	12.20	16.88
10005.24	10009.52	327.26	28.88	6.95	11.32	6.75	11.33
10009.52	RB 10013.80	31.70	6.28	5.07	1.10	2.03	5.05

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 1.286

INPUT
Description: 100-year, 6-hour Peak Discharge of 3190 cfs from HEC-1 model at station C105L.

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9942.3	1458.2	9946.9	1455.3	9950.1	1453.5	9958.7	1442.1	9967	1434.8
9974.5	1431	9977.2	1427.3	9982.4	1420.2	9992	1418.8	10001.9	1419.3
10004.6	1419.5	10009.1	1422.4	10016	1426.8	10033.9	1438.3	10044.9	1447

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9942.3	.055	9977.2	.055	10016	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.2	10016	428.18	413.04	409.95	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.75	9977.20	0.62	0.41	1.32	0.02	0.53	1.50
LB 9977.20	9984.96	340.95	45.38	11.39	10.69	5.85	7.51
9984.96	9992.72	913.74	70.60	7.84	28.64	9.10	12.94
9992.72	10000.48	958.89	72.43	7.77	30.06	9.33	13.24
10000.48	10008.24	759.01	65.13	8.46	23.79	8.39	11.65
10008.24	RB 10016.00	212.09	31.35	9.21	6.65	4.04	6.77
10016.00	10030.45	4.69	1.91	2.90	0.15	0.78	2.46

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m), between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.75	9977.20	0.62	0.41	1.32	0.02	0.53	1.50
LB 9977.20	9984.96	340.95	45.38	11.39	10.69	5.85	7.51
9984.96	9992.72	913.74	70.60	7.84	28.64	9.10	12.94
9992.72	10000.48	958.89	72.43	7.77	30.06	9.33	13.24
10000.48	10008.24	759.01	65.13	8.46	23.79	8.39	11.65
10008.24	RB 10016.00	212.09	31.35	9.21	6.65	4.04	6.77
10016.00	10030.45	4.69	1.91	2.90	0.15	0.78	2.46

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m), between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 1.208

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9938.7	1439.2	9941.9	1437.3	9960.6	1425.4	9962.5	1424.1	9962.9	1423.5
9964.4	1422.8	9974.3	1418.2	9974.3	1418.1	9978.4	1415.9	9982	1415.5
9982.9	1415.3	9986.1	1414.7	9994.7	1413.4	10003	1413.3	10007.3	1413.5
10015.3	1414.8	10019	1415.4	10021	1419.2	10027.4	1431.7	10039.8	1449.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9938.7	.055	9974.3	.055	10021	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.3	10021	467.62	482.74	493.73	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9956.50	9974.30	12.14	3.27	4.14	0.38	0.87	3.71
LB 9974.30	9983.64	334.83	34.93	10.05	10.50	3.74	9.59
9983.64	9992.98	676.47	51.99	9.46	21.21	5.57	13.01
9992.98	10002.32	895.41	61.25	9.36	28.07	6.56	14.62
10002.32	10011.66	843.62	59.20	9.40	26.45	6.34	14.25
10011.66	RB 10021.00	427.35	43.01	11.73	13.40	4.61	9.94
10021.00	10030.40	0.19	0.14	0.84	0.01	0.37	1.33

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m), between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)

9956.50	9974.30	12.14	3.27	4.14	0.38	0.87	3.71
LB 9974.30	9983.64	334.82	34.92	10.05	10.50	3.74	9.59
9983.64	9992.98	676.47	51.99	9.46	21.21	5.57	13.01
9992.98	10002.32	895.41	61.25	9.36	28.07	6.56	14.62
10002.32	10011.66	843.62	59.20	9.40	26.45	6.34	14.25
10011.66	RB 10021.00	427.35	43.01	11.73	13.40	4.60	9.94
10021.00	10030.40	0.19	0.14	0.84	0.01	0.37	1.33

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m), between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 1.116

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9968.5	1430.3	9977.5	1420.1	9985.4	1410.8	9991	1404.2	10005.2	1404.2
10008.7	1404.1	10013	1405.4	10014.5	1406.2	10025.1	1411.6	10025.7	1412.1
10028.9	1414.5	10032.8	1420.3	10036.3	1422.8	10039.7	1425.4	10041.7	1426.9
10046.9	1430.4	10047.7	1430.8						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9968.5	.055	9985.4	.055	10025.7	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.4	10025.7	561.45	558.41	558.75	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9976.95	9985.40	18.75	6.83	5.26	0.59	2.01	2.74
LB 9985.40	9993.46	485.06	67.04	11.12	15.21	8.32	7.24
9993.46	10001.52	901.85	85.53	8.06	28.27	10.61	10.54
10001.52	10009.58	901.27	85.67	8.10	28.25	10.63	10.52
10009.58	10017.64	638.51	72.00	8.80	20.02	8.93	8.87
10017.64	RB 10025.70	232.52	39.90	9.15	7.29	4.95	5.83
10025.70	10036.70	12.05	4.87	4.37	0.38	1.43	2.48

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m), between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9976.95	9985.40	18.75	6.83	5.26	0.59	2.01	2.74
LB 9985.40	9993.46	485.06	67.04	11.12	15.21	8.32	7.24
9993.46	10001.52	901.85	85.53	8.06	28.27	10.61	10.54
10001.52	10009.58	901.27	85.67	8.10	28.25	10.63	10.52
10009.58	10017.64	638.51	72.00	8.80	20.02	8.93	8.87
10017.64	RB 10025.70	232.52	39.90	9.15	7.29	4.95	5.83
10025.70	10036.70	12.05	4.87	4.37	0.38	1.43	2.48

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m), between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 1.010

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9952.4	1442	9955.5	1438.6	9960.5	1431.7	9973.7	1424.8	9974.4	1424.4
9975.7	1422.4	9986.6	1406.2	9987.3	1405.1	9994.6	1394.5	9995	1393.5
9996.4	1393.6	10005.9	1394.1	10010.7	1401.9	10014	1407.4	10020.5	1418.9
10021.2	1419.1	10022.4	1419.1	10025.3	1419.8	10030	1420.6	10042	1423.6
10048.3	1425.5	10053.9	1426.7						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9952.4	.055	9987.3	.055	10010.7	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.3	10010.7	501.4	506.24	504.42	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.85	9987.30	0.35	0.23	1.00	0.01	0.42	1.54
LB 9987.30	9991.98	125.15	19.84	8.25	3.92	4.24	6.31
9991.98	9996.66	637.36	50.33	7.36	19.98	10.75	12.66
9996.66	10001.34	1063.22	57.11	4.69	33.33	12.20	18.62
10001.34	10006.02	1011.95	55.96	4.80	31.72	11.96	18.08
10006.02	RB 10010.70	331.10	36.71	8.93	10.38	7.84	9.02
10010.70	10032.30	20.87	4.90	4.71	0.65	2.02	4.26

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.85	9987.30	0.35	0.23	1.00	0.01	0.42	1.54
LB 9987.30	9991.98	125.15	19.84	8.25	3.92	4.24	6.31
9991.98	9996.66	637.36	50.33	7.36	19.98	10.75	12.66
9996.66	10001.34	1063.22	57.11	4.69	33.33	12.20	18.62
10001.34	10006.02	1011.95	55.96	4.80	31.72	11.96	18.08
10006.02	RB 10010.70	331.10	36.71	8.93	10.38	7.84	9.02
10010.70	10032.30	20.87	4.90	4.71	0.65	2.02	4.26

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 0.914

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9955.8	1415.1	9956.2	1414.7	9967.7	1404.2	9982.3	1396	9994.9	1389
9996.1	1388.2	9996.8	1388.2	10007.1	1388.3	10010.8	1390.2	10012.7	1392.4
10019	1397.6	10022.6	1400.4	10028.5	1405.4	10034.5	1410	10043.3	1413.3
10049.9	1417.7	10052.3	1418.4						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9955.8	.055	9982.3	.055	10019	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.3	10019	339.38	340.55	341.31	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.05	9982.30	38.54	10.66	7.07	1.21	1.73	3.61
LB 9982.30	9989.64	291.33	40.37	8.40	9.13	5.50	7.22
9989.64	9996.98	737.38	70.28	8.34	23.12	9.57	10.49
9996.98	10004.32	1046.41	82.39	7.34	32.80	11.22	12.70
10004.32	10011.66	852.89	76.38	8.26	26.74	10.41	11.17
10011.66	RB 10019.00	218.48	36.07	9.76	6.85	4.91	6.06
10019.00	10035.65	4.98	2.23	3.03	0.16	0.93	2.24

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.05	9982.30	38.54	10.66	7.07	1.21	1.73	3.61
LB 9982.30	9989.64	291.32	40.36	8.40	9.13	5.50	7.22
9989.64	9996.98	737.38	70.28	8.34	23.12	9.57	10.49
9996.98	10004.32	1046.42	82.39	7.34	32.80	11.22	12.70
10004.32	10011.66	852.89	76.38	8.26	26.74	10.41	11.17
10011.66	RB 10019.00	218.47	36.07	9.76	6.85	4.91	6.06
10019.00	10035.65	4.98	2.23	3.03	0.16	0.93	2.24

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 0.850

INPUT

Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9941.9	1413.9	9946.9	1411.1	9948.6	1410.1	9959.2	1405	9961.1	1404
9968.6	1401.3	9978.7	1395.6	9981.2	1394.2	9992.2	1387.2	9992.3	1387.2
9997.6	1386.9	10004.3	1386.8	10009.6	1386.8	10016	1388.5	10017.1	1388.8
10017.6	1388.9	10017.7	1389	10026.3	1393.1	10043	1401	10051.9	1402.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9941.9	.055	9978.7	.055	10026.3	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.7	10026.3	166.45	164.21	162.99	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9960.30	9978.70	0.09	0.11	0.73	0.00	0.18	0.82
LB 9978.70	9988.22	156.68	30.65	11.19	4.91	3.22	5.11
9988.22	9997.74	806.53	79.17	10.27	25.28	8.32	10.19
9997.74	10007.26	989.71	86.85	9.52	31.03	9.12	11.40
10007.26	10016.78	854.08	80.33	9.77	26.77	8.44	10.63
10016.78	RB 10026.30	353.98	48.75	10.51	11.10	5.12	7.26
10026.30	10039.10	28.93	8.63	6.68	0.91	1.43	3.35

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9960.30	9978.70	0.09	0.11	0.72	0.00	0.18	0.82
LB 9978.70	9988.22	156.68	30.65	11.19	4.91	3.22	5.11
9988.22	9997.74	806.53	79.17	10.27	25.28	8.32	10.19
9997.74	10007.26	989.71	86.85	9.52	31.03	9.12	11.40
10007.26	10016.78	854.08	80.33	9.77	26.77	8.44	10.63
10016.78	RB 10026.30	353.98	48.75	10.51	11.10	5.12	7.26
10026.30	10039.10	28.93	8.63	6.68	0.91	1.43	3.35

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 0.819

INPUT
Description:
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9948.7	1401.9	9968.3	1393.8	9985.9	1386.5	9986	1386.4	9986.3	1386.3
9986.5	1386.2	9987.9	1386.3	10011.1	1386.5	10022.6	1390	10025.7	1390.8
10030	1392.3	10035.4	1394.2	10063.9	1403.9				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9948.7	.055	9968.3	.055	10035.4	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.3	10035.4	495.87	500.37	513.68	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9958.50	9968.30	1.20	0.88	2.23	0.04	0.43	1.37
LB 9968.30	9981.72	254.30	48.80	14.53	7.97	3.64	5.21
9981.72	9995.14	978.54	107.47	13.85	30.68	8.01	9.11
9995.14	10008.56	1046.70	110.50	13.42	32.81	8.23	9.47
10008.56	10021.98	745.27	91.43	13.91	23.36	6.81	8.15
10021.98	RB 10035.40	163.71	37.05	14.13	5.13	2.76	4.42
10035.40	10049.65	0.28	0.30	1.41	0.01	0.23	0.91

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9958.50	9968.30	1.20	0.88	2.24	0.04	0.43	1.37
LB 9968.30	9981.72	254.31	48.81	14.53	7.97	3.64	5.21
9981.72	9995.14	978.53	107.47	13.85	30.67	8.01	9.11
9995.14	10008.56	1046.68	110.50	13.42	32.81	8.23	9.47
10008.56	10021.98	745.27	91.44	13.91	23.36	6.81	8.15
10021.98	RB 10035.40	163.72	37.06	14.13	5.13	2.76	4.42
10035.40	10049.65	0.28	0.30	1.41	0.01	0.23	0.91

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross

section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 0.724

INPUT
Description:
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9938.6	1397.8	9943	1396.2	9948.6	1393.3	9958.8	1388	9968.2	1387
9975.2	1386	9982.9	1384.4	9989.4	1382.7	10017.1	1382.9	10017.3	1382.9
10017.4	1382.9	10017.6	1383	10032.2	1389.1	10054	1398.2		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9938.6	.055	9958.8	.055	10032.2	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9958.8	10032.2	427.8	420.98	411.78	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9948.70	9958.80	11.90	4.69	4.79	0.37	1.10	2.54
LB 9958.80	9973.48	223.76	44.36	14.79	7.01	3.02	5.04
9973.48	9988.16	587.89	79.74	15.04	18.43	5.43	7.37
9988.16	10002.84	1009.29	109.34	14.72	31.64	7.45	9.23
10002.84	10017.52	989.86	108.00	14.70	31.03	7.36	9.17
10017.52	RB 10032.20	364.89	61.26	15.91	11.44	4.17	5.96
10032.20	10043.10	2.41	1.47	2.87	0.08	0.55	1.64

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9948.70	9958.80	11.88	4.68	4.78	0.37	1.10	2.54
LB 9958.80	9973.48	223.70	44.35	14.79	7.01	3.02	5.04
9973.48	9988.16	587.87	79.72	15.04	18.43	5.43	7.37
9988.16	10002.84	1009.37	109.33	14.72	31.64	7.45	9.23
10002.84	10017.52	989.93	107.98	14.70	31.03	7.36	9.17
10017.52	RB 10032.20	364.84	61.24	15.91	11.44	4.17	5.96
10032.20	10043.10	2.41	1.46	2.87	0.08	0.55	1.64

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 0.644

INPUT
Description:
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9947	1401.7	9951	1399.6	9962.6	1393.1	9975.1	1387.1	9978	1385.4
9986.2	1380.7	9993.2	1378.9	10002.1	1378.9	10003.8	1378.9	10016.7	1380.2
10023.8	1380.7	10028.1	1381.8	10030.8	1382.4	10043.1	1382.7	10045	1382.6
10046.1	1382.8	10060.7	1384.7	10100.4	1401.6				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9947	.055	9978	.055	10030.8	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978	10030.8	370.82	365.58	340.31	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9962.50	9978.00	1.51	1.00	2.14	0.05	0.54	1.52
LB 9978.00	9988.56	242.02	42.50	11.89	7.59	4.02	5.69
9988.56	9999.12	703.09	77.30	10.71	22.04	7.32	9.10
9999.12	10009.68	724.12	78.32	10.59	22.70	7.42	9.25
10009.68	10020.24	577.01	68.38	10.60	18.09	6.48	8.44
10020.24	RB 10030.80	401.47	55.35	10.77	12.59	5.24	7.25
10030.80	10044.72	320.98	54.56	13.93	10.06	3.92	5.88
10044.72	10058.64	199.75	41.18	14.04	6.26	2.96	4.85
10058.64	10072.56	20.05	7.68	6.63	0.63	1.23	2.61

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9962.50	9978.00	1.53	1.01	2.15	0.05	0.54	1.52
LB 9978.00	9988.56	242.13	42.55	11.89	7.59	4.03	5.69

9988.56	9999.12	702.84	77.35	10.71	22.03	7.32	9.09
9999.12	10009.68	723.86	78.36	10.59	22.69	7.42	9.24
10009.68	10020.24	576.88	68.43	10.60	18.08	6.48	8.43
10020.24	RB 10030.80	401.49	55.40	10.77	12.59	5.25	7.25
10030.80	10044.72	321.16	54.62	13.93	10.07	3.92	5.88
10044.72	10058.64	199.98	41.24	14.04	6.27	2.96	4.85
10058.64	10072.56	20.13	7.70	6.63	0.63	1.23	2.61

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 0.575

INPUT
Description:
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9968.2	1386.2	9973.1	1385.7	9974	1385.6	9974.5	1385.5	9987.9	1379.6
9993.6	1376.4	10004.7	1377.7	10009.6	1378.2	10011.9	1378.4	10012	1378.4
10027.9	1378	10036.1	1379.1	10038.3	1379.4	10040.8	1379.3	10056	1379.5
10064.8	1379.5	10066.9	1380.3	10091.1	1389.8				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9968.2	.06	9987.9	.045	10038.3	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.9	10038.3	170.42	149.84	113.13	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9978.05	9987.90	62.41	20.36	10.51	1.96	2.12	3.07
LB 9987.90	9997.98	554.57	64.69	10.95	17.38	6.42	8.57
9997.98	10008.06	571.61	63.90	10.14	17.92	6.34	8.95
10008.06	10018.14	458.81	55.90	10.10	14.38	5.55	8.21
10018.14	10028.22	482.66	57.60	10.09	15.13	5.71	8.38
10028.22	RB 10038.30	398.95	51.55	10.17	12.51	5.11	7.74
10038.30	10048.86	238.56	47.32	10.56	7.48	4.48	5.04
10048.86	10059.42	228.42	46.10	10.56	7.16	4.37	4.95
10059.42	10069.98	180.56	40.60	10.94	5.66	3.84	4.45
10069.98	10080.54	13.46	6.89	6.36	0.42	1.16	1.96

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9978.05	9987.90	62.67	20.46	10.52	1.96	2.13	3.06
LB 9987.90	9997.98	554.19	64.80	10.95	17.37	6.43	8.55
9997.98	10008.06	571.23	64.01	10.14	17.91	6.35	8.92
10008.06	10018.14	458.69	56.01	10.10	14.38	5.56	8.19
10018.14	10028.22	482.49	57.71	10.09	15.13	5.73	8.36
10028.22	RB 10038.30	398.96	51.66	10.17	12.51	5.13	7.72
10038.30	10048.86	238.73	47.44	10.56	7.48	4.49	5.03
10048.86	10059.42	228.61	46.22	10.56	7.17	4.38	4.95
10059.42	10069.98	180.81	40.72	10.94	5.67	3.86	4.44
10069.98	10080.54	13.61	6.95	6.37	0.43	1.17	1.96

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 0.547

INPUT
Description:
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9960.9	1382.8	9968.2	1382.3	9970.4	1382.5	9975.8	1381	9995.7	1375.1
9997.1	1374.7	10002.3	1374.8	10017.9	1375	10022.5	1375.8	10028.4	1377
10036.2	1381	10040.1	1382.4	10050.3	1386.3	10051	1386.5	10052.4	1387
10056.6	1387.8								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9960.9	.06	9975.8	.045	10036.2	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975.8	10036.2	149.9	126.72	79.38	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.35	9975.80	0.38	0.36	1.67	0.01	0.22	1.06
LB 9975.80	9987.88	163.75	27.02	12.60	5.13	2.24	6.06
9987.88	9999.96	785.47	68.94	12.47	24.62	5.71	11.39
9999.96	10012.04	1022.38	79.73	12.08	32.05	6.60	12.82
10012.04	10024.12	911.79	74.68	12.18	28.58	6.18	12.21
10024.12	RB 10036.20	305.94	39.97	13.13	9.59	3.31	7.65
10036.20	10046.40	0.29	0.28	1.32	0.01	0.22	1.04

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.35	9975.80	0.26	0.26	1.42	0.01	0.19	0.98
LB 9975.80	9987.88	159.20	26.24	12.60	4.99	2.17	6.07
9987.88	9999.96	786.77	68.16	12.47	24.66	5.64	11.54
9999.96	10012.04	1026.72	78.95	12.08	32.19	6.54	13.01
10012.04	10024.12	914.64	73.90	12.18	28.67	6.12	12.38
10024.12	RB 10036.20	302.22	39.19	13.13	9.47	3.24	7.71
10036.20	10046.40	0.19	0.20	1.13	0.01	0.19	0.96

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 0.523

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9963.7	1388	9964.5	1387.6	9975.6	1380.3	9977.7	1379.2	9983.9	1375.8
9986.5	1374.4	9987.2	1374.2	9991.5	1371.9	10000.3	1372.6	10003.7	1372.8
10008.2	1372.9	10009.9	1373.6	10014.9	1375.2	10021	1376.1	10040.9	1379
10049.2	1377.7	10054.7	1376.7	10062	1377.7	10062.2	1377.7	10109.6	1391.7

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9963.7	.06	9977.7	.045	10014.9	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.7	10014.9	144.91	202.29	225.91	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9970.70	9977.70	0.37	0.32	1.25	0.01	0.29	1.15
LB 9977.70	9985.14	121.12	19.50	8.48	3.80	2.62	6.21
9985.14	9992.58	555.73	48.07	8.23	17.42	6.46	11.56
9992.58	10000.02	760.69	55.80	7.46	23.85	7.50	13.63
10000.02	10007.46	681.26	52.18	7.45	21.36	7.01	13.06
10007.46	RB 10014.90	479.37	43.11	7.83	15.03	5.79	11.12
10014.90	10030.68	317.79	54.02	15.95	9.96	3.42	5.88
10030.68	10046.47	73.08	22.37	15.96	2.29	1.42	3.27
10046.47	10062.25	181.84	38.67	15.98	5.70	2.45	4.70
10062.25	10078.03	18.75	7.23	7.30	0.59	1.03	2.59

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9970.70	9977.70	2.09	1.38	2.21	0.07	1.25	1.51
LB 9977.70	9985.14	149.61	26.61	8.48	4.69	3.58	5.62
9985.14	9992.58	514.57	55.17	8.23	16.13	7.42	9.33
9992.58	10000.02	683.54	62.91	7.46	21.43	8.46	10.87
10000.02	10007.46	620.17	59.29	7.45	19.44	7.97	10.46
10007.46	RB 10014.90	454.89	50.22	7.83	14.26	6.75	9.06

10014.90	10030.68	360.11	69.10	15.95	11.29	4.38	5.21
10030.68	10046.47	129.68	37.45	15.96	4.07	2.37	3.46
10046.47	10062.25	236.66	53.75	15.98	7.42	3.41	4.40
10062.25	10078.03	38.68	13.92	8.25	1.21	1.99	2.78

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 0.484

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9881.3	1388	9904.7	1379.8	9914.1	1376.3	9914.6	1376.2	9915.2	1376.2
9923.3	1375.7	9924.9	1375.8	9926.1	1375.4	9928.7	1375.9	9932.6	1376.6
9939.3	1377	9940.6	1377.1	9941.2	1377	9948.5	1376.1	9960.8	1375.5
9965.2	1375.2	9965.4	1375.2	9966.3	1375.1	9969.2	1374.8	9971.2	1374.7
9972.2	1374.6	9973.7	1374.4	9974.1	1374.3	9978.1	1373.9	9992.4	1371.9
9996.2	1371.2	10010	1369.2	10015.5	1377.2	10017.3	1378.6	10026.5	1387.2
10026.5	1387.3	10031.1	1398.9	10033.3	1400				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9881.3	.05	9965.2	.04	10015.5	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.2	10015.5	145.65	166.98	170.79	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9905.27	9917.26	49.54	18.16	10.75	1.55	1.77	2.73
9917.26	9929.24	155.13	37.80	12.12	4.86	3.15	4.10
9929.24	9941.23	88.32	26.91	12.06	2.77	2.24	3.28
9941.23	9953.21	114.23	31.38	12.05	3.58	2.62	3.64
9953.21	9965.20	175.48	40.54	12.00	5.50	3.38	4.33
LB 9965.20	9975.26	264.57	42.39	10.12	8.29	4.21	6.24
9975.26	9985.32	395.31	53.99	10.14	12.39	5.37	7.32
9985.32	9995.38	581.85	68.18	10.18	18.24	6.78	8.53
9995.38	10005.44	824.97	84.04	10.17	25.86	8.35	9.82
10005.44	RB 10015.50	537.59	74.52	14.32	16.85	7.41	7.21
10015.50	10024.40	3.03	1.94	2.79	0.09	0.90	1.56

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.21	9965.20	95.38	25.83	10.17	2.99	4.22	3.69
LB 9965.20	9975.26	341.87	49.23	10.12	10.72	4.89	6.94
9975.26	9985.32	485.65	60.84	10.14	15.22	6.05	7.98
9985.32	9995.38	687.16	75.02	10.18	21.54	7.46	9.16
9995.38	10005.44	946.51	90.88	10.17	29.67	9.03	10.41
10005.44	RB 10015.50	626.70	81.36	14.32	19.65	8.09	7.70
10015.50	10024.40	6.72	3.42	3.47	0.21	1.58	1.97

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 0.453

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9889.1	1383.8	9901.4	1378.6	9903.9	1378.1	9910.1	1376.7	9915.8	1376.5
9916.2	1376.5	9917.2	1376.4	9921.1	1376	9922.9	1375.8	9923.3	1375.7
9928.1	1377.3	9929.7	1377.6	9935.6	1374.4	9937.5	1373.5	9938.6	1373.1
9939.1	1373	9940.8	1372.6	9941.7	1372.7	9943.9	1373.3	9952.1	1375.7
9953.7	1376.2	9953.9	1376.3	9954.7	1376.1	9958	1375.3	9959.4	1375.2
9973.2	1373.5	9977.3	1372.4	9985.8	1370.6	10002.6	1370.7	10007	1370.6
10014.7	1375.2	10018.1	1377.2	10039.8	1389.2				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9889.1	.05	9973.2	.04	10018.1	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9973.2	10018.1	163.64	204.56	222.74	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9901.11	9913.13	14.53	8.14	9.09	0.46	0.91	1.78
9913.13	9925.14	61.81	21.82	12.16	1.94	1.82	2.83
9925.14	9937.16	63.07	22.80	13.18	1.98	1.90	2.77
9937.16	9949.17	283.18	54.94	12.49	8.88	4.57	5.15
9949.17	9961.19	104.54	30.11	12.37	3.28	2.51	3.47

9961.19	9973.20	211.81	45.59	12.11	6.64	3.79	4.65
LB 9973.20	9982.18	406.89	50.86	9.23	12.76	5.66	8.00
9982.18	9991.16	624.77	65.29	9.06	19.59	7.27	9.57
9991.16	10000.14	643.68	66.23	8.98	20.18	7.38	9.72
10000.14	10009.12	607.69	64.97	9.33	19.05	7.23	9.35
10009.12	RB 10018.10	167.34	31.35	10.44	5.25	3.49	5.34
10018.10	10028.95	0.69	0.63	1.72	0.02	0.42	1.10

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9961.19	9973.20	255.27	50.38	15.54	8.00	4.20	5.07
LB 9973.20	9982.18	493.99	54.50	9.23	15.49	6.07	9.06
9982.18	9991.16	739.92	68.94	9.06	23.20	7.68	10.73
9991.16	10000.14	761.35	69.87	8.98	23.87	7.78	10.90
10000.14	10009.12	720.00	68.62	9.33	22.57	7.64	10.49
10009.12	RB 10018.10	217.45	35.00	10.44	6.82	3.90	6.21
10018.10	10028.95	2.01	1.24	2.13	0.06	0.82	1.61

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 0.414

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9846.9	1393.6	9848.8	1392.7	9857.5	1388.6	9865	1385.8	9869.3	1384.3
9879.2	1380.3	9900.7	1376.3	9901.7	1376.3	9903.4	1376.4	9908.2	1377.9
9908.4	1377.9	9908.5	1377.9	9909.3	1378	9912.5	1377.9	9914.2	1378
9915.6	1377.7	9916.8	1377.3	9920.6	1375.1	9924.2	1374.6	9935.7	1374.4
9942.9	1373.1	9947.7	1372.2	9950.7	1371.8	9962.5	1371.6	9966.1	1372
9969.1	1371.7	9987.3	1371	9993.9	1369.8	9995.6	1369.1	10004	1368.6
10007.7	1368.2	10009.4	1369.6	10013.8	1371.9	10020	1375.3	10020.2	1375.5
10046.9	1389.4	10048	1390.2	10059.6	1394.9	10061	1395.4	10063	1396.3
10066.9	1398	10071.3	1400.3	10077.7	1402.1	10078.9	1402.4		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9846.9	.065	9987.3	.05	10020	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.3	10020	349.95	306.24	216.97	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9887.01	9907.07	6.76	6.20	10.86	0.21	0.58	1.09
9907.07	9927.13	49.94	20.61	10.88	1.57	2.01	2.42
9927.13	9947.19	246.00	68.76	20.25	7.71	3.43	3.58
9947.19	9967.24	538.62	109.77	20.12	16.88	5.47	4.91
9967.24	9987.30	606.61	117.78	20.08	19.02	5.87	5.15
LB 9987.30	9993.84	334.44	44.85	6.65	10.48	6.86	7.46
9993.84	10000.38	445.93	53.43	6.69	13.98	8.17	8.35
10000.38	10006.92	498.96	56.73	6.56	15.64	8.67	8.80
10006.92	10013.46	344.18	48.06	7.57	10.79	7.35	7.16
10013.46	RB 10020.00	113.61	24.57	7.45	3.56	3.76	4.62
10020.00	10049.45	4.95	3.36	4.10	0.16	0.94	1.47

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9947.19	9967.24	391.24	84.45	20.26	12.26	5.86	4.63
9967.24	9987.30	751.10	124.44	20.08	23.55	6.20	6.04
LB 9987.30	9993.84	394.41	47.02	6.65	12.36	7.19	8.39
9993.84	10000.38	519.40	55.60	6.69	16.28	8.50	9.34
10000.38	10006.92	578.97	58.90	6.56	18.15	9.01	9.83
10006.92	10013.46	403.81	50.23	7.57	12.66	7.68	8.04
10013.46	RB 10020.00	142.60	26.74	7.45	4.47	4.09	5.33
10020.00	10049.45	8.46	4.55	4.44	0.27	1.27	1.86

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1

REACH: Reach 1 RS: 0.356

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9951.3	1386.8	9956.8	1383.3	9963.4	1379.2	9971.3	1375.4	9982.2	1369.9
9985.4	1368.1	9993	1368	10001.1	1367.7	10003.6	1368.4	10012.4	1371.2
10012.5	1371.2	10014.3	1370.9	10019.5	1369.7	10021.9	1369.9	10023.8	1370.6
10026.9	1371.5	10030.5	1373	10030.6	1373.1	10030.8	1373.1	10031.6	1373.4
10036.4	1374.6	10040	1374.8	10049.5	1374	10054.9	1374.9	10055.3	1375.1
10058.3	1374	10062.6	1372.8	10065	1372.5	10072.9	1372.4	10076.6	1372.4
10078.1	1372.4	10080.1	1372.3	10084.4	1372.3	10094.8	1372.3	10101	1372.2
10102.4	1372.3	10110.2	1372.6	10111.2	1372.7	10114.6	1373.6	10115.2	1373.7
10115.8	1373.8	10145	1383.9	10145.5	1384				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9951.3	.05	9971.3	.04	10012.5	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.3	10012.5	152.24	172.3	184.63	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9961.30	9971.30	0.33	0.44	1.49	0.01	0.32	0.76
LB 9971.30	9979.54	82.61	22.46	9.23	2.59	2.73	3.68
9979.54	9987.78	384.96	56.07	9.03	12.07	6.80	6.87
9987.78	9996.02	540.91	66.29	8.24	16.96	8.05	8.16
9996.02	10004.26	543.45	66.90	8.37	17.04	8.12	8.12
10004.26	RB 10012.50	332.82	50.48	8.64	10.43	6.13	6.59
10012.50	10025.80	376.07	75.20	13.68	11.79	5.65	5.00
10025.80	10039.10	106.54	35.51	13.89	3.34	2.67	3.00
10039.10	10052.40	49.32	22.03	13.38	1.55	1.66	2.24
10052.40	10065.70	82.43	30.32	13.76	2.58	2.28	2.72
10065.70	10079.00	182.54	48.20	13.30	5.72	3.62	3.79
10079.00	10092.30	192.79	49.81	13.30	6.04	3.74	3.87
10092.30	10105.60	194.12	50.02	13.31	6.09	3.76	3.88
10105.60	10118.90	118.94	37.63	13.62	3.73	2.83	3.16
10118.90	10132.20	2.16	1.99	3.59	0.07	0.59	1.08

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9961.30	9971.30	1.73	1.66	2.40	0.05	1.24	1.05
LB 9971.30	9979.54	104.52	29.98	9.23	3.28	3.64	3.49
9979.54	9987.78	371.35	63.58	9.03	11.64	7.72	5.84
9987.78	9996.02	506.03	73.80	8.24	15.86	8.96	6.86
9996.02	10004.26	507.63	74.41	8.37	15.91	9.03	6.82
10004.26	RB 10012.50	328.07	58.00	8.64	10.28	7.04	5.66
10012.50	10025.80	379.18	87.33	13.68	11.89	6.57	4.34
10025.80	10039.10	136.64	47.63	13.89	4.28	3.58	2.87
10039.10	10052.40	80.51	34.16	13.38	2.52	2.57	2.36
10052.40	10065.70	113.49	42.45	13.76	3.56	3.19	2.67
10065.70	10079.00	208.52	60.32	13.30	6.54	4.54	3.46
10079.00	10092.30	217.87	61.93	13.30	6.83	4.66	3.52
10092.30	10105.60	219.06	62.14	13.31	6.87	4.67	3.53
10105.60	10118.90	15.40	9.53	6.58	0.48	4.49	1.62

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 0.323

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9951.9	1376.4	9954.3	1374.9	9958.1	1373.2	9960.4	1371.8	9964.9	1371
9979.7	1369.1	9992.9	1369	9993	1369	9993.1	1369	9998.3	1367
9998.4	1367	9998.8	1367	10007.8	1366.9	10010.6	1366.8	10012.9	1367.2
10022.1	1369.5	10029.3	1371.1	10034.2	1372.3	10040.4	1373.8	10044.6	1373.8
10048.6	1373.6	10049.7	1373.7	10051.8	1373.9	10056.9	1374.7	10058.7	1374.8
10067.8	1375.3	10068.1	1375.3	10068.2	1375.3	10075.5	1375.7	10078.3	1376.2
10081.7	1377								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

9951.9 .05 9993 .04 10034.2 .05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9993 10034.2 421.52 450.58 437.29 .3 .5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9951.90	9960.12	2.61	1.21	2.34	0.08	0.61	2.16
9960.12	9968.34	88.18	16.67	8.37	2.76	2.03	5.29
9968.34	9976.56	185.30	25.93	8.29	5.81	3.15	7.15
9976.56	9984.78	278.51	33.04	8.25	8.73	4.02	8.43
9984.78	9993.00	294.85	34.15	8.22	9.24	4.15	8.64
LB 9993.00	10001.24	577.75	45.59	8.61	18.11	5.53	12.67
10001.24	10009.48	731.07	51.60	8.24	22.92	6.26	14.17
10009.48	10017.72	623.12	47.29	8.42	19.53	5.74	13.18
10017.72	10025.96	308.83	31.10	8.47	9.68	3.77	9.93
10025.96	RB 10034.20	96.50	15.48	8.47	3.03	1.88	6.24
10034.20	10057.95	3.29	1.62	3.76	0.10	0.44	2.04

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9976.56	9984.78	112.40	19.54	8.83	3.52	4.51	5.75
9984.78	9993.00	349.06	37.49	8.22	10.94	4.56	9.31
LB 9993.00	10001.24	664.58	48.95	8.61	20.83	5.94	13.58
10001.24	10009.48	829.82	54.95	8.24	26.01	6.67	15.10
10009.48	10017.72	713.84	50.64	8.42	22.38	6.15	14.10
10017.72	10025.96	374.34	34.45	8.47	11.73	4.18	10.86
10025.96	RB 10034.20	136.74	18.83	8.47	4.29	2.28	7.26
10034.20	10057.95	9.23	3.11	4.17	0.29	0.85	2.97

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 0.238

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9968.5	1380.7	9972.3	1378.8	9983.2	1371.4	9986.2	1369.7	9996	1364.2
9997.1	1363.1	9998.1	1363.1	10010	1364.6	10024.5	1366.4	10033.6	1366.4
10101.8	1366.5	10106.4	1367.2	10116.5	1367.4	10136.3	1367.2	10143.4	1366.8
10163.2	1366	10168.2	1366	10171.7	1366.2	10184.6	1370.3	10218.5	1378.4

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9968.5	.05	9986.2	.04	10024.5	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9986.2 10024.5 262.63 256.1 202.91 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9980.30	9986.20	0.13	0.22	1.01	0.00	0.25	0.60
LB 9986.20	9993.86	70.04	20.29	8.78	2.20	2.65	3.45
9993.86	10001.52	316.53	49.40	8.46	9.92	6.45	6.41
10001.52	10009.18	313.69	47.37	7.72	9.83	6.19	6.62
10009.18	10016.84	236.91	40.03	7.72	7.43	5.23	5.92
10016.84	RB 10024.50	169.51	32.74	7.72	5.31	4.27	5.18
10024.50	10046.06	324.62	81.78	21.56	10.18	3.79	3.97
10046.06	10067.61	320.52	81.16	21.56	10.05	3.77	3.95
10067.61	10089.17	316.06	80.48	21.56	9.91	3.73	3.93

10089.17	10110.72	280.77	75.03	21.61	8.80	3.48	3.74
10110.72	10132.28	204.19	61.92	21.56	6.40	2.87	3.30
10132.28	10153.83	264.55	72.36	21.58	8.29	3.36	3.66
10153.83	10175.39	347.46	85.49	21.75	10.89	3.97	4.06
10175.39	10196.94	25.02	12.57	9.33	0.78	1.41	1.99

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9980.30	9986.20	0.36	0.90	1.79	0.03	1.02	0.95
LB 9986.20	9993.86	98.36	26.22	8.78	3.08	3.42	3.75
9993.86	10001.52	350.20	55.33	8.46	10.98	7.22	6.33
10001.52	10009.18	349.71	53.31	7.72	10.96	6.96	6.56
10009.18	10016.84	273.16	45.96	7.72	8.56	6.00	5.94
10016.84	RB 10024.50	204.89	38.68	7.72	6.42	5.05	5.30
10024.50	10046.06	402.30	98.47	21.56	12.63	4.57	4.09
10046.06	10067.61	398.58	97.85	21.56	12.49	4.54	4.07
10067.61	10089.17	393.97	97.17	21.56	12.35	4.51	4.05
10089.17	10110.72	357.28	91.73	21.61	11.20	4.26	3.90
10110.72	10132.28	276.74	78.61	21.56	8.68	3.65	3.52
10132.28	10153.83	83.45	30.20	11.91	2.62	3.82	2.76

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 0.190

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9941.6	1379.9	9941.6	1379.8	9943.5	1379.1	9955	1374.4	9967.4	1369.3
9979.6	1364.3	9983	1363	9984.6	1363	9987.5	1362.9	9997.9	1362.7
10001.7	1363	10012.1	1363.9	10014.9	1364.1	10015.2	1364.1	10017.3	1364.3
10017.6	1364.3	10045.5	1365.5	10045.6	1365.5	10047.5	1365.5	10051.3	1365.4
10073.3	1364.8	10079.8	1364.8	10086.8	1364.6	10091.6	1364.3	10099.3	1363.9
10107.2	1365.1	10114.4	1365.9	10115.9	1365.7	10143.6	1373	10167.4	1378.3
10173.6	1380.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9941.6	.05	9967.4	.04	10045.6	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967.4	10045.6	123.69	258.62	318.63	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9958.80	9967.40	0.08	0.19	1.05	0.00	0.20	0.41
LB 9967.40	9983.04	191.79	56.18	16.86	6.01	3.59	3.41
9983.04	9998.68	591.73	107.18	15.65	18.55	6.85	5.52
9998.68	10014.32	510.87	98.26	15.69	16.01	6.28	5.20
10014.32	10029.96	374.80	81.53	15.66	11.75	5.21	4.60
10029.96	RB 10045.60	296.65	70.84	15.65	9.30	4.53	4.19
10045.60	10071.20	380.03	115.04	25.61	11.91	4.49	3.30
10071.20	10096.80	471.80	131.00	25.62	14.79	5.12	3.60
10096.80	10122.40	359.40	111.88	25.97	11.27	4.37	3.21
10122.40	10148.00	12.84	9.91	8.97	0.40	1.14	1.30

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9958.80	9967.40	0.78	1.00	1.88	0.02	1.03	0.78
LB 9967.40	9983.04	255.83	69.20	16.86	8.02	4.42	3.70
9983.04	9998.68	675.07	120.20	15.65	21.16	7.69	5.62
9998.68	10014.32	592.41	111.28	15.69	18.57	7.11	5.32
10014.32	10029.96	452.15	94.55	15.66	14.17	6.05	4.78
10029.96	RB 10045.60	370.35	83.86	15.65	11.61	5.36	4.42
10045.60	10071.20	489.44	136.35	25.61	15.34	5.33	3.59
10071.20	10096.80	353.96	111.85	25.38	11.10	5.82	3.16

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 0.141

INPUT
Description:
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9848.7	1380.1	9882.3	1369.3	9887.6	1367.2	9896.4	1366.3	9899.1	1366

9902	1365.7	9912.1	1365.5	9913.7	1365.4	9924.1	1365.2	9981.6	1363.6
9996.1	1362.1	10001.4	1361.5	10011	1367.8	10015.1	1370.6	10025.2	1378.2
10027.4	1379.3	10036.8	1382.7	10037.2	1382.8				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9848.7	.05	9981.6	.04	10011	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.6	10011	479.81	499.49	501.46	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9881.92	9898.54	60.83	19.31	13.91	1.91	1.42	3.15
9898.54	9915.15	212.71	43.98	16.64	6.67	2.65	4.84
9915.15	9931.76	273.26	51.08	16.62	8.57	3.07	5.35
9931.76	9948.38	341.72	58.42	16.62	10.71	3.52	5.85
9948.38	9964.99	419.81	66.10	16.62	13.16	3.98	6.35
9964.99	9981.60	504.21	73.77	16.62	15.81	4.44	6.83
LB 9981.60	9987.48	266.44	29.26	5.91	8.35	4.98	9.11
9987.48	9993.36	322.90	32.84	5.91	10.12	5.58	9.83
9993.36	9999.24	384.39	36.47	5.92	12.05	6.20	10.54
9999.24	10005.12	333.15	35.01	6.62	10.44	5.96	9.51
10005.12	RB 10011.00	70.46	14.12	7.03	2.21	2.40	4.99
10011.00	10019.73	0.15	0.16	0.84	0.00	0.24	0.89

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9915.15	9931.76	18.56	7.21	5.87	0.58	4.16	2.57
9931.76	9948.38	443.36	73.38	16.62	13.90	4.42	6.04
9948.38	9964.99	523.34	81.06	16.62	16.41	4.88	6.46
9964.99	9981.60	608.54	88.74	16.62	19.08	5.34	6.86
LB 9981.60	9987.48	313.50	34.56	5.91	9.83	5.88	9.07
9987.48	9993.36	369.42	38.13	5.91	11.58	6.49	9.69
9993.36	9999.24	429.69	41.77	5.92	13.47	7.10	10.29
9999.24	10005.12	375.67	40.31	6.62	11.78	6.86	9.32
10005.12	RB 10011.00	106.83	19.42	7.03	3.35	3.30	5.50
10011.00	10019.73	1.08	0.79	1.74	0.03	1.14	1.38

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need ft additional cross sections.

CROSS SECTION RIVER: Unnamed 1
REACH: Reach 1 RS: 0.046

INPUT
Description: Confluence with Unnamed Wash 2 and downstream study limits.
Starting water surface elevations of 1367.6 and 1368.5 for the floodplain and floodway profiles, respectively. Starting water surface elevations are interpolated from water surface elevations of Unnamed Wash 2 at cross sections 0.252 and 0.308.

Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9827.2	1381.6	9832.1	1379.7	9834.3	1378.6	9834.6	1378.4	9852.6	1371.7
9879.6	1364.8	9887.4	1363	9890.6	1362.8	9949	1361.9	9976.8	1361.7
9984.1	1360.9	9997.3	1359.5	10015.9	1360.2	10016.9	1360.2	10020.3	1361
10030.1	1363.4	10038.2	1365.3	10051.2	1369.8	10058.2	1372.2	10065.9	1374.6

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9827.2	.05	9976.8	.04	10030.1	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.8	10030.1	0	0	0	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9864.60	9883.30	38.07	27.28	15.11	1.19	1.86	1.40
9883.30	9902.00	230.24	87.68	18.82	7.22	4.69	2.63
9902.00	9920.70	267.65	95.74	18.70	8.39	5.12	2.80
9920.70	9939.40	293.23	101.13	18.70	9.19	5.41	2.90
9939.40	9958.10	318.03	106.17	18.70	9.97	5.68	3.00
9958.10	9976.80	332.64	109.07	18.70	10.43	5.83	3.05
LB 9976.80	9987.46	290.31	69.10	10.72	9.10	6.48	4.20
9987.46	9998.12	380.03	81.20	10.72	11.91	7.62	4.68

9998.12	10008.78	402.33	83.87	10.67	12.61	7.87	4.80
10008.78	10019.44	363.22	79.08	10.73	11.39	7.42	4.59
10019.44	RB 10030.10	217.71	58.68	10.97	6.82	5.50	3.71
10030.10	10042.03	55.80	32.60	12.38	1.75	2.73	1.71
10042.03	10053.97	0.73	1.37	2.98	0.02	0.49	0.53

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9920.70	9939.40	106.77	47.33	13.74	3.35	6.40	2.26
9939.40	9958.10	427.13	123.00	18.70	13.39	6.58	3.47
9958.10	9976.80	444.05	125.90	18.70	13.92	6.73	3.53
LB 9976.80	9987.46	377.24	78.70	10.72	11.83	7.38	4.79
9987.46	9998.12	478.97	90.79	10.72	15.01	8.52	5.28
9998.12	10008.78	504.23	93.47	10.67	15.81	8.77	5.39
10008.78	10019.44	459.95	86.68	10.73	14.42	8.32	5.19
10019.44	RB 10030.10	293.19	68.28	10.97	9.19	6.41	4.29
10030.10	10042.03	94.77	43.34	12.38	2.97	3.63	2.19
10042.03	10053.97	3.71	3.89	3.87	0.12	1.39	0.95

SUMMARY OF MANNING'S N VALUES

River:Unnamed 1

Reach	River Sta.	n1	n2	n3
Reach 1	6.311	.05	.04	.06
Reach 1	6.216	.05	.04	.06
Reach 1	6.100	.05	.04	.06
Reach 1	6.015	.05	.04	.06
Reach 1	5.969	.06	.045	.07
Reach 1	5.917	.06	.045	.07
Reach 1	5.862	.05	.04	.06
Reach 1	5.746	.05	.04	.06
Reach 1	5.632	.05	.04	.06
Reach 1	5.505	.05	.04	.06
Reach 1	5.439	.06	.045	.07
Reach 1	5.380	.05	.04	.06
Reach 1	5.310	.05	.04	.06
Reach 1	5.227	.06	.045	.07
Reach 1	5.207	.06	.045	.07
Reach 1	5.176	.05	.04	.06
Reach 1	5.096	.05	.04	.06
Reach 1	5.007	.05	.04	.06
Reach 1	4.920	.05	.04	.06
Reach 1	4.879	.06	.045	.07
Reach 1	4.839	.05	.04	.06
Reach 1	4.725	.05	.04	.06
Reach 1	4.628	.05	.04	.06
Reach 1	4.613	.05	.04	.06
Reach 1	4.536	.06	.04	.06
Reach 1	4.436	.05	.04	.06
Reach 1	4.412	.05	.04	.06
Reach 1	4.361	.05	.04	.06
Reach 1	4.256	.05	.04	.06
Reach 1	4.170	.05	.04	.06
Reach 1	4.077	.05	.04	.06
Reach 1	3.987	.05	.04	.06
Reach 1	3.895	.05	.04	.06
Reach 1	3.803	.05	.04	.06
Reach 1	3.706	.05	.04	.06
Reach 1	3.671	.05	.04	.06
Reach 1	3.643	.05	.04	.06
Reach 1	3.631	Inline Weir		
Reach 1	3.617	.05	.04	.06
Reach 1	3.577	.05	.04	.06
Reach 1	3.515	.05	.04	.06
Reach 1	3.453	.05	.04	.06
Reach 1	3.366	.05	.04	.06
Reach 1	3.274	.05	.04	.06
Reach 1	3.186	.05	.04	.06
Reach 1	3.121	.06	.065	.07
Reach 1	3.073	.06	.065	.07
Reach 1	3.015	.055	.055	.055
Reach 1	2.923	.055	.055	.055
Reach 1	2.880	.06	.06	.06
Reach 1	2.848	.06	.06	.06
Reach 1	2.813	.06	.06	.06
Reach 1	2.770	.055	.055	.055
Reach 1	2.674	.06	.06	.06
Reach 1	2.611	.06	.06	.06
Reach 1	2.557	.055	.055	.055
Reach 1	2.467	.055	.055	.055
Reach 1	2.390	.07	.07	.07
Reach 1	2.347	.07	.07	.07
Reach 1	2.312	.05	.055	.06
Reach 1	2.230	.05	.055	.06
Reach 1	2.134	.055	.055	.055
Reach 1	2.047	.055	.055	.055
Reach 1	1.992	.06	.06	.06

Reach 1	1.928	.06	.06	.06
Reach 1	1.862	.06	.06	.06
Reach 1	1.768	.06	.06	.06
Reach 1	1.709	.06	.06	.06
Reach 1	1.675	.06	.06	.06
Reach 1	1.637	.06	.06	.06
Reach 1	1.621	.055	.055	.055
Reach 1	1.590	.055	.055	.055
Reach 1	1.479	.055	.055	.055
Reach 1	1.398	.055	.055	.055
Reach 1	1.374	.055	.055	.055
Reach 1	1.367	.055	.055	.055
Reach 1	1.286	.055	.055	.055
Reach 1	1.208	.055	.055	.055
Reach 1	1.116	.055	.055	.055
Reach 1	1.010	.055	.055	.055
Reach 1	0.914	.055	.055	.055
Reach 1	0.850	.055	.055	.055
Reach 1	0.819	.055	.055	.055
Reach 1	0.724	.055	.055	.055
Reach 1	0.644	.055	.055	.055
Reach 1	0.575	.06	.045	.06
Reach 1	0.547	.06	.045	.06
Reach 1	0.523	.06	.045	.06
Reach 1	0.484	.05	.04	.05
Reach 1	0.453	.05	.04	.05
Reach 1	0.414	.065	.05	.065
Reach 1	0.356	.05	.04	.05
Reach 1	0.323	.05	.04	.05
Reach 1	0.238	.05	.04	.05
Reach 1	0.190	.05	.04	.05
Reach 1	0.141	.05	.04	.05
Reach 1	0.046	.05	.04	.05

SUMMARY OF REACH LENGTHS

River: Unnamed 1

Reach	River Sta.	Left	Channel	Right
Reach 1	6.311	500.34	502.22	485.2
Reach 1	6.216	586.24	612.12	616.6
Reach 1	6.100	451.51	450.15	445.11
Reach 1	6.015	211.42	243.72	251.7
Reach 1	5.969	230	275.47	239.47
Reach 1	5.917	324.93	289.48	252.02
Reach 1	5.862	589.89	611.99	649.58
Reach 1	5.746	616.79	600.4	486.61
Reach 1	5.632	631.09	672.93	668.96
Reach 1	5.505	358.44	349.58	297.83
Reach 1	5.439	304.7	308.38	186.86
Reach 1	5.380	320.42	372.83	351.4
Reach 1	5.310	421.6	435.07	440
Reach 1	5.227	133.79	104.47	92.26
Reach 1	5.207	178.73	164.6	122.28
Reach 1	5.176	370.18	425.37	451.12
Reach 1	5.096	471.85	467.51	464.25
Reach 1	5.007	443.93	461.58	472.84
Reach 1	4.920	217.01	217.23	200.01
Reach 1	4.879	233.03	210.17	100.03
Reach 1	4.839	556.24	603.05	622.93
Reach 1	4.725	468.06	507.76	505.61
Reach 1	4.628	98.84	82.09	73.9
Reach 1	4.613	430.45	408.6	345.74
Reach 1	4.536	488.47	524.83	547.46
Reach 1	4.436	113.89	127.12	100.61
Reach 1	4.412	270.09	270.35	257.05
Reach 1	4.361	556.72	552.25	500.69
Reach 1	4.256	394.19	454.34	451.53
Reach 1	4.170	452.9	494.4	500.88
Reach 1	4.077	464.33	473.79	447.83
Reach 1	3.987	482.25	485.32	487.05
Reach 1	3.895	486.27	485.61	441.58
Reach 1	3.803	464.92	512	525.26
Reach 1	3.706	228.4	183.34	184.01
Reach 1	3.671	117.28	149.51	153.42
Reach 1	3.643	137.8	139.23	137.67
Reach 1	3.631	Inline Weir		
Reach 1	3.617	221.82	208.6	196.65
Reach 1	3.577	333.89	325.38	296.36
Reach 1	3.515	331.88	331.98	327.06
Reach 1	3.453	447.87	454.49	458.74
Reach 1	3.366	485.35	486.11	488.32
Reach 1	3.274	465.24	469.43	471.12
Reach 1	3.186	328.94	340.33	345.52
Reach 1	3.121	271.57	253.82	205.72
Reach 1	3.073	332.16	306.29	158.74
Reach 1	3.015	460.62	483.24	501.59
Reach 1	2.923	240.71	229.35	196.32
Reach 1	2.880	159.24	167.27	171.89
Reach 1	2.848	153.85	188.43	225.87
Reach 1	2.813	216.74	225.46	210.16

Reach 1	2.770	499.23	506.19	499.62
Reach 1	2.674	269.32	330.79	339.22
Reach 1	2.611	297.19	285.83	257.33
Reach 1	2.557	476.26	475.97	475.25
Reach 1	2.467	403.61	406.44	407.61
Reach 1	2.390	254.76	229.15	116.94
Reach 1	2.347	200.15	183.17	104.86
Reach 1	2.312	362.26	433.25	447.01
Reach 1	2.230	496.31	509.18	505.48
Reach 1	2.134	434.95	458.98	449.99
Reach 1	2.047	298.81	290.36	298.2
Reach 1	1.992	340.59	337.51	319.26
Reach 1	1.928	365.87	345.26	306.03
Reach 1	1.862	508.64	499.19	473.46
Reach 1	1.768	247.98	310.53	346.2
Reach 1	1.709	172.32	179.1	189.35
Reach 1	1.675	200.81	203	198.24
Reach 1	1.637	80.11	82.9	84.66
Reach 1	1.621	158.28	161.94	163.12
Reach 1	1.590	595.02	588.5	561.54
Reach 1	1.479	421.65	428.79	433.45
Reach 1	1.398	125.78	126.94	130.26
Reach 1	1.374	31.52	34.55	28.31
Reach 1	1.367	433.56	429.03	431.88
Reach 1	1.286	428.18	413.04	409.95
Reach 1	1.208	467.62	482.74	493.73
Reach 1	1.116	561.45	558.41	558.75
Reach 1	1.010	501.4	506.24	504.42
Reach 1	0.914	339.38	340.55	341.31
Reach 1	0.850	166.45	164.21	162.99
Reach 1	0.819	495.87	500.37	513.68
Reach 1	0.724	427.8	420.98	411.78
Reach 1	0.644	370.82	365.58	340.31
Reach 1	0.575	170.42	149.84	113.13
Reach 1	0.547	149.9	126.72	79.38
Reach 1	0.523	144.91	202.29	225.91
Reach 1	0.484	145.65	166.98	170.79
Reach 1	0.453	163.64	204.56	222.74
Reach 1	0.414	349.95	306.24	216.97
Reach 1	0.356	152.24	172.3	184.63
Reach 1	0.323	421.52	450.58	437.29
Reach 1	0.238	262.63	256.1	202.91
Reach 1	0.190	123.69	258.62	318.63
Reach 1	0.141	479.81	499.49	501.46
Reach 1	0.046	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Unnamed 1

Reach	River Sta.	Contr.	Expan.
Reach 1	6.311	.1	.3
Reach 1	6.216	.1	.3
Reach 1	6.100	.1	.3
Reach 1	6.015	.1	.3
Reach 1	5.969	.1	.3
Reach 1	5.917	.1	.3
Reach 1	5.862	.1	.3
Reach 1	5.746	.1	.3
Reach 1	5.632	.1	.3
Reach 1	5.505	.3	.5
Reach 1	5.439	.3	.5
Reach 1	5.380	.3	.5
Reach 1	5.310	.1	.3
Reach 1	5.227	.1	.3
Reach 1	5.207	.1	.3
Reach 1	5.176	.1	.3
Reach 1	5.096	.1	.3
Reach 1	5.007	.1	.3
Reach 1	4.920	.1	.3
Reach 1	4.879	.1	.3
Reach 1	4.839	.1	.3
Reach 1	4.725	.1	.3
Reach 1	4.628	.1	.3
Reach 1	4.613	.1	.3
Reach 1	4.536	.1	.3
Reach 1	4.436	.1	.3
Reach 1	4.412	.1	.3
Reach 1	4.361	.1	.3
Reach 1	4.256	.1	.3
Reach 1	4.170	.1	.3
Reach 1	4.077	.1	.3
Reach 1	3.987	.1	.3
Reach 1	3.895	.1	.3
Reach 1	3.803	.1	.3
Reach 1	3.706	.1	.3
Reach 1	3.671	.1	.3
Reach 1	3.643	.1	.3
Reach 1	3.631	Inline Weir	
Reach 1	3.617	.1	.3
Reach 1	3.577	.1	.3

Reach 1	3.515	.1	.3
Reach 1	3.453	.1	.3
Reach 1	3.366	.1	.3
Reach 1	3.274	.1	.3
Reach 1	3.186	.1	.3
Reach 1	3.121	.1	.3
Reach 1	3.073	.1	.3
Reach 1	3.015	.1	.3
Reach 1	2.923	.1	.3
Reach 1	2.880	.1	.3
Reach 1	2.846	.1	.3
Reach 1	2.813	.1	.3
Reach 1	2.770	.1	.3
Reach 1	2.674	.1	.3
Reach 1	2.611	.1	.3
Reach 1	2.557	.1	.3
Reach 1	2.467	.1	.3
Reach 1	2.390	.1	.3
Reach 1	2.347	.1	.3
Reach 1	2.312	.1	.3
Reach 1	2.230	.1	.3
Reach 1	2.134	.1	.3
Reach 1	2.047	.1	.3
Reach 1	1.992	.1	.3
Reach 1	1.928	.1	.3
Reach 1	1.862	.1	.3
Reach 1	1.768	.1	.3
Reach 1	1.709	.1	.3
Reach 1	1.675	.1	.3
Reach 1	1.637	.1	.3
Reach 1	1.621	.1	.3
Reach 1	1.590	.1	.3
Reach 1	1.479	.1	.3
Reach 1	1.398	.1	.3
Reach 1	1.374	.1	.3
Reach 1	1.367	.1	.3
Reach 1	1.286	.1	.3
Reach 1	1.208	.1	.3
Reach 1	1.116	.1	.3
Reach 1	1.010	.1	.3
Reach 1	0.914	.1	.3
Reach 1	0.850	.1	.3
Reach 1	0.819	.1	.3
Reach 1	0.724	.1	.3
Reach 1	0.644	.1	.3
Reach 1	0.575	.1	.3
Reach 1	0.547	.1	.3
Reach 1	0.523	.1	.3
Reach 1	0.484	.1	.3
Reach 1	0.453	.1	.3
Reach 1	0.414	.1	.3
Reach 1	0.356	.3	.5
Reach 1	0.323	.3	.5
Reach 1	0.238	.1	.3
Reach 1	0.190	.1	.3
Reach 1	0.141	.1	.3
Reach 1	0.046	.1	.3

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

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

PROJECT DATA
Project Title: Unnamed Wash 2
Project File : Un2_FpFw.prj
Run Date and Time: 5/23/01 11:57:37 AM

Project in English units

Project Description:
North Peoria Area Drainage Master Plan, FCD 99-45
Unnamed Wash 2 Floodplain
Delineation Study
Study Contractors: Stantec Consulting, Inc.
P82000146

Geometry Based on Aerial photography, Flight Date 2-18-00
Flow by
Cooper Aerial

Peak discharges are from 100-year, 24-hour HEC-1 model
dated
???, prepared by Stantec

PLAN DATA

Plan Title: 100-yr Existing Conditions Fp/Fw
Plan File : p:\82000146\Calcs\HEC-RAS\FEMA\Unnamed_Wash2\Un2_FpFw.p01

Geometry Title: Existing Conditions
Geometry File : p:\82000146\Calcs\HEC-RAS\FEMA\Unnamed_Wash2\Un2_FpFw.g01

Flow Title : 100-yr Existing Conditions
Flow File : p:\82000146\Calcs\HEC-RAS\FEMA\Unnamed_Wash2\Un2_FpFw.f01

Plan Summary Information:
Number of: Cross Sections = 120 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 0

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

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

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

River = Unnamed Wash 2 Reach = Reach 1

RS	Profile	Method	Value1	Value2
6.789	Method 1	1	9974.65	10037.74
6.765	Method 1	1	9971.12	10015.73
6.714	Method 1	1	9984.34	10014.73
6.669	Method 1	1	9987.45	10042.8
6.643	Method 1	1	9922.91	10028.92
6.595	Method 1	1	9984.42	10023.64
6.570	Method 1	1	9971.05	10014.61
6.501	Method 1	1	9982.86	10024.6
6.451	Method 1	1	9966.34	10018.81
6.418	Method 1	1	9960.11	10029.88
6.392	Method 1	1	9953.42	10026.1
6.318	Method 1	1	9911.29	10014.33
6.271	Method 1	1	9959.65	10020.56
6.218	Method 1	1	9969.9	10031

6.161	Method 1	1	9792.4810012.66
6.058	Method 1	1	9896.2310022.07
5.974	Method 1	1	9956.36 10032.6
5.927	Method 1	1	9984.14 10041.9
5.865	Method 1	1	9948.82 10036.7
5.845	Method 1	1	9990.03 10055
5.759	Method 1	1	9972.41 10033
5.702	Method 1	1	9964.710033.04
5.624	Method 1	1	9939.7810018.45
5.551	Method 1	1	9892.2210027.69
5.508	Method 1	1	9967.1310080.53
5.460	Method 1	1	9945.63 10028.4
5.364	Method 1	1	9960.910053.22
5.304	Method 1	1	9965.2810043.08
5.266	Method 1	1	9964.910016.43
5.172	Method 1	1	9967.93 10036.6
5.114	Method 1	1	9974.1710035.98
5.079	Method 1	1	9976.4610026.29
4.974	Method 1	1	9970.62 10072.8
4.939	Method 1	1	9951.7410020.13
4.884	Method 1	1	9949.610016.05
4.784	Method 1	1	9984.5 10044.5
4.692	Method 1	1	9970.410044.05
4.640	Method 1	1	9880.7210032.01
4.600	Method 1	1	9983.7510093.11
4.502	Method 1	1	9979.1 10039
4.430	Method 1	1	9923.41 10020.2
4.391	Method 1	1	9973.4 10039
4.365	Method 1	1	9974.03 10053.7
4.332	Method 1	1	9948.3510041.57
4.286	Method 1	1	9965.210031.88
4.199	Method 1	1	9981.27 10047.4
4.102	Method 1	1	9973.64 10117.9
4.072	Method 1	1	9938.8 10075
4.013	Method 1	1	9887.9910017.68
3.961	Method 1	1	9928.110026.08
3.923	Method 1	1	9968.910070.47
3.874	Method 1	1	9968.86 10099.3
3.825	Method 1	1	9946.0210017.97
3.770	Method 1	1	9977.8410027.85
3.725	Method 1	1	9922.110023.78
3.698	Method 1	1	9865.6310011.41
3.660	Method 1	1	9947.910017.21
3.643	Method 1	1	9950.610019.94
3.618	Method 1	1	9965.9510050.92
3.590	Method 1	1	9961.2210065.75
3.523	Method 1	1	9949.5610031.83
3.426	Method 1	1	9936.9710043.77
3.311	Method 1	1	9967.6710022.48
3.211	Method 1	1	9945.09 10026.6
3.122	Method 1	1	9932.2710026.51
3.053	Method 1	1	9964.1510061.02
3.033	Method 1	1	9975.96 10016.3
3.007	Method 1	1	9947.2210026.31
2.976	Method 1	1	9984.1510018.79
2.934	Method 1	1	9973.0110026.83
2.903	Method 1	1	9973.2910030.79
2.892	Method 1	1	9967.6 10027.3
2.856	Method 1	1	9958.9710010.37
2.813	Method 1	1	9968.4510034.92
2.718	Method 1	1	9963.4510034.81
2.683	Method 1	1	9957.1510070.05
2.656	Method 1	1	9967.1910084.84
2.625	Method 1	1	9950.0410080.08
2.603	Method 1	1	9983.1710070.96
2.521	Method 1	1	9885.4110024.06
2.424	Method 1	1	9966.8810064.84
2.401	Method 1	1	9967.5210059.72
2.319	Method 1	1	9947.6710025.87
2.225	Method 1	1	9936.2910027.28
2.131	Method 1	1	9977.710054.87
2.034	Method 1	1	9970.1 10044.7
1.940	Method 1	1	9954.4610040.47
1.846	Method 1	1	9961.0710047.29
1.818	Method 1	1	9963.510043.61
1.781	Method 1	1	9983.03 10054.5
1.742	Method 1	1	992010035.63
1.677	Method 1	1	9942.03 10063.8
1.629	Method 1	1	9979.25 10066
1.535	Method 1	1	9926.77 10018.3
1.481	Method 1	1	9989.3510054.96
1.438	Method 1	1	9968.66 10060.6
1.419	Method 1	1	9958.0710031.74
1.363	Method 1	1	9955.3410016.28
1.261	Method 1	1	9965.210054.03
1.168	Method 1	1	9915.63 10034.7
1.092	Method 1	1	9938.2110085.75
1.052	Method 1	1	9925.8410009.32
0.995	Method 1	1	9962.0110031.85
0.957	Method 1	1	9981.2810034.23
0.916	Method 1	1	9979.4910040.82
0.864	Method 1	1	9969.12 10036.2
0.769	Method 1	1	9980.210037.32
0.745	Method 1	1	9946.19 10027.5
0.734	Method 1	1	9982.6710018.71

0.703	Method 1	1	9976.7	10033.7
0.650	Method 1	1	9981.53	10018.74
0.625	Method 1	1	9984.71	10026.35
0.610	Method 1	1	9984.61	10019.84
0.589	Method 1	1	9951.69	10022.24
0.537	Method 1	1	9974.31	10051.09
0.441	Method 1	1	9966.79	10049.22
0.348	Method 1	1	9954.41	10045.13
0.309	Method 1	1	9960.31	10047.78
0.252	Method 1	1	9884.4	10069.8
0.205	Method 1	1	9835.2	10117.8

River = Unnamed Wash 2 Reach = Reach 1

RS	Profile	Method	Value1	Value2
6.789	PF 3	1	9974.65	10037.74
6.765	PF 3	1	9971.12	10015.73
6.714	PF 3	1	9984.34	10014.73
6.669	PF 3	1	9987.45	10042.8
6.643	PF 3	1	9922.91	10028.92
6.595	PF 3	1	9984.42	10023.64
6.570	PF 3	1	9971.05	10014.61
6.501	PF 3	1	9982.86	10024.6
6.451	PF 3	1	9966.34	10018.81
6.418	PF 3	1	9960.11	10029.88
6.392	PF 3	1	9953.42	10026.1
6.318	PF 3	1	9911.29	10014.33
6.271	PF 3	1	9959.65	10020.56
6.218	PF 3	1	9969.9	10031
6.161	PF 3	1	9792.48	10012.66
6.058	PF 3	1	9896.23	10022.07
5.974	PF 3	1	9956.36	10032.6
5.927	PF 3	1	9984.14	10041.9
5.865	PF 3	1	9948.82	10036.7
5.845	PF 3	1	9990.03	10055
5.759	PF 3	1	9972.41	10033
5.702	PF 3	1	9964.71	10033.04
5.624	PF 3	1	9939.78	10018.45
5.551	PF 3	1	9892.22	10027.69
5.508	PF 3	1	9967.13	10080.53
5.460	PF 3	1	9945.63	10028.4
5.364	PF 3	1	9960.91	10053.22
5.304	PF 3	1	9965.28	10043.08
5.266	PF 3	1	9964.91	10016.43
5.172	PF 3	1	9967.93	10036.6
5.114	PF 3	1	9974.17	10035.98
5.079	PF 3	1	9976.46	10026.29
4.974	PF 3	1	9970.62	10072.8
4.939	PF 3	1	9951.74	10020.13
4.884	PF 3	1	9949.61	10016.05
4.784	PF 3	1	9984.5	10044.5
4.692	PF 3	1	9970.41	10044.05
4.640	PF 3	1	9880.72	10032.01
4.600	PF 3	1	9983.75	10093.11
4.502	PF 3	1	9979.1	10039
4.430	PF 3	1	9923.41	10020.2
4.391	PF 3	1	9973.4	10039
4.365	PF 3	1	9974.03	10053.7
4.332	PF 3	1	9948.35	10041.57
4.286	PF 3	1	9965.21	10031.88
4.199	PF 3	1	9981.27	10047.4
4.102	PF 3	1	9973.64	10117.9
4.072	PF 3	1	9938.8	10075
4.013	PF 3	1	9887.99	10017.68
3.961	PF 3	1	9928.11	10026.08
3.923	PF 3	1	9968.91	10070.47
3.874	PF 3	1	9968.86	10099.3
3.825	PF 3	1	9946.02	10017.97
3.770	PF 3	1	9977.84	10027.85
3.725	PF 3	1	9922.11	10023.78
3.698	PF 3	1	9865.63	10011.41
3.660	PF 3	1	9947.91	10017.21
3.643	PF 3	1	9950.61	10019.94
3.618	PF 3	1	9965.95	10050.92
3.590	PF 3	1	9961.22	10065.75
3.523	PF 3	1	9949.56	10031.83
3.426	PF 3	1	9936.97	10043.77
3.311	PF 3	1	9967.67	10022.48
3.211	PF 3	1	9945.09	10026.6
3.122	PF 3	1	9932.27	10026.51
3.053	PF 3	1	9964.15	10061.02
3.033	PF 3	1	9975.96	10016.3
3.007	PF 3	1	9947.22	10026.31
2.976	PF 3	1	9984.15	10018.79
2.934	PF 3	1	9973.01	10026.83
2.903	PF 3	1	9973.29	10030.79
2.892	PF 3	1	9967.6	10027.3
2.856	PF 3	1	9958.97	10010.37
2.813	PF 3	1	9968.45	10034.92
2.718	PF 3	1	9963.45	10034.81
2.683	PF 3	1	9957.15	10070.05
2.656	PF 3	1	9967.19	10084.84
2.625	PF 3	1	9950.04	10080.08
2.603	PF 3	1	9983.17	10070.96
2.521	PF 3	1	9885.41	10024.06
2.424	PF 3	1	9966.88	10064.84

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2.401   PF 3                    1 9967.5210059.72
2.319   PF 3                    1 9947.6710025.87
2.225   PF 3                    1 9936.2910027.28
2.131   PF 3                    1  9977.710054.87
2.034   PF 3                    1  9970.1 10044.7
1.940   PF 3                    1 9954.4610040.47
1.846   PF 3                    1 9961.0710047.29
1.818   PF 3                    1  9963.510043.61
1.781   PF 3                    1 9983.03 10054.5
1.742   PF 3                    1    992010035.63
1.677   PF 3                    1 9942.03 10063.8
1.629   PF 3                    1 9979.25   10066
1.535   PF 3                    1 9926.77 10018.3
1.481   PF 3                    1 9989.3510054.96
1.438   PF 3                    1 9968.66 10060.6
1.419   PF 3                    1 9958.0710031.74
1.363   PF 3                    1 9955.3410016.28
1.261   PF 3                    1  9965.210054.03
1.168   PF 3                    1 9915.63 10034.7
1.092   PF 3                    1 9938.2110085.75
1.052   PF 3                    1 9925.8410009.32
0.995   PF 3                    1 9962.0110031.85
0.957   PF 3                    1 9981.2810034.23
0.916   PF 3                    1 9979.4910040.82
0.864   PF 3                    1 9969.12 10036.2
0.769   PF 3                    1  9980.210037.32
0.745   PF 3                    1 9946.19 10027.5
0.734   PF 3                    1 9982.6710018.71
0.703   PF 3                    1  9976.7 10033.7
0.650   PF 3                    1 9981.5310018.74
0.625   PF 3                    1  9984.710026.35
0.610   PF 3                    1  9984.610019.84
0.589   PF 3                    1 9951.6910022.24
0.537   PF 3                    1  9974.310051.09
0.441   PF 3                    1 9966.7910049.22
0.348   PF 3                    1  9954.410045.13
0.309   PF 3                    1  9960.310047.78
0.252   PF 3                    1  9884.4 10069.8
0.205   PF 3                    1  9835.2 10117.8
```

FLOW DATA

Flow Title: 100-yr Existing Conditions
Flow File : p:\82000146\Calcs\HEC-RAS\FEMA\Unnamed_Wash2\Un2_FpFw.f01

Flow Data (cfs)

River	Reach	RS	Floodplain	Method 1
Unnamed Wash 2	Reach 1	6.789	1750	1750
Unnamed Wash 2	Reach 1	6.161	2910	2910
Unnamed Wash 2	Reach 1	5.927	3380	3380
Unnamed Wash 2	Reach 1	4.939	4420	4420
Unnamed Wash 2	Reach 1	2.625	4570	4570
Unnamed Wash 2	Reach 1	1.629	4680	4680
Unnamed Wash 2	Reach 1	0.252	7300	7300

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Unnamed Wash 2	Reach 1	Floodplain		Normal S = .01056
Unnamed Wash 2	Reach 1	Method 1		Normal S = .01056

GEOMETRY DATA

Geometry Title: Existing Conditions
Geometry File : p:\82000146\Calcs\HEC-RAS\FEMA\Unnamed_Wash2\Un2_FpFw.g01

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 6.789

INPUT
Description: Upstream study limits at State Route 74.
100-year, 24-hour Peak
Discharge of 1750 cfs from HEC-1 model at station C203R.
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9960.8	1850.2	9967.3	1847.7	9968.6	1847.3	9971.1	1846.7	9971.4	1846.6
9972	1846.4	9974.9	1845.1	9978.9	1844.8	9983.9	1842.2	9993	1840
9995	1839.9	9996.9	1839.9	9997.7	1839.9	10000.1	1840	10000.9	1840.1
10004.4	1841.4	10006.3	1840.3	10007.7	1840.1	10008	1840.1	10012.2	1839.7
10012.6	1839.8	10013.1	1840.5	10013.7	1840.8	10017.1	1840	10026.9	1840.9
10034.1	1841.7	10037.1	1844.6	10047.7	1854.7	10051.6	1858.1	10053.2	1859.6
10053.6	1859.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9960.8	.055	9983.9	.04	10004.4	.055

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9983.9 10004.4 107.48 131.27 142.7 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.50	9976.20	0.13	0.22	1.58	0.01	0.14	0.60
9976.20	9983.90	22.45	9.39	8.34	1.28	1.22	2.39
LB 9983.90	9988.00	105.99	14.38	4.22	6.06	3.51	7.37
9988.00	9992.10	160.53	18.45	4.22	9.17	4.50	8.70
9992.10	9996.20	210.06	21.49	4.13	12.00	5.24	9.78
9996.20	10000.30	213.33	21.64	4.10	12.19	5.28	9.86
10000.30	RB 10004.40	161.25	18.70	4.34	9.21	4.56	8.62
10004.40	10014.24	310.30	49.01	10.63	17.73	4.98	6.33
10014.24	10024.08	314.06	48.08	9.95	17.95	4.89	6.53
10024.08	10033.92	232.43	40.05	9.89	13.28	4.07	5.80
10033.92	10043.76	19.46	7.01	5.24	1.11	1.84	2.78

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.50	9976.20	0.13	0.22	1.58	0.01	0.14	0.60
9976.20	9983.90	22.48	9.40	8.34	1.28	1.22	2.39
LB 9983.90	9988.00	106.01	14.38	4.22	6.06	3.51	7.37
9988.00	9992.10	160.53	18.45	4.22	9.17	4.50	8.70
9992.10	9996.20	210.04	21.49	4.13	12.00	5.24	9.77
9996.20	10000.30	213.31	21.64	4.10	12.19	5.28	9.86
10000.30	RB 10004.40	161.25	18.71	4.34	9.21	4.56	8.62
10004.40	10014.24	310.28	49.03	10.63	17.73	4.98	6.33
10014.24	10024.08	314.04	48.09	9.95	17.95	4.89	6.53
10024.08	10033.92	232.44	40.06	9.89	13.28	4.07	5.80
10033.92	10043.76	19.47	7.02	5.24	1.11	1.84	2.77

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 6.765

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9941.3	1859.4	9945.8	1858	9948.7	1856.5	9959.4	1854	9959.6	1853.9
9959.7	1853.8	9960.5	1853.3	9971.5	1843.3	9973	1842.3	9975.4	1841.9
9976	1841.8	9988.2	1838	10009.2	1837.8	10009.5	1837.8	10009.7	1837.9
10014.2	1842.2	10033.3	1860.2	10037.5	1866.6	10046.2	1869.7		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9941.3	.055	9975.4	.04	10014.2	.055

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9975.4 10014.2 261.34 266.27 266.46 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9964.03	9975.40	12.95	5.04	4.75	0.74	1.18	2.57
LB 9975.40	9983.16	142.91	22.26	8.11	8.17	2.87	6.42
9983.16	9990.92	380.94	39.87	8.00	21.77	5.14	9.55
9990.92	9998.68	462.99	44.29	7.76	26.46	5.71	10.45
9998.68	10006.44	472.97	44.86	7.76	27.03	5.78	10.54
10006.44	RB 10014.20	275.47	35.18	9.51	15.74	4.53	7.83
10014.20	10024.87	1.78	1.11	2.11	0.10	0.72	1.61

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9964.03	9975.40	12.42	4.83	4.68	0.71	1.14	2.57
LB 9975.40	9983.16	141.26	21.89	8.11	8.07	2.82	6.45
9983.16	9990.92	381.26	39.50	8.00	21.79	5.09	9.65
9990.92	9998.68	464.10	43.92	7.76	26.52	5.66	10.57
9998.68	10006.44	474.19	44.48	7.76	27.10	5.73	10.66
10006.44	RB 10014.20	275.12	34.80	9.51	15.72	4.49	7.90
10014.20	10024.87	1.65	1.03	2.04	0.09	0.70	1.60

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for

additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 6.714

INPUT
Description:
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9961	1850	9982	1840.4	9990.2	1836.7	9990.7	1836.5	9990.8	1836.4
9991.4	1835.9	9995	1832	9996.2	1832	10005.4	1832	10014.3	1839
10035	1855.4	10042.3	1861.1	10046.8	1860.9				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9961	.055	9990.8	.04	10014.3	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9990.8	10014.3	246.02	238.27	228.03	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9980.87	9990.80	37.89	9.40	7.11	2.17	1.46	4.03
LB 9990.80	9995.50	251.55	25.00	6.59	14.37	5.32	10.06
9995.50	10000.20	539.24	34.51	4.70	30.81	7.34	15.62
10000.20	10004.90	539.13	34.51	4.70	30.81	7.34	15.62
10004.90	10009.60	320.91	27.58	5.84	18.34	5.87	11.64
10009.60	RB 10014.30	61.22	10.30	5.98	3.50	2.19	5.94
10014.30	10025.13	0.07	0.07	0.55	0.00	0.17	0.88

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9980.87	9990.80	40.05	9.91	7.19	2.29	1.53	4.04
LB 9990.80	9995.50	252.08	25.37	6.59	14.40	5.40	9.94
9995.50	10000.20	536.77	34.88	4.70	30.67	7.42	15.39
10000.20	10004.90	536.66	34.88	4.70	30.67	7.42	15.39
10004.90	10009.60	320.85	27.95	5.84	18.33	5.95	11.48
10009.60	RB 10014.30	63.48	10.67	5.98	3.63	2.27	5.95
10014.30	10025.13	0.11	0.11	0.63	0.01	0.25	1.01

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 6.669

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9966.2	1847.5	9970.1	1846.3	9983.3	1837.3	9987.7	1833	9993	1827.7
9994.9	1827.7	9995.6	1827.8	10000.8	1828.2	10003.6	1828.4	10011.5	1829.7
10012.9	1829.9	10023.8	1830.3	10036.8	1830.8	10039.2	1831.2	10060.7	1843.4
10069.7	1848.6	10078.8	1852.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9966.2	.055	9987.7	.04	10012.9	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.7	10012.9	121.77	134.95	132.41	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9980.53	9987.70	0.02	0.03	0.34	0.00	0.12	0.66

LB 9987.70	9992.74	94.73	13.92	7.13	5.41	2.76	6.81
9992.74	9997.78	364.64	27.46	5.16	20.84	5.45	13.28
9997.78	10002.82	329.28	25.61	5.05	18.82	5.08	12.86
10002.82	10007.86	272.16	22.93	5.10	15.55	4.55	11.87
10007.86	RB 10012.90	195.36	18.80	5.10	11.16	3.73	10.39
10012.90	10026.08	279.29	40.84	13.19	15.96	3.10	6.84
10026.08	10039.26	204.09	33.87	13.23	11.66	2.57	6.02
10039.26	10052.44	10.44	3.55	4.07	0.60	1.00	2.94

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9980.53	9987.70	0.03	0.04	0.38	0.00	0.15	0.71
LB 9987.70	9992.74	95.20	14.06	7.13	5.44	2.79	6.77
9992.74	9997.78	363.27	27.61	5.16	20.76	5.48	13.16
9997.78	10002.82	328.26	25.76	5.05	18.76	5.11	12.74
10002.82	10007.86	271.63	23.08	5.10	15.52	4.58	11.77
10007.86	RB 10012.90	195.44	18.95	5.10	11.17	3.76	10.32
10012.90	10026.08	280.09	41.23	13.19	16.00	3.13	6.79
10026.08	10039.26	205.34	34.27	13.23	11.73	2.60	5.99
10039.26	10052.44	10.76	3.65	4.10	0.61	1.03	2.94

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 6.643

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9886	1840.3	9904.9	1831.2	9919.5	1830.8	9921.3	1830.7	9922.7	1830.5
9931.1	1829.4	9934.4	1829.5	9944.9	1829.4	9951	1829.3	9952.6	1829.3
9973.3	1828.5	9981.3	1828.2	9986.2	1827.4	9994	1826	10000.9	1825.7
10002.7	1825.6	10007.6	1825.3	10021.3	1828.5	10021.4	1828.5	10039.3	1833.2
10047.8	1839.1	10048.9	1839.7						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9886	.055	9981.3	.04	10021.3	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.3	10021.3	272.7	254.84	247.34	.6	.8

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9905.06	9924.12	0.05	0.10	1.23	0.00	0.08	0.48
9924.12	9943.18	39.22	16.60	19.12	2.24	0.87	2.36
9943.18	9962.24	71.01	23.68	19.07	4.06	1.24	3.00
9962.24	9981.30	145.74	36.46	19.07	8.33	1.91	4.00
LB 9981.30	9989.30	177.57	23.49	8.11	10.15	2.94	7.56
9989.30	9997.30	330.50	34.05	8.08	18.89	4.26	9.71
9997.30	10005.30	407.34	38.47	8.01	23.28	4.81	10.59
10005.30	10013.30	384.61	37.44	8.16	21.98	4.68	10.27
10013.30	RB 10021.30	173.27	23.27	8.22	9.90	2.91	7.45
10021.30	10030.50	20.70	7.62	7.87	1.18	1.00	2.72

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta	Right Sta	Flow	Area	W.P.	% Conv.	Hydr D.	Velocity

(ft)	(ft)	(cfs)	(sq ft)	(ft)		(ft)	(ft/s)
9905.06	9924.12	1.22	1.04	2.00	0.07	0.85	1.17
9924.12	9943.18	79.02	31.34	19.12	4.52	1.64	2.52
9943.18	9962.24	111.16	38.41	19.07	6.35	2.02	2.89
9962.24	9981.30	179.36	51.19	19.07	10.25	2.69	3.50
LB 9981.30	9989.30	178.63	29.68	8.11	10.21	3.71	6.02
9989.30	9997.30	297.47	40.23	8.08	17.00	5.03	7.39
9997.30	10005.30	355.90	44.65	8.01	20.34	5.58	7.97
10005.30	10013.30	338.18	43.62	8.16	19.32	5.45	7.75
10013.30	RB 10021.30	174.90	29.45	8.22	9.99	3.68	5.94
10021.30	10030.50	34.16	13.51	8.65	1.95	1.77	2.53

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 6.595

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9968	1840.2	9969.6	1839	9975.1	1833.7	9985.2	1826.3	9987.5	1824.6
9989.1	1823	9991.2	1821.4	9992.8	1821.5	10005.8	1821.6	10006.4	1821.6
10006.5	1821.6	10013.7	1823.6	10014.2	1823.7	10017.8	1824.5	10024.2	1824.8
10032.8	1825	10032.9	1825	10033	1825	10033.5	1825	10046.1	1824.7
10049	1824.6	10061.7	1825	10063.7	1825.1	10070.9	1827.5	10071.8	1827.7
10079.5	1833.5	10088.8	1840.2						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9968	.055	9985.2	.04	10017.8	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.2	10017.8	130.35	133.67	127.33	.6	.8

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9979.47	9985.20	0.23	0.22	0.97	0.01	0.29	1.01
LB 9985.20	9991.72	135.60	20.84	8.28	7.75	3.20	6.51
9991.72	9998.24	376.57	34.96	6.52	21.52	5.36	10.77
9998.24	10004.76	370.18	34.60	6.52	21.15	5.31	10.70
10004.76	10011.28	306.22	31.22	6.70	17.50	4.79	9.81
10011.28	RB 10017.80	149.73	20.33	6.71	8.56	3.12	7.37
10017.80	10032.00	128.08	29.69	14.21	7.32	2.09	4.31
10032.00	10046.20	119.85	28.53	14.20	6.85	2.01	4.20
10046.20	10060.40	131.02	30.10	14.21	7.49	2.12	4.35
10060.40	10074.60	32.53	10.83	8.91	1.86	1.26	3.00

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9979.47	9985.20	0.35	0.26	1.01	0.02	0.33	1.34
LB 9985.20	9991.72	172.14	21.13	8.28	9.84	3.24	8.15
9991.72	9998.24	473.62	35.25	6.52	27.06	5.41	13.44
9998.24	10004.76	465.64	34.89	6.52	26.61	5.35	13.35
10004.76	10011.28	385.77	31.51	6.70	22.04	4.83	12.24
10011.28	RB 10017.80	190.19	20.62	6.71	10.87	3.16	9.22
10017.80	10032.00	62.29	13.32	7.99	3.56	2.28	4.68

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 6.570

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9954.1	1836.3	9955.3	1835.6	9971.2	1823.9	9975	1821.1	9979.1	1820.8
9987.2	1820.7	9991.5	1820.6	9999.3	1819.2	10000	1819.1	10001.4	1819.1
10010.1	1818.8	10011.2	1818.8	10011.3	1818.9	10014.6	1824	10026.3	1842.3
10031.1	1846.7	10036.4	1851.7	10037.9	1852.7	10039.5	1853.1		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9954.1	.055	9971.2	.04	10014.6	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.2	10014.6	347.97	365.33	347.22	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9965.50	9971.20	0.00	0.01	0.19	0.00	0.06	0.45
LB 9971.20	9979.88	162.73	20.81	9.61	9.30	2.40	7.82
9979.88	9988.56	293.13	28.44	8.68	16.75	3.28	10.31
9988.56	9997.24	363.15	32.47	8.77	20.75	3.74	11.18
9997.24	10005.92	567.81	42.36	8.72	32.45	4.88	13.40
10005.92	RB 10014.60	363.17	36.19	11.50	20.75	4.17	10.04

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9965.50	9971.20	0.01	0.01	0.23	0.00	0.10	0.55
LB 9971.20	9979.88	164.37	21.15	9.61	9.39	2.44	7.77
9979.88	9988.56	293.96	28.78	8.68	16.80	3.32	10.21
9988.56	9997.24	363.28	32.82	8.77	20.76	3.78	11.07
9997.24	10005.92	565.72	42.71	8.72	32.33	4.92	13.25
10005.92	RB 10014.60	362.66	36.53	11.50	20.72	4.21	9.93

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 6.501

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9950.4	1848.2	9950.7	1848	9952.9	1846.6	9964.6	1837.9	9965.6	1837.3
9965.9	1837.1	9968.8	1833.8	9980.9	1822.1	9982.9	1817.7	9983.5	1816.4
9989.3	1813.9	9990.2	1813.4	10006.1	1813.5	10008.9	1813.6	10022	1815.8
10024.6	1816.2	10033.6	1816.1	10066.1	1815.9	10110.5	1837	10115	1839.2
10117.2	1839.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9950.4	.055	9982.9	.04	10024.6	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.9	10024.6	278.64	261.99	244.41	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9972.07	9982.90	0.00	0.00	0.09	0.00	0.04	0.21
LB 9982.90	9991.24	181.71	24.01	9.82	10.38	2.88	7.57
9991.24	9999.58	403.49	36.30	8.34	23.06	4.35	11.11
9999.58	10007.92	394.50	35.82	8.34	22.54	4.29	11.01
10007.92	10016.26	297.37	30.38	8.44	16.99	3.64	9.79
10016.26	RB 10024.60	133.67	18.81	8.45	7.64	2.26	7.11
10024.60	10043.12	137.54	31.05	18.52	7.86	1.68	4.43
10043.12	10061.64	155.01	33.36	18.52	8.86	1.80	4.65
10061.64	10080.16	46.71	12.09	8.85	2.67	1.43	3.86

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9972.07	9982.90	0.01	0.02	0.48	0.00	0.43	0.37
LB 9982.90	9991.24	238.04	27.22	9.82	13.60	3.26	8.75
9991.24	9999.58	493.90	39.51	8.34	28.22	4.74	12.50
9999.58	10007.92	483.77	39.03	8.34	27.64	4.68	12.40
10007.92	10016.26	373.65	33.59	8.44	21.35	4.03	11.12
10016.26	RB 10024.60	160.63	22.02	10.42	9.18	2.64	7.30

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 6.451

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9844.8	1826.2	9851.3	1826.6	9859.5	1825.6	9866.3	1824.8	9872.4	1822.5
9877.5	1818.6	9882.1	1816.6	9888.4	1813.1	9896.9	1811.7	9899.1	1811.4
9911.2	1812.8	9912.5	1813	9913.8	1813	9931.2	1812.8	9964.8	1812.3
9972.3	1812.1	9972.4	1812.1	9976.4	1811.4	9982.6	1810.1	9991.1	1810.3
9994.8	1810.3	9998.6	1810.2	10003.1	1810	10006.9	1810	10009.5	1810.1
10017.3	1813.3	10039.7	1822.4	10073.5	1835.7	10076.3	1835.7	10080.5	1835.5

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9844.8	.055	9972.3	.04	10017.3	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972.3	10017.3	205.76	176.32	167.91	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9870.30	9895.80	37.38	11.12	9.17	2.14	1.25	3.36
9895.80	9921.30	153.48	39.16	25.63	8.77	1.54	3.92
9921.30	9946.80	96.82	29.64	25.50	5.53	1.16	3.27
9946.80	9972.30	156.13	39.48	25.50	8.92	1.55	3.95
LB 9972.30	9981.30	178.38	23.67	9.17	10.19	2.63	7.54
9981.30	9990.30	320.65	33.45	9.03	18.32	3.72	9.59
9990.30	9999.30	311.03	32.80	9.00	17.77	3.64	9.48
9999.30	10008.30	344.25	34.86	9.00	19.67	3.87	9.87
10008.30	RB 10017.30	151.30	21.87	9.63	8.65	2.43	6.92
10017.30	10038.37	0.60	0.46	1.63	0.03	0.31	1.29

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9946.80	9972.30	53.94	12.17	7.93	3.08	2.04	4.43
LB 9972.30	9981.30	240.34	26.45	9.17	13.73	2.94	9.09
9981.30	9990.30	410.14	36.22	9.03	23.44	4.02	11.32
9990.30	9999.30	398.84	35.58	9.00	22.79	3.95	11.21
9999.30	10008.30	438.05	37.64	9.00	25.03	4.18	11.64
10008.30	RB 10017.30	206.80	24.65	9.63	11.82	2.74	8.39
10017.30	10038.37	1.89	0.93	1.94	0.11	0.62	2.04

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 6.418

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9896.5	1830.7	9905.7	1826.6	9916.7	1819.7	9929.7	1807.3	9930.9	1807.4
9940.4	1808.6	9953.6	1808.9	9958.6	1809	9960.1	1809	9960.2	1809
9964.1	1808.7	9974.5	1808.1	9983.6	1807.8	9989.5	1807.4	10001.4	1807.4

10008.1	1807.4	10009.3	1807.6	10024.5	1810.1	10024.6	1810.1	10026.5	1810.3
10034.6	1810.7	10041.2	1811.1	10042.3	1811.2	10044.2	1811.5	10053.4	1812.4
10069.2	1821.1	10079.7	1826.5	10082.6	1825.5				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9896.5	.055	9960.1	.04	10024.6	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960.1	10024.6	102.7	137.59	147.11	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9921.94	9934.66	116.82	19.64	9.58	6.68	2.37	5.95
9934.66	9947.38	146.94	25.28	12.77	8.40	1.99	5.81
9947.38	9960.10	99.46	19.97	12.72	5.68	1.57	4.98
LB 9960.10	9973.00	183.70	24.47	12.93	10.50	1.90	7.51
9973.00	9985.90	298.18	32.70	12.91	17.04	2.54	9.12
9985.90	9998.80	402.13	39.13	12.91	22.98	3.03	10.28
9998.80	10011.70	390.49	38.49	12.95	22.31	2.98	10.15
10011.70	RB 10024.60	111.46	18.21	13.07	6.37	1.41	6.12
10024.60	10043.93	0.82	0.79	5.30	0.05	0.15	1.04

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The energy loss was greater than 1.0 ft (0.3 m), between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9960.10	9973.00	231.27	30.85	14.89	13.22	2.39	7.50
9973.00	9985.90	377.27	39.08	12.91	21.56	3.03	9.65
9985.90	9998.80	486.28	45.51	12.91	27.79	3.53	10.69
9998.80	10011.70	474.02	44.87	12.95	27.09	3.48	10.56
10011.70	RB 10024.60	172.88	24.59	13.07	9.88	1.91	7.03
10024.60	10043.93	8.29	3.40	5.79	0.47	0.64	2.44

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The energy loss was greater than 1.0 ft (0.3 m), between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 6.392

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9857.1	1828.8	9858.4	1828.7	9866.4	1827.9	9869.7	1826.9	9878.6	1822.8
9884.9	1820.5	9892.1	1816.5	9900.7	1811.9	9903.4	1810.4	9906.4	1809.1
9916.2	1805.4	9937.6	1806.1	9941	1806	9941.6	1805.8	9946.6	1806.1
9956.6	1806.9	9962.3	1806.8	9977.1	1806.5	9985	1805.9	9990.4	1805.5
10000.2	1805.2	10005.3	1805.1	10013.2	1805	10014.9	1805	10022.7	1805.4
10023.4	1805.6	10024	1806.3	10024.4	1806.6	10048.3	1827.2	10052.8	1831.3
10053.3	1831.3	10054.2	1831.1	10064.6	1832.4	10067.5	1832.7		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9857.1	.055	9962.3	.04	10024.4	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9962.3	10024.4	371.19	386.27	389.38	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9899.18	9920.22	98.06	19.88	11.57	5.60	1.79	4.93
9920.22	9941.26	271.54	46.53	21.06	15.52	2.21	5.84
9941.26	9962.30	160.32	33.94	21.10	9.16	1.61	4.72
LB 9962.30	9974.72	99.66	17.30	12.42	5.69	1.39	5.76
9974.72	9987.14	162.63	23.23	12.45	9.29	1.87	7.00
9987.14	9999.56	288.91	32.78	12.43	16.51	2.64	8.81
9999.56	10011.98	350.78	36.81	12.42	20.04	2.96	9.53
10011.98	RB 10024.40	315.17	35.02	12.88	18.01	2.82	9.00
10024.40	10038.77	2.94	1.25	2.25	0.17	0.73	2.35

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9941.26	9962.30	68.43	15.54	10.82	3.91	1.75	4.40
LB 9962.30	9974.72	167.80	23.58	12.42	9.59	1.90	7.12
9974.72	9987.14	243.52	29.51	12.45	13.92	2.38	8.25
9987.14	9999.56	388.86	39.05	12.43	22.22	3.14	9.96
9999.56	10011.98	458.35	43.09	12.42	26.19	3.47	10.64
10011.98	RB 10024.40	416.93	41.30	12.88	23.82	3.33	10.10
10024.40	10038.77	6.10	2.11	2.75	0.35	1.24	2.90

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 6.318

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9810.7	1815.1	9813.6	1813.9	9817	1812.4	9822.5	1810.2	9830.8	1807.9
9847.1	1803.3	9863.5	1802.1	9868	1801.8	9869.3	1801.7	9870.6	1801.7
9890.4	1801.4	9894.4	1801	9900.6	1801.2	9905.9	1801.1	9914.2	1800.8
9931.8	1800.6	9937.2	1800.3	9948.6	1800.3	9955.9	1800.4	9959	1800.6
9968.3	1801.1	9969.2	1801.1	9970.4	1800.9	9970.9	1800.9	9980.4	1800
9984.5	1800	9990.4	1800.2	9999.4	1800	10000.1	1800	10001.5	1800.3
10005	1801.1	10006.6	1801.3	10011	1801.8	10012.9	1802.5	10015.3	1803.3
10033.2	1809.9	10039.8	1812.7	10042.7	1813.4	10047.8	1814.8	10051	1815
10057.9	1815.7	10060.7	1816						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9810.7	.055	9970.4	.04	10012.9	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970.4	10012.9	248.69	252.16	252.02	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9842.64	9874.58	43.42	18.36	23.12	2.48	0.80	2.37
9874.58	9906.52	202.80	52.68	31.97	11.59	1.65	3.85
9906.52	9938.46	347.59	72.77	31.95	19.86	2.28	4.78
9938.46	9970.40	388.92	77.87	31.98	22.22	2.44	4.99
LB 9970.40	9978.90	145.78	20.69	8.54	8.33	2.43	7.04
9978.90	9987.40	201.05	25.06	8.51	11.49	2.95	8.02
9987.40	9995.90	188.43	24.10	8.50	10.77	2.84	7.82
9995.90	10004.40	174.58	23.13	8.61	9.98	2.72	7.55
10004.40	RB 10012.90	57.06	11.87	8.68	3.26	1.40	4.81
10012.90	10028.83	0.37	0.34	1.51	0.02	0.24	1.09

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9906.52	9938.46	364.31	89.95	30.23	20.82	3.31	4.05
9938.46	9970.40	484.87	109.20	31.98	27.71	3.42	4.44
LB 9970.40	9978.90	174.38	29.03	8.54	9.96	3.42	6.01
9978.90	9987.40	220.76	33.40	8.51	12.61	3.93	6.61
9987.40	9995.90	210.35	32.44	8.50	12.02	3.82	6.48
9995.90	10004.40	198.39	31.47	8.61	11.34	3.70	6.30
10004.40	RB 10012.90	94.25	20.21	8.68	5.39	2.38	4.66
10012.90	10028.83	2.70	1.74	2.49	0.15	1.22	1.55

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2

REACH: Reach 1 *RS: 6.271*

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9891.4	1817.6	9893.1	1817.5	9893.5	1817.5	9895.4	1817.4	9901.3	1813.1
9914.1	1803.2	9918.5	1801.7	9930.9	1796.6	9934	1796.7	9944.9	1797
9955.5	1797.4	9957.5	1797.5	9977.8	1797.6	9981.4	1797.6	9986.2	1797.1
9990.1	1796.7	9990.6	1796.7	10005.3	1797.2	10011	1798.1	10013.6	1798.4
10019.8	1800.4	10054.3	1811.4	10073.3	1817.3	10076.9	1817.9		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9891.4	.055	9981.4	.04	10019.8	.055

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9981.4 10019.8 270.27 277.64 278.99 .3 .5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9909.40	9927.40	22.27	8.24	6.84	1.22	1.30	2.58
9927.40	9945.40	364.66	67.16	18.29	20.84	3.73	5.43
9945.40	9963.40	301.21	59.51	18.01	17.21	3.31	5.06
9963.40	9981.40	266.41	55.28	18.00	15.22	3.07	4.82
LB 9981.40	9989.08	185.07	26.43	7.72	10.58	3.44	7.00
9989.08	9996.76	223.87	29.58	7.69	12.79	3.85	7.57
9996.76	10004.44	200.36	27.67	7.69	11.45	3.60	7.24
10004.44	10012.12	144.25	22.81	7.76	8.24	2.97	6.33
10012.12	RB 10019.80	42.86	11.15	8.00	2.45	1.45	3.84
10019.80	10038.83	0.05	0.09	0.80	0.00	0.12	0.56

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9945.40	9963.40	59.21	12.48	7.09	3.38	3.33	4.74
9963.40	9981.40	423.22	58.97	18.00	24.18	3.28	7.18
LB 9981.40	9989.08	292.74	28.01	7.72	16.73	3.65	10.45
9989.08	9996.76	350.59	31.15	7.69	20.03	4.06	11.25
9996.76	10004.44	315.60	29.24	7.69	18.03	3.81	10.79
10004.44	10012.12	231.58	24.38	7.76	13.23	3.17	9.50
10012.12	RB 10019.80	76.72	12.72	8.00	4.38	1.66	6.03
10019.80	10038.83	0.33	0.25	1.00	0.02	0.33	1.32

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 6.218

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9939.1	1806.1	9946.2	1805	9957.5	1800.4	9973.5	1795.3	9981.4	1795
9982.9	1794.9	9985.6	1794.6	9993.6	1792.9	9996	1792.3	10001.9	1792.2
10008.5	1792.1	10010.2	1792.1	10010.6	1792.1	10016.1	1792.6	10021.6	1792.5
10023.1	1792.5	10023.4	1792.7	10028.7	1794.4	10030.7	1796.2	10031.9	1797.2
10046	1804.4	10056.4	1808.8	10057.8	1809.5				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9939.1	.055	9982.9	.04	10030.7	.055

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9982.9 10030.7 329.03 304.05 296.71 .6 .8

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.30	9982.90	51.27	14.58	13.19	2.93	1.12	3.52
LB 9982.90	9992.46	169.17	22.27	9.73	9.67	2.33	7.60
9992.46	10002.02	422.01	38.43	9.66	24.11	4.02	10.98
10002.02	10011.58	477.31	41.21	9.56	27.28	4.31	11.58
10011.58	10021.14	415.70	37.95	9.58	23.75	3.97	10.95
10021.14	RB 10030.70	214.52	26.55	10.58	12.26	2.78	8.08
10030.70	10039.73	0.03	0.04	0.39	0.00	0.12	0.69

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less

than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.30	9982.90	53.17	15.10	13.23	3.04	1.16	3.52
LB 9982.90	9992.46	170.67	22.65	9.73	9.75	2.37	7.54
9992.46	10002.02	420.76	38.81	9.66	24.04	4.06	10.84
10002.02	10011.58	475.37	41.59	9.56	27.16	4.35	11.43
10011.58	10021.14	414.55	38.34	9.58	23.69	4.01	10.81
10021.14	RB 10030.70	215.45	26.93	10.58	12.31	2.82	8.00
10030.70	10039.73	0.04	0.05	0.43	0.00	0.16	0.76

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 6.161

INPUT
Description: 100-year, 24-hour Peak Discharge of 2910 cfs from HEC-1 model at station C204.
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9749.1	1798.6	9766.4	1798.5	9769.5	1798	9772.1	1797.3	9784.8	1794.8
9792.8	1792.8	9795.6	1791.9	9806	1789.7	9807.3	1789.4	9809.1	1789.5
9822.1	1791.1	9822.2	1791.1	9832.3	1791.4	9839.1	1791.5	9860.3	1791.9
9867.4	1792.1	9881.9	1792.1	9906.5	1791.6	9907.1	1791.6	9910.4	1790.9
9913.7	1790.3	9926.4	1787.9	9929.1	1787.8	9934.9	1787.6	9935.9	1787.6
9944.1	1789.7	9947.8	1790.5	9948.7	1790.6	9948.9	1790.7	9955.7	1790.3
9960.7	1790	9975.1	1789.3	9977.8	1789	9982.1	1788.5	9996.2	1788.7
10002.8	1788.8	10011.2	1792.2	10011.3	1792.3	10024.6	1798	10041.7	1802.8
10064	1809.8	10064.2	1809.8	10064.6	1809.8	10073.1	1809.6		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9749.1	.055	9948.7	.04	10011.3	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9948.7	10011.3	466.05	543.86	551.8	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9789.02	9808.98	110.80	33.25	16.92	3.81	2.01	3.33
9808.98	9828.94	166.71	45.47	20.06	5.73	2.28	3.67
9828.94	9848.90	72.37	27.51	19.96	2.49	1.38	2.63
9848.90	9868.86	41.87	19.81	19.96	1.44	0.99	2.11
9868.86	9888.82	29.58	16.08	19.96	1.02	0.81	1.84
9888.82	9908.78	52.46	22.70	20.00	1.80	1.14	2.31
9908.78	9928.74	341.65	70.24	20.28	11.74	3.52	4.86
9928.74	9948.70	461.93	84.24	20.32	15.87	4.22	5.48
LB 9948.70	9961.22	198.30	31.80	12.56	6.81	2.54	6.24
9961.22	9973.74	293.58	40.20	12.54	10.09	3.21	7.30
9973.74	9986.26	432.40	50.77	12.57	14.86	4.05	8.52
9986.26	9998.78	465.73	53.00	12.52	16.00	4.23	8.79
9998.78	RB 10011.30	242.21	36.59	13.22	8.32	2.92	6.62
10011.30	10031.90	0.41	0.39	1.48	0.01	0.29	1.04

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9789.02	9808.98	110.17	32.74	16.80	3.79	2.00	3.36
9808.98	9828.94	165.42	44.86	20.06	5.68	2.25	3.69
9828.94	9848.90	70.75	26.90	19.96	2.43	1.35	2.63
9848.90	9868.86	40.33	19.20	19.96	1.39	0.96	2.10
9868.86	9888.82	28.14	15.47	19.96	0.97	0.77	1.82
9888.82	9908.78	50.88	22.08	20.00	1.75	1.11	2.30

9908.78	9928.74	341.73	69.63	20.28	11.74	3.49	4.91
9928.74	9948.70	463.17	83.63	20.32	15.92	4.19	5.54
LB 9948.70	9961.22	196.04	31.41	12.56	6.81	2.51	6.30
9961.22	9973.74	294.45	39.82	12.54	10.12	3.18	7.39
9973.74	9986.26	435.12	50.38	12.57	14.95	4.02	8.64
9986.26	9998.78	468.91	52.62	12.52	16.11	4.20	8.91
9998.78	RB 10011.30	242.54	36.21	13.22	8.33	2.89	6.70
10011.30	10031.90	0.36	0.35	1.40	0.01	0.28	1.02

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 6.058

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9849.3	1795.3	9849.9	1795.2	9861	1793.5	9861.9	1793.3	9862.2	1793.3
9862.4	1793.3	9894.4	1786.8	9898.6	1785.7	9902.2	1784.8	9910.9	1782.7
9915.4	1782.3	9925.8	1782.7	9928.9	1782.7	9931.7	1783	9942.6	1784.2
9948.3	1784.9	9955.8	1785	9963.8	1785	9964.1	1785	9964.3	1785
9981.2	1784.2	9981.3	1784.2	9991.4	1781.9	9993.2	1781.4	9994.4	1781.4
9999.7	1781.2	10004.1	1781.3	10007.2	1781.5	10009.5	1781.5	10014.5	1781.7
10014.6	1781.8	10021.7	1786.1	10023.2	1787	10025.1	1788	10038.3	1793.1
10040.1	1793.8	10043.1	1794.6	10057.7	1799.4	10059	1799.8		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9849.3	.055	9981.2	.04	10021.7	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.2	10021.7	442.27	441.89	421.2	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9875.68	9902.06	10.74	4.38	6.02	0.37	0.75	2.45
9902.06	9928.44	603.36	89.06	26.66	20.73	3.38	6.77
9928.44	9954.82	314.54	60.11	26.51	10.81	2.28	5.23
9954.82	9981.20	170.82	41.61	26.40	5.87	1.58	4.11
LB 9981.20	9989.30	214.68	24.46	8.30	7.38	3.02	8.78
9989.30	9997.40	450.69	38.03	8.22	15.49	4.69	11.85
9997.40	10005.50	514.92	40.95	8.11	17.70	5.06	12.57
10005.50	10013.60	470.68	38.81	8.11	16.17	4.79	12.13
10013.60	RB 10021.70	159.55	21.46	9.34	5.48	2.65	7.43
10021.70	10034.13	0.03	0.04	0.43	0.00	0.11	0.67

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9875.68	9902.06	11.55	4.65	6.06	0.40	0.80	2.48
9902.06	9928.44	603.84	90.28	26.66	20.75	3.42	6.69
9928.44	9954.82	318.20	61.32	26.51	10.93	2.32	5.19
9954.82	9981.20	175.35	42.82	26.40	6.03	1.62	4.09
LB 9981.20	9989.30	215.09	24.84	8.30	7.39	3.07	8.66
9989.30	9997.40	447.54	38.40	8.22	15.38	4.74	11.65
9997.40	10005.50	510.74	41.33	8.11	17.55	5.10	12.36
10005.50	10013.60	467.24	39.18	8.11	16.06	4.84	11.93
10013.60	RB 10021.70	160.41	21.83	9.34	5.51	2.70	7.35
10021.70	10034.13	0.04	0.06	0.48	0.00	0.16	0.78

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 5.974

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9927.9	1790.1	9950.3	1783.3	9962.9	1779.7	9963.7	1779.6	9964.2	1779.3
9964.6	1779.2	9969.3	1778.2	9976.5	1777	9982.7	1777.4	9985.2	1777.5
9986.9	1777.4	9999.1	1775.9	10001.9	1775.6	10002.2	1775.5	10002.4	1775.5
10004.7	1775.6	10016.4	1775.9	10022.7	1777.3	10032.6	1779.3	10056.4	1778.9
10062.2	1778.8	10077.3	1780.9	10097.7	1783.8	10117.5	1784.8	10132.8	1785.6
10139	1785.8								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9927.9	.055	9964.2	.04	10032.6	.055

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9964.2 10032.6 257.05 247.47 187.18 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9952.10	9964.20	19.57	8.70	8.19	0.67	1.11	2.25
LB 9964.20	9977.88	331.98	49.23	13.90	11.41	3.60	6.74
9977.88	9991.56	451.35	58.90	13.73	15.51	4.31	7.66
9991.56	10005.24	683.18	75.62	13.77	23.48	5.53	9.03
10005.24	10018.92	727.02	78.43	13.74	24.98	5.73	9.27
10018.92	RB 10032.60	340.45	50.08	13.97	11.70	3.66	6.80
10032.60	10053.88	192.63	52.08	21.28	6.62	2.45	3.70
10053.88	10075.16	159.66	46.64	21.41	5.49	2.19	3.42
10075.16	10096.44	4.15	3.32	6.91	0.14	0.49	1.25

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9952.10	9964.20	36.96	13.62	8.82	1.27	1.74	2.71
LB 9964.20	9977.88	405.75	57.80	13.90	13.94	4.23	7.02
9977.88	9991.56	529.42	67.48	13.73	18.19	4.93	7.85
9991.56	10005.24	764.17	84.20	13.77	26.26	6.15	9.08
10005.24	10018.92	808.25	87.01	13.74	27.77	6.36	9.29
10018.92	RB 10032.60	365.46	58.66	16.87	12.56	4.29	6.23

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 5.927

INPUT
Description: 100-year, 24-hour Peak Discharge of 3380 cfs from HEC-1 model at station C205L.
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9943.5	1799.9	9955.5	1797.4	9964.3	1795	9965.9	1794.6	9973.1	1788.1
9984.5	1778	9990.3	1772.8	10006.4	1773	10027.3	1773.2	10033.6	1774.5
10041.8	1776	10041.9	1776	10049.2	1775.8	10050.3	1775.8	10052.6	1775.7
10065.9	1776.6	10070.6	1776.9	10088.4	1780.5	10099.3	1782.5	10104.2	1782.5
10112.2	1782.8	10114.3	1782.9						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9943.5	.055	9984.5	.04	10041.9	.055

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9984.5 10041.9 328.04 325.84 311.12 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9970.83	9984.50	0.04	0.06	0.49	0.00	0.16	0.75
LB 9984.50	9995.98	464.75	48.13	13.47	13.75	4.19	9.66
9995.98	10007.46	783.82	61.77	11.48	23.19	5.38	12.69
10007.46	10018.94	754.19	60.36	11.48	22.31	5.26	12.49
10018.94	10030.42	705.80	58.14	11.55	20.88	5.06	12.14
10030.42	RB 10041.90	354.30	38.63	11.68	10.48	3.37	9.17
10041.90	10056.38	187.96	35.81	14.49	5.56	2.47	5.25
10056.38	10070.86	118.91	27.23	14.52	3.52	1.88	4.37
10070.86	10085.34	10.22	4.64	6.91	0.30	0.69	2.20

Warning: The energy equation could not be balanced within the specified number of iterations. The

program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9970.83	9984.50	0.10	0.10	0.59	0.00	0.27	1.00
LB 9984.50	9995.98	522.60	49.34	13.47	15.46	4.30	10.59
9995.98	10007.46	873.41	62.99	11.48	25.84	5.49	13.87
10007.46	10018.94	841.03	61.58	11.48	24.88	5.36	13.66
10018.94	10030.42	788.06	59.35	11.55	23.32	5.17	13.28
10030.42	RB 10041.90	354.81	39.85	14.11	10.50	3.47	8.90

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 5.865

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9910.6	1787.3	9915.7	1785.4	9954.9	1771.4	9965.2	1771	9970.4	1770.5
9973.3	1770.2	9974.7	1770.2	9978.7	1770.6	9979.8	1770.7	9980.9	1770.6
9989.1	1770.2	9989.3	1770.2	9989.4	1770.2	9989.7	1770.1	9993.1	1768.5
9994.4	1767.8	9994.5	1767.8	10001.3	1767.4	10001.8	1767.4	10002.1	1767.4
10002.2	1767.4	10003	1767.4	10012.5	1767.5	10019.6	1769.1	10024.7	1770
10026	1770.1	10028.5	1770	10036.7	1770	10043.5	1769.8	10048.7	1770.9
10057.8	1772.8	10063.1	1773	10065.2	1773.1	10070	1773.3	10080.3	1774
10080.6	1774	10093.8	1774.5	10094.7	1774.6	10100.4	1774.6	10103.7	1774.6
10112.8	1775.2	10125.3	1776.2	10128.3	1776.5	10129.3	1776.5	10142.9	1777.1
10144.6	1777.1	10145	1777.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9910.6	.055	9989.3	.04	10024.7	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9989.3	10024.7	100.12	104.62	110.39	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9942.08	9957.82	45.50	13.10	9.38	1.35	1.46	3.47
9957.82	9973.56	231.31	42.80	15.79	6.84	2.72	5.40
9973.56	9989.30	296.11	49.63	15.78	8.76	3.15	5.97
LB 9989.30	9996.38	368.88	34.46	7.63	10.91	4.87	10.70
9996.38	10003.46	559.97	42.98	7.09	16.57	6.07	13.03
10003.46	10010.54	569.45	43.39	7.08	16.85	6.13	13.12
10010.54	10017.62	492.29	40.05	7.21	14.56	5.66	12.29
10017.62	RB 10024.70	300.80	29.80	7.21	8.90	4.21	10.09
10024.70	10048.76	464.91	84.52	24.18	13.75	3.51	5.50
10048.76	10072.82	50.78	22.42	24.27	1.50	0.93	2.27
10072.82	10096.88	0.01	0.05	1.16	0.00	0.04	0.28

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9942.08	9957.82	55.10	14.55	9.54	1.63	1.62	3.79
9957.82	9973.56	261.74	45.34	15.79	7.74	2.88	5.77
9973.56	9989.30	330.77	52.17	15.78	9.79	3.31	6.34
LB 9989.30	9996.38	399.63	35.60	7.63	11.82	5.03	11.22
9996.38	10003.46	600.23	44.12	7.09	17.76	6.23	13.60
10003.46	10010.54	610.13	44.53	7.08	18.05	6.29	13.70
10010.54	10017.62	529.35	41.19	7.21	15.66	5.82	12.85
10017.62	RB 10024.70	328.61	30.94	7.21	9.72	4.37	10.62
10024.70	10048.76	264.44	44.60	15.74	7.82	3.72	5.93

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 5.845

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9889.3	1789.4	9902.2	1787.1	9919	1784	9924	1782.9	9934.9	1781.1
9951.7	1774.7	9955.7	1773.3	9962.7	1772.8	9971.5	1772	9980	1769.1
9991.3	1767.7	9991.4	1767.7	9991.9	1767.5	9992.6	1766.1	9997.8	1758.6
10006.7	1758.8	10006.9	1758.8	10007.1	1758.9	10015.7	1763.6	10016.4	1763.8
10016.7	1763.9	10017.3	1763.8	10017.7	1763.7	10024.9	1763.6	10027	1763.9
10034.7	1764.2	10037.5	1764	10043.8	1764.6	10051.3	1765.5	10056.9	1766.5
10060.2	1767	10061.7	1767.2	10065.3	1767.5	10068.2	1767.2	10070.1	1766.9
10072.8	1766.4	10081	1770	10083.8	1770.7	10099.3	1774.6	10106.5	1774.9
10122.7	1775.1	10128.1	1775.6	10134.2	1776				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9889.3	.07	9991.4	.05	10016.4	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9991.4	10016.4	396.36	458.8	281.48	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.37	9991.40	0.47	0.40	1.48	0.01	0.29	1.17
LB 9991.40	9996.40	121.51	19.87	8.77	3.59	3.97	6.11
9996.40	10001.40	644.59	46.64	6.06	19.07	9.33	13.82
10001.40	10006.40	755.38	47.51	5.00	22.35	9.50	15.90
10006.40	10011.40	562.11	41.70	5.62	16.63	8.34	13.48
10011.40	RB 10016.40	292.31	28.18	5.63	8.65	5.64	10.37
10016.40	10039.96	687.92	102.20	23.64	20.35	4.34	6.73
10039.96	10063.52	278.28	59.51	23.78	8.23	2.53	4.68
10063.52	10087.08	37.44	14.43	13.95	1.11	1.07	2.59

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.37	9991.40	0.05	0.07	0.63	0.00	0.12	0.73
LB 9991.40	9996.40	115.00	18.21	8.77	3.40	3.64	6.32
9996.40	10001.40	664.32	44.97	6.06	19.65	8.99	14.77
10001.40	10006.40	779.39	45.85	5.00	23.06	9.17	17.00
10006.40	10011.40	575.10	40.04	5.62	17.01	8.01	14.36
10011.40	RB 10016.40	289.19	26.51	5.63	8.56	5.30	10.91
10016.40	10039.96	719.04	94.36	23.64	21.27	4.01	7.62
10039.96	10063.52	237.91	42.50	16.92	7.04	2.83	5.60

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 5.759

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9958.5	1766.4	9962	1766.4	9967.6	1765.8	9970	1761.5	9972.5	1758.7
9973.7	1757.3	9978.1	1756.9	9980.3	1756.3	9992.8	1754	9996.2	1753.2
10005.1	1752.7	10008.1	1752.5	10014.1	1753	10017.1	1753.3	10024.5	1752.6
10026.2	1752.4	10033	1756.8	10034.1	1759.8	10043.6	1769	10047.2	1769.6
10056.5	1771.2	10068.1	1774.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

9958.5 .055 9972.5 .04 10033 .055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972.5	10033	281.9	300.61	308.52	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9967.83	9972.50	0.00	0.00	0.13	0.00	0.05	0.35
LB 9972.50	9984.60	176.92	25.72	12.91	5.23	2.13	6.88
9984.60	9996.70	621.34	53.66	12.33	18.38	4.43	11.58
9996.70	10008.80	1031.69	72.24	12.12	30.52	5.97	14.28
10008.80	10020.90	987.65	70.44	12.15	29.22	5.82	14.02
10020.90	RB 10033.00	562.40	54.17	14.66	16.64	4.48	10.38

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9967.83	9972.50	0.00	0.01	0.17	0.00	0.09	0.43
LB 9972.50	9984.60	180.06	26.20	12.91	5.33	2.17	6.87
9984.60	9996.70	622.37	54.13	12.33	18.41	4.47	11.50
9996.70	10008.80	1029.50	72.72	12.12	30.46	6.01	14.16
10008.80	10020.90	985.83	70.92	12.15	29.17	5.86	13.90
10020.90	RB 10033.00	562.23	54.65	14.70	16.63	4.52	10.29

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 5.702

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9812.4	1769.6	9818.3	1769.5	9849.1	1762.3	9864.1	1758.9	9869.7	1758.6
9873.8	1758.3	9906.4	1755.7	9914.8	1755.1	9918.5	1754.7	9929.4	1753.7
9933.5	1753.4	9944	1752.5	9958.8	1752.2	9964.7	1752.1	9964.8	1752.1
9968.2	1751.6	9975.6	1750.5	9980.1	1750.7	9982.7	1750.8	9986.3	1750.3
9991	1749.6	9999.6	1749.4	9999.9	1749.4	10010.3	1749.1	10013.9	1750.1
10019	1751.4	10022.9	1752.4	10024.1	1752.7	10024.7	1752.9	10031.2	1755.3
10047.8	1761.4	10066.8	1769.6	10069.7	1770.8	10075.6	1773.2	10094.4	1772.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9812.4	.055	9964.7	.04	10031.2	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9964.7	10031.2	387.7	409.45	412.67	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9873.32	9903.78	0.01	0.03	0.85	0.00	0.03	0.19
9903.78	9934.24	87.30	40.51	30.57	2.58	1.33	2.15
9934.24	9964.70	435.02	106.09	30.50	12.87	3.48	4.10
LB 9964.70	9978.00	480.12	63.88	13.42	14.20	4.80	7.52
9978.00	9991.30	621.73	74.54	13.39	18.39	5.60	8.34
9991.30	10004.60	807.71	86.99	13.30	23.90	6.54	9.29
10004.60	10017.90	739.48	83.14	13.57	21.88	6.25	8.89
10017.90	RB 10031.20	208.06	39.30	13.96	6.16	2.95	5.29
10031.20	10052.27	0.58	0.62	1.96	0.02	0.34	0.93

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less

than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9964.70	9978.00	492.89	65.67	17.43	14.58	4.94	7.51
9978.00	9991.30	754.91	76.32	13.39	22.33	5.74	9.89
9991.30	10004.60	975.26	88.77	13.30	28.85	6.67	10.99
10004.60	10017.90	894.26	84.93	13.57	26.46	6.39	10.53
10017.90	RB 10031.20	261.53	41.08	13.96	7.74	3.09	6.37
10031.20	10052.27	1.14	0.87	2.09	0.03	0.47	1.31

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 5.624

INPUT
Description:
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9907.8	1759.5	9932.7	1753.4	9952.7	1747.5	9968.2	1747.8	9971	1747.9
9980	1746.2	9980.6	1746.1	9984.9	1746	10008	1745.5	10012.8	1747.4
10014.6	1749	10018.1	1751.1	10025	1755.3	10031.1	1758.9	10041.3	1764
10054.4	1766.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9907.8	.055	9971	.04	10018.1	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971	10018.1	358.06	385.01	390.73	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9933.08	9945.72	13.92	5.20	6.19	0.41	0.88	2.68
9945.72	9958.36	262.37	40.68	12.94	7.76	3.22	6.45
9958.36	9971.00	317.34	45.18	12.64	9.39	3.57	7.02
LB 9971.00	9980.42	454.51	40.51	9.58	13.45	4.30	11.22
9980.42	9989.84	654.03	50.06	9.42	19.35	5.31	13.07
9989.84	9999.26	696.92	52.00	9.42	20.62	5.52	13.40
9999.26	10008.68	735.49	53.82	9.47	21.76	5.71	13.67
10008.68	RB 10018.10	245.40	29.49	10.92	7.26	3.13	8.32
10018.10	10030.20	0.02	0.04	0.41	0.00	0.11	0.65

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9933.08	9945.72	15.26	5.60	6.26	0.45	0.94	2.73
9945.72	9958.36	265.21	41.53	12.94	7.85	3.29	6.39
9958.36	9971.00	319.69	46.02	12.64	9.46	3.64	6.95
LB 9971.00	9980.42	454.98	41.14	9.58	13.46	4.37	11.06
9980.42	9989.84	651.51	50.69	9.42	19.28	5.38	12.85
9989.84	9999.26	693.70	52.63	9.42	20.52	5.59	13.18
9999.26	10008.68	731.59	54.45	9.47	21.64	5.78	13.44
10008.68	RB 10018.10	248.00	30.12	10.92	7.34	3.20	8.23
10018.10	10030.20	0.05	0.06	0.48	0.00	0.17	0.79

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: *The parabolic search method failed to converge on critical depth. The program will try the* cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 5.551

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9857.1	1757.5	9862.6	1755.4	9865.1	1754.4	9865.5	1754.2	9865.7	1754.2
9876.5	1750.5	9878.5	1749.7	9886.3	1747.2	9886.7	1747.1	9887.6	1746.9
9890.2	1746.6	9897.2	1745.5	9898.2	1745.4	9904.4	1744.6	9912.6	1744.1
9914.5	1744	9923.5	1744.3	9923.6	1744.3	9923.7	1744.3	9927.2	1743.9
9930.8	1743.2	9935.3	1742.9	9947.7	1742.8	9950	1743.1	9957	1743.1
9961.5	1742.5	9976.5	1743.9	9977.6	1744.1	9977.7	1744.1	9978	1744
9978.2	1743.9	9978.5	1743.9	9990.4	1740.9	9996	1740.9	10009.4	1741
10015.8	1740.9	10016.6	1740.9	10017.9	1741.6	10027.1	1746	10047.9	1756
10049.5	1756.2	10053.4	1757.4						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9857.1	.05	9977.6	.04	10027.1	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.6	10027.1	255.68	229.78	183.88	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9881.20	9905.30	33.05	12.28	13.20	0.98	0.94	2.69
9905.30	9929.40	240.81	51.51	24.18	7.12	2.14	4.68
9929.40	9953.50	502.62	80.06	24.16	14.87	3.32	6.28
9953.50	9977.60	455.77	75.58	24.22	13.48	3.14	6.03
LB 9977.60	9987.50	267.61	33.73	10.22	7.92	3.41	7.93
9987.50	9997.40	563.06	52.22	9.99	16.66	5.28	10.78
9997.40	10007.30	577.40	52.83	9.90	17.08	5.34	10.93
10007.30	10017.20	571.63	52.68	9.98	16.91	5.32	10.85
10017.20	RB 10027.10	167.98	26.26	10.99	4.97	2.65	6.40
10027.10	10035.87	0.06	0.08	0.65	0.00	0.14	0.76

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9881.20	9905.30	31.77	11.78	12.95	0.94	0.92	2.70
9905.30	9929.40	237.70	50.57	24.18	7.03	2.10	4.70
9929.40	9953.50	501.64	79.12	24.16	14.84	3.28	6.34
9953.50	9977.60	454.35	74.64	24.22	13.44	3.10	6.09
LB 9977.60	9987.50	267.10	33.34	10.22	7.90	3.37	8.01
9987.50	9997.40	565.83	51.84	9.99	16.74	5.24	10.92
9997.40	10007.30	580.32	52.44	9.90	17.17	5.30	11.07
10007.30	10017.20	574.51	52.29	9.98	17.00	5.28	10.99
10017.20	RB 10027.10	166.73	25.87	10.99	4.93	2.61	6.44
10027.10	10035.87	0.04	0.06	0.56	0.00	0.12	0.70

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 5.508

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9942.4	1764.9	9946.3	1764.7	9947.5	1764.7	9962.1	1748.8	9967.5	1742.8
9970	1740	9972.7	1737.3	9973.3	1736.8	9982.5	1737	9990	1737.3
9990.9	1737.3	9995.3	1738.3	9995.4	1738.3	10000	1738.1	10006.9	1737.7
10011.6	1738.5	10026.4	1740.8	10026.5	1740.8	10033.7	1741.3	10041.2	1741.8
10043.7	1742	10048.2	1741.9	10053.6	1741.7	10063	1742.2	10073.1	1742.7
10079.4	1743	10087.9	1744.6	10104.1	1748.1	10105.7	1748.3	10117.9	1750

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9942.4	.05	9967.5	.04	10026.5	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967.5	10026.5	259.09	253.93	227.65	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.13	9967.50	0.06	0.08	0.55	0.00	0.21	0.83
LB 9967.50	9979.30	565.83	58.63	14.35	16.74	4.97	9.65
9979.30	9991.10	906.57	71.96	11.81	26.82	6.10	12.60
9991.10	10002.90	689.17	61.26	11.92	20.39	5.19	11.25
10002.90	10014.70	656.25	59.48	11.91	19.42	5.04	11.03
10014.70	RB 10026.50	325.72	39.11	11.94	9.64	3.31	8.33
10026.50	10044.78	135.82	32.64	18.32	4.02	1.79	4.16
10044.78	10063.06	80.94	23.92	18.30	2.39	1.31	3.38

10063.06	10081.34	19.64	10.05	17.51	0.58	0.58	1.95

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.13	9967.50	0.08	0.09	0.60	0.00	0.25	0.88
LB 9967.50	9979.30	564.07	59.19	14.35	16.69	5.02	9.53
9979.30	9991.10	901.09	72.52	11.81	26.66	6.15	12.42
9991.10	10002.90	686.56	61.82	11.92	20.31	5.24	11.10
10002.90	10014.70	654.06	60.04	11.91	19.35	5.09	10.89
10014.70	RB 10026.50	327.28	39.67	11.94	9.68	3.36	8.25
10026.50	10044.78	140.01	33.52	18.32	4.14	1.83	4.18
10044.78	10063.06	84.77	24.79	18.30	2.51	1.36	3.42
10063.06	10081.34	22.09	10.88	17.56	0.65	0.62	2.03

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 5.460

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9928.1	1751.6	9947	1739.5	9950.8	1737.1	9952.8	1736.9	9967.1	1736.2
9970	1736.3	9975.6	1735.6	9981.8	1735	9984.9	1734.4	9991.2	1734.3
10000.5	1734	10004.1	1734	10016.2	1736.3	10028.4	1738.6	10043.1	1739.2
10052.3	1739.5	10059.4	1739.7	10060.2	1739.7	10061.1	1739.7	10063.4	1739.8
10105.2	1741.3	10111.2	1741.5	10113.5	1741.6	10118.4	1742.8	10152.5	1751.1
10156.2	1751.1								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9928.1	.05	9947	.04	10028.4	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9947	10028.4	512.09	506.76	474.66	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9940.70	9947.00	0.80	0.61	1.63	0.02	0.44	1.33
LB 9947.00	9963.28	358.85	53.83	17.00	10.62	3.31	6.67
9963.28	9979.56	599.26	72.09	16.35	17.73	4.43	8.31
9979.56	9995.84	965.26	95.96	16.35	28.56	5.89	10.06
9995.84	10012.12	986.55	97.41	16.43	29.19	5.98	10.13
10012.12	RB 10028.40	366.73	53.98	16.57	10.85	3.32	6.79
10028.40	10053.96	87.39	32.66	25.58	2.59	1.28	2.68
10053.96	10079.52	15.15	11.41	25.58	0.45	0.45	1.33

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9940.70	9947.00	0.96	0.67	1.68	0.03	0.49	1.43
LB 9947.00	9963.28	375.65	54.60	17.00	11.11	3.35	6.88
9963.28	9979.56	623.56	72.86	16.35	18.45	4.48	8.56
9979.56	9995.84	999.99	96.74	16.35	29.59	5.94	10.34
9995.84	10012.12	1021.84	98.18	16.43	30.23	6.03	10.41
10012.12	RB 10028.40	358.00	54.75	18.40	10.59	3.36	6.54

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 5.364

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9913.4	1742.1	9919.1	1741.2	9925.3	1740.9	9931.9	1739.6	9935	1739.3
9944.1	1737.2	9945.9	1736.8	9949.3	1736.2	9952.7	1736	9953.2	1735.8
9958.9	1734.8	9962.8	1734.1	9964.8	1733.7	9973.5	1731.1	9975.9	1730.3
9981	1729.3	10002.5	1729.8	10020.4	1730.1	10027.4	1730.7	10033.3	1731.3
10052.2	1734.3	10052.3	1734.3	10068	1736.7	10090.4	1740.4	10099.8	1742.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9913.4	.05	9962.8	.04	10052.3	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9962.8	10052.3	287.57	314.37	324.32	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9946.33	9962.80	0.36	0.32	1.93	0.01	0.17	1.13
LB 9962.80	9980.70	418.37	50.05	18.55	12.38	2.80	8.36
9980.70	9998.60	1105.50	88.41	17.91	32.71	4.94	12.50
9998.60	10016.50	967.67	81.61	17.90	28.63	4.56	11.86
10016.50	10034.40	729.81	69.00	17.97	21.59	3.86	10.58
10034.40	RB 10052.30	158.25	27.67	18.12	4.68	1.55	5.72
10052.30	10068.13	0.04	0.07	0.93	0.00	0.07	0.63

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9946.33	9962.80	0.42	0.36	1.95	0.01	0.19	1.18
LB 9962.80	9980.70	419.51	50.35	18.55	12.41	2.81	8.33
9980.70	9998.60	1103.69	88.71	17.91	32.65	4.96	12.44
9998.60	10016.50	966.55	81.91	17.90	28.60	4.58	11.80
10016.50	10034.40	729.79	69.31	17.97	21.59	3.87	10.53
10034.40	RB 10052.30	159.97	27.98	18.12	4.73	1.56	5.72
10052.30	10068.13	0.06	0.08	0.95	0.00	0.09	0.71

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 5.304

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9867.9	1734.5	9869.2	1734.2	9875.2	1733.5	9877.5	1733.4	9880.5	1733.3
9890	1732.5	9891.2	1732.4	9896.4	1731.8	9912.5	1731.1	9914.5	1730.8
9916.5	1730.8	9932.7	1729.6	9935.5	1729.4	9937.6	1729.3	9955	1728
9956.1	1728	9957	1727.8	9963.6	1726.7	9964.5	1726.6	9968	1726.6
9972.4	1726.7	9974.1	1726.7	9974.2	1726.7	9981.6	1725.2	9989.2	1725.2
10000.4	1725.2	10004	1725.3	10004.9	1725.2	10007.1	1725.1	10009.7	1725.1
10010.8	1725	10011.4	1725.1	10012.9	1725.3	10033.5	1729.8	10042.4	1731.8
10050.2	1733.5	10050.4	1733.5	10050.5	1733.5	10067.3	1738.5	10071	1739.6
10084.7	1743.6	10091.9	1746.6	10096.4	1747.6				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9867.9	.05	9974.1	.04	10042.4	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9974.1 10042.4 189.88 199.29 201.39 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9889.14	9910.38	5.80	6.42	15.29	0.17	0.42	0.90
9910.38	9931.62	66.91	31.83	21.31	1.98	1.50	2.10
9931.62	9952.86	213.95	63.92	21.29	6.33	3.01	3.35
9952.86	9974.10	472.80	103.01	21.37	13.99	4.85	4.59
LB 9974.10	9987.76	665.59	86.49	13.81	19.69	6.33	7.70
9987.76	10001.42	745.52	92.17	13.66	22.06	6.75	8.09
10001.42	10015.08	738.27	91.87	13.75	21.84	6.73	8.04
10015.08	10028.74	398.97	63.94	13.98	11.80	4.68	6.24
10028.74	RB 10042.40	72.16	22.93	13.99	2.13	1.68	3.15
10042.40	10060.40	0.02	0.05	0.70	0.00	0.07	0.34

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9952.86	9974.10	237.57	51.61	14.72	7.03	5.85	4.60
LB 9974.10	9987.76	787.40	93.96	13.81	23.30	6.88	8.38
9987.76	10001.42	874.76	99.65	13.66	25.88	7.29	8.78
10001.42	10015.08	866.62	99.34	13.75	25.64	7.27	8.72
10015.08	10028.74	494.25	71.41	13.98	14.62	5.23	6.92
10028.74	RB 10042.40	118.99	30.40	13.99	3.52	2.23	3.91
10042.40	10060.40	0.41	0.42	1.24	0.01	0.62	0.97

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 5.266

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9877.8	1734	9894.2	1733.3	9915.2	1730.8	9917.1	1730.6	9918.4	1730.5
9926.5	1729.6	9936.6	1728.5	9938.4	1728.3	9947.3	1727.1	9949.8	1726.8
9951.2	1726.6	9954	1726.5	9964.9	1725.7	9965	1725.7	9972.4	1724.6
9977.5	1723.8	9990.3	1723.4	10007.4	1722.8	10016.4	1729.1	10019.6	1731.3
10031.9	1739	10044	1746.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9877.8	.05	9964.9	.04	10016.4	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9964.9 10016.4 497.34 496.37 477.49 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9930.06	9947.48	46.38	16.09	16.71	1.37	0.97	2.88
9947.48	9964.90	284.00	48.59	17.48	8.40	2.79	5.85
LB 9964.90	9975.20	446.87	43.00	10.42	13.22	4.18	10.39
9975.20	9985.50	685.10	55.39	10.33	20.27	5.38	12.37
9985.50	9995.80	764.55	59.10	10.31	22.62	5.74	12.94
9995.80	10006.10	845.37	62.78	10.31	25.01	6.09	13.47
10006.10	RB 10016.40	307.73	36.73	12.29	9.10	3.57	8.38

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)

LB 9964.90	9975.20	423.76	45.57	14.09	12.54	4.42	9.30
9975.20	9985.50	777.92	57.96	10.33	23.02	5.63	13.42
9985.50	9995.80	864.12	61.67	10.31	25.57	5.99	14.01
9995.80	10006.10	951.59	65.34	10.31	28.15	6.34	14.56
10006.10	RB 10016.40	362.61	39.29	12.29	10.73	3.81	9.23
10016.40	10025.60	0.00	0.01	0.29	0.00	0.26	0.32

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m), between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 5.172

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9937.1	1735.8	9950.4	1730.3	9968.3	1722.9	9970.4	1722.1	9977.9	1719.6
9985.1	1717.1	9991.2	1717.2	9994.5	1717.3	10000.3	1717.4	10002.5	1717.6
10014.7	1718.4	10022.4	1719.2	10027.6	1719.7	10027.8	1719.8	10028.1	1719.8
10036.5	1720.6	10036.6	1720.6	10053.1	1721.3	10069.6	1722	10074	1722.5
10076.6	1722.6	10080.8	1722.8	10085.7	1723.2	10087.2	1723.2	10089	1723.3
10090.3	1723.3	10091.5	1723.4	10097	1724	10100.7	1724	10107	1724.4
10108.9	1724.6	10121.5	1725.2	10125.8	1725.4	10130.1	1725.6	10134.7	1725.7
10152.5	1726.9	10173.1	1727.8	10175.7	1728.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9937.1	.05	9968.3	.04	10036.6	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.3	10036.6	325.3	308.86	286.18	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.90	9968.30	0.02	0.03	0.40	0.00	0.08	0.57
LB 9968.30	9981.96	242.02	34.58	14.45	7.16	2.53	7.00
9981.96	9995.62	978.25	78.59	13.85	28.94	5.75	12.45
9995.62	10009.28	896.72	74.34	13.68	26.59	5.44	12.09
10009.28	10022.94	645.65	61.02	13.72	19.10	4.47	10.58
10022.94	RB 10036.60	353.37	42.53	13.74	10.45	3.11	8.31
10036.60	10064.42	233.41	51.86	27.85	6.91	1.86	4.50
10064.42	10092.24	28.56	12.76	19.54	0.85	0.65	2.24

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The energy loss was greater than 1.0 ft (0.3 m), between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.90	9968.30	0.18	0.16	0.76	0.01	0.44	1.14
LB 9968.30	9981.96	292.08	39.47	14.45	8.64	2.89	7.40
9981.96	9995.62	1047.26	83.48	13.85	30.98	6.11	12.55
9995.62	10009.28	967.49	79.23	13.68	28.62	5.80	12.21
10009.28	10022.94	710.73	65.91	13.72	21.03	4.82	10.78
10022.94	RB 10036.60	362.26	47.42	16.56	10.72	3.47	7.64

Warning: The energy loss was greater than 1.0 ft (0.3 m), between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 5.114

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9959.4	1730.2	9974.3	1720.2	9977.1	1718.3	9978.4	1717.5	9981.9	1716.9
9987.7	1715.7	9996.8	1713.7	10016.1	1714	10021.3	1714.1	10023.1	1714.5
10029.3	1716.1	10037.6	1716.3	10046.8	1716.4	10072.4	1720.3	10081.9	1721.7
10088.6	1722.4	10103.7	1722.7	10130.2	1723.1	10138	1723.2	10141.2	1723.2
10148.7	1723.5	10171	1723.3	10207.8	1723.2	10230.1	1723.9		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9959.4	.05	9974.3	.04	10029.3	.05

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

9974.3 10029.3	185.55	182.66	169.32	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.33	9974.30	0.00	0.01	0.16	0.00	0.04	0.28
LB 9974.30	9985.30	166.37	29.54	11.93	4.92	2.69	5.63
9985.30	9996.30	532.70	58.00	11.26	15.76	5.27	9.18
9996.30	10007.30	767.57	71.59	11.01	22.71	6.51	10.72
10007.30	10018.30	735.13	69.73	11.00	21.75	6.34	10.54
10018.30	RB 10029.30	569.52	60.36	11.25	16.85	5.49	9.44
10029.30	10069.46	608.15	119.16	40.42	17.99	2.97	5.10
10069.46	10109.62	0.56	0.62	2.90	0.02	0.22	0.89

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.33	9974.30	0.06	0.11	0.99	0.00	0.88	0.56
LB 9974.30	9985.30	240.09	38.68	11.93	7.10	3.52	6.21
9985.30	9996.30	625.93	67.14	11.26	18.52	6.10	9.32
9996.30	10007.30	863.40	80.73	11.01	25.54	7.34	10.69
10007.30	10018.30	831.07	78.87	11.00	24.59	7.17	10.54
10018.30	RB 10029.30	663.28	69.50	11.25	19.62	6.32	9.54
10029.30	10069.46	156.17	33.00	11.54	4.62	4.94	4.73

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 5.079

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9940.1	1741.2	9943.2	1740.5	9946.4	1740.1	9949.6	1739.8	9950.3	1739.7
9963.3	1728.6	9970.9	1722.5	9976.7	1717.5	9983.1	1711.9	9985.9	1711.8
9990	1711.6	9996.6	1712.3	10004.1	1712.4	10016	1712.3	10022.4	1713.8
10022.5	1713.8	10022.9	1713.8	10023.4	1713.9	10026.5	1714	10037	1714.5
10039.6	1714.6	10048.6	1715.9	10072	1719.3	10074.6	1719.6	10084	1720
10108.5	1721.4	10117.4	1721.3	10140.1	1720.7	10162.4	1720	10169.3	1719.8
10169.4	1719.8	10169.7	1719.8	10181	1721.1	10184.3	1721.5	10187.1	1721.8
10200.5	1722.4	10212.5	1723	10220.4	1723.3	10250.9	1724.2	10277.6	1726
10279.7	1726.7	10285.2	1727.7	10291.8	1728.4				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9940.1	.05	9976.7	.04	10022.4	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.7	10022.4	552.82	556.08	568.26	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9964.50	9976.70	0.02	0.03	0.32	0.00	0.10	0.62
LB 9976.70	9985.84	313.21	35.30	11.25	9.27	3.86	8.87
9985.84	9994.98	730.80	54.09	9.17	21.62	5.92	13.51
9994.98	10004.12	624.83	49.19	9.15	18.49	5.38	12.70
10004.12	10013.26	618.48	48.87	9.14	18.30	5.35	12.66
10013.26	RB 10022.40	524.39	44.59	9.31	15.51	4.88	11.76
10022.40	10076.28	568.26	93.41	38.89	16.81	2.42	6.08

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9964.50	9976.70	0.11	0.11	0.66	0.00	0.45	1.06

LB 9976.70	9985.84	379.24	38.43	11.25	11.22	4.20	9.87
9985.84	9994.98	843.51	57.22	9.17	24.96	6.26	14.74
9994.98	10004.12	727.76	52.32	9.15	21.53	5.72	13.91
10004.12	10013.26	720.84	52.00	9.14	21.33	5.69	13.86
10013.26	RB 10022.40	617.06	47.72	9.31	18.26	5.22	12.93
10022.40	10076.28	91.47	16.08	7.96	2.71	4.13	5.69

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.974

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9913.3	1721.4	9934.2	1721.3	9936.9	1721.3	9938.3	1721.2	9950.8	1721.3
9952	1721.2	9964.6	1714.4	9970.9	1711.2	9983.4	1704.8	9998.2	1704.8
10010.2	1704.6	10015.1	1704.7	10023	1705.6	10023.1	1705.6	10030.6	1704.9
10034.9	1705.2	10039.1	1705.2	10045.5	1705.3	10046.3	1705.3	10049.7	1705.3
10051.8	1705.5	10053.6	1705.8	10067	1707.1	10069.3	1707.3	10072.8	1707.6
10075.4	1707.6	10077.2	1707.5	10080.7	1707.7	10092	1706.2	10092.4	1706.2
10092.8	1706.3	10093.1	1706.4	10104.8	1709.2	10107.8	1709.3	10125.3	1710.1
10131.3	1712.2	10140.3	1717.7	10150	1720.6	10152.3	1720.8	10153.5	1720.9

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9913.3	.06	9970.9	.045	10072.8	.06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9970.9 10072.8 146.38 182.15 213.63 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev
10072.8	10153.5	1716.4

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.38	9970.90	0.00	0.02	0.32	0.00	0.07	0.23
LB 9970.90	9991.28	452.79	93.37	21.92	13.40	4.58	4.85
9991.28	10011.66	877.05	134.84	20.38	25.95	6.62	6.50
10011.66	10032.04	795.64	127.40	20.47	23.54	6.25	6.25
10032.04	10052.42	763.40	124.13	20.41	22.59	6.09	6.15
10052.42	RB 10072.80	491.11	95.40	20.48	14.53	4.68	5.15
10072.80	10099.70	0.00	112.34	27.22	0.00	4.18	0.00
10099.70	10126.60	0.00	50.42	27.14	0.00	1.87	0.00
10126.60	10153.50	0.00	0.89	2.39	0.00	0.39	0.00

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.38	9970.90	0.12	0.29	1.29	0.00	1.05	0.41
LB 9970.90	9991.28	490.45	113.29	21.92	14.51	5.56	4.33
9991.28	10011.66	865.92	154.76	20.38	25.62	7.59	5.60
10011.66	10032.04	795.42	147.32	20.47	23.53	7.23	5.40
10032.04	10052.42	767.73	144.04	20.41	22.71	7.07	5.33
10052.42	RB 10072.80	460.36	115.32	25.20	13.62	5.66	3.99

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.939

INPUT
Description: 100-year, 24-hour Peak Discharge of 4420 cfs from HEC-1 model at station C206.
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9849.2	1718.7	9855.5	1718.4	9855.7	1718.4	9855.9	1718.4	9862.2	1716.8
9884.8	1710.3	9890.6	1708.7	9921.3	1706.2	9926.9	1705.7	9929.2	1705.8
9931.2	1706.1	9945	1707.1	9959.3	1705.1	9960.5	1704.9	9970.6	1705.2
9971.3	1705.2	9971.4	1705.2	9972.2	1705	9974.7	1704.6	9982	1703.3
9990.7	1702.4	9998.6	1701.9	9999.3	1701.6	10004	1701.6	10009.8	1701.6
10016	1705.1	10019	1707.9	10024.7	1713.2	10029.2	1723.5	10030.5	1725.6
10042	1736	10042.1	1736	10048.8	1740.7				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9849.2	.05	9971.3	.04	10019	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.3	10019	231.58	293.38	306.05	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9873.62	9898.04	7.46	4.22	8.40	0.17	0.51	1.77
9898.04	9922.46	190.03	45.16	24.50	4.30	1.85	4.21
9922.46	9946.88	331.19	63.04	24.52	7.49	2.58	5.25
9946.88	9971.30	531.18	83.76	24.56	12.02	3.43	6.34
LB 9971.30	9980.84	439.30	43.88	9.69	9.94	4.60	10.01
9980.84	9990.38	691.55	57.40	9.60	15.65	6.02	12.05
9990.38	9999.92	858.45	65.40	9.62	19.42	6.85	13.13
9999.92	10009.46	969.31	70.11	9.54	21.93	7.35	13.83
10009.46	RB 10019.00	400.59	44.56	11.56	9.06	4.67	8.99
10019.00	10028.93	0.94	0.59	1.54	0.02	0.52	1.60

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9946.88	9971.30	546.79	72.78	22.49	12.37	3.72	7.51
LB 9971.30	9980.84	508.48	44.34	9.69	11.50	4.65	11.47
9980.84	9990.38	797.21	57.86	9.60	18.04	6.07	13.78
9990.38	9999.92	988.01	65.86	9.62	22.35	6.90	15.00
9999.92	10009.46	1114.73	70.57	9.54	25.22	7.40	15.80
10009.46	RB 10019.00	463.56	45.02	11.56	10.49	4.72	10.30
10019.00	10028.93	1.22	0.65	1.59	0.03	0.57	1.88

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.884

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9871.4	1709	9880.3	1708.6	9883.9	1708.5	9884.6	1708.4	9887.6	1708.4
9887.8	1708.4	9892.9	1707.6	9900.2	1705.6	9902	1704.9	9902.3	1704.9
9923.5	1701.8	9924.6	1701.7	9926.5	1701.6	9949.6	1700.8	9960.9	1699
9967.3	1697.8	9972.2	1697.5	9973.5	1697.4	9976.6	1698.4	9983.7	1700.3
9989.4	1697.9	9993.7	1697.1	9997.6	1697.4	10004.4	1697.9	10006.7	1698
10014.8	1703.1	10014.9	1703.1	10038	1718.7	10045.4	1725.7	10046.5	1727

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9871.4	.05	9949.6	.04	10014.8	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9949.6	10014.8	510.44	528.3	538.68	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9902.68	9918.32	13.59	5.96	9.12	0.31	0.66	2.28
9918.32	9933.96	166.73	33.32	15.71	3.77	2.13	5.00
9933.96	9949.60	264.54	43.89	15.65	5.99	2.81	6.03
LB 9949.60	9962.64	553.22	53.71	13.21	12.52	4.12	10.30
9962.64	9975.68	1039.72	78.51	13.24	23.52	6.02	13.24
9975.68	9988.72	657.94	60.58	13.76	14.89	4.65	10.86

9988.72	10001.76	1156.21	83.55	13.19	26.16	6.41	13.84
10001.76	RB 10014.80	567.20	56.62	14.52	12.83	4.34	10.02
10014.80	10025.37	0.87	0.53	1.49	0.02	0.42	1.65

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9949.60	9962.64	548.56	55.53	16.43	12.41	4.26	9.88
9962.64	9975.68	1171.71	80.32	13.24	26.51	6.16	14.59
9975.68	9988.72	749.73	62.39	13.76	16.96	4.78	12.02
9988.72	10001.76	1300.03	85.36	13.19	29.41	6.55	15.23
10001.76	RB 10014.80	648.52	58.43	14.52	14.67	4.48	11.10
10014.80	10025.37	1.44	0.70	1.63	0.03	0.56	2.07

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.784

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9905.3	1704.1	9931.5	1700.8	9963.5	1693.8	9971.6	1691.9	9976.6	1691.7
9987.8	1691.1	9998.4	1689.6	9998.7	1689.5	9999.2	1689.5	10007.8	1688.6
10009.7	1688.8	10017.3	1689.6	10018.5	1689.6	10029.1	1690	10042.7	1695
10049.1	1697.3	10057.6	1700.4	10059.6	1702	10069.7	1710.8		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9905.3	.05	9987.8	.04	10042.7	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.8	10042.7	476.4	484.84	494.36	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9954.80	9971.30	133.93	29.36	16.66	3.03	1.81	4.56
9971.30	9987.80	545.05	67.94	16.53	12.33	4.12	8.02
LB 9987.80	9998.78	720.71	58.49	11.10	16.31	5.33	12.32
9998.78	10009.76	1045.41	72.94	11.04	23.65	6.64	14.33
10009.76	10020.74	961.02	69.31	11.02	21.74	6.31	13.87
10020.74	10031.72	793.26	62.07	11.16	17.95	5.65	12.78
10031.72	RB 10042.70	219.71	29.28	11.70	4.97	2.67	7.50
10042.70	10051.70	0.90	0.58	1.92	0.02	0.32	1.54

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9971.30	9987.80	88.36	16.23	8.13	2.00	4.92	5.45
LB 9987.80	9998.78	839.26	63.51	11.10	18.99	5.78	13.21
9998.78	10009.76	1185.74	77.96	11.04	26.83	7.10	15.21
10009.76	10020.74	1096.16	74.33	11.02	24.80	6.77	14.75
10020.74	10031.72	916.71	67.09	11.16	20.74	6.11	13.66
10031.72	RB 10042.70	290.35	34.30	11.70	6.57	3.12	8.46
10042.70	10051.70	3.42	1.41	2.37	0.08	0.78	2.43

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross

section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.692

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9841.3	1693.9	9852.4	1693.5	9856.8	1693.2	9864.1	1692.8	9870.9	1692.4
9880.7	1691.7	9891.8	1690.8	9896.5	1690.6	9906.5	1689.9	9940	1688.9
9970.3	1687.5	9970.4	1687.5	9989.5	1682.7	9991.4	1682.2	9993.4	1682.2
10010.2	1681.9	10022.7	1683	10024.9	1683.2	10028.3	1684.1	10039.7	1686.5
10042.6	1688	10058.3	1696.3	10063.4	1698.8	10069.4	1702.2	10069.9	1702.5
10082.1	1710								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9841.3	.05	9970.4	.04	10042.6	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970.4	10042.6	277.86	276.69	275.16	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9918.76	9944.58	0.03	0.07	1.71	0.00	0.04	0.38
9944.58	9970.40	43.49	17.44	25.85	0.98	0.68	2.49
LB 9970.40	9984.84	365.59	44.50	14.89	8.27	3.08	8.22
9984.84	9999.28	1186.71	89.61	14.65	26.85	6.21	13.24
9999.28	10013.72	1379.44	97.55	14.45	31.21	6.76	14.14
10013.72	10028.16	1079.87	84.55	14.60	24.43	5.86	12.77
10028.16	RB 10042.60	363.96	44.58	15.06	8.23	3.09	8.16
10042.60	10055.77	0.91	0.56	1.64	0.02	0.38	1.64

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9970.40	9984.84	346.12	43.43	16.08	7.83	3.01	7.97
9984.84	9999.28	1207.34	88.54	14.65	27.32	6.13	13.64
9999.28	10013.72	1405.72	96.48	14.45	31.80	6.68	14.57
10013.72	10028.16	1097.32	83.48	14.60	24.83	5.78	13.14
10028.16	RB 10042.60	362.77	43.51	15.06	8.21	3.01	8.34
10042.60	10055.77	0.73	0.45	1.48	0.02	0.35	1.60

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.640

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9799.6	1690.2	9800.2	1690.1	9806.5	1689.8	9811.3	1689.4	9821.8	1689
9832.4	1688.4	9836.5	1688.3	9852.8	1687.8	9857	1687.7	9862.1	1687.3
9863.5	1687.2	9876.9	1686.4	9882.7	1686	9889.6	1685.7	9891.5	1685.5
9895	1685.3	9901.8	1685.4	9908	1684.9	9914.7	1684.5	9920.4	1684.4
9925.1	1684.3	9928.1	1684.2	9939.9	1684.1	9947.1	1684	9961	1683.2
9974.1	1682.4	9974.2	1682.4	9975.2	1682.4	9982.6	1681	9989.5	1679.6
9993.6	1679.3	10004.3	1678.9	10014.3	1679.5	10021.2	1680	10029.3	1684.4
10029.4	1684.5	10042	1692.4	10044.8	1692.1				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9799.6	.05	9974.2	.04	10029.4	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.2	10029.4	238	210.63	162.54	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9869.44	9904.36	22.62	13.22	23.68	0.51	0.56	1.71
9904.36	9939.28	213.90	59.46	34.95	4.84	1.70	3.60
9939.28	9974.20	472.19	95.64	34.97	10.68	2.74	4.94
LB 9974.20	9985.24	482.79	50.84	11.23	10.92	4.61	9.50
9985.24	9996.28	864.27	71.88	11.14	19.55	6.51	12.02
9996.28	10007.32	1004.58	78.42	11.05	22.73	7.10	12.81
10007.32	10018.36	914.12	74.14	11.06	20.68	6.72	12.33
10018.36	RB 10029.40	440.76	49.78	12.21	9.97	4.51	8.85
10029.40	10034.53	4.77	2.14	3.08	0.11	0.82	2.23

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9869.44	9904.36	27.97	15.24	23.76	0.63	0.64	1.84
9904.36	9939.28	226.87	62.45	34.95	5.13	1.79	3.63
9939.28	9974.20	485.78	98.63	34.97	10.99	2.82	4.93
LB 9974.20	9985.24	482.05	51.79	11.23	10.91	4.69	9.31
9985.24	9996.28	855.27	72.83	11.14	19.35	6.60	11.74
9996.28	10007.32	992.33	79.37	11.05	22.45	7.19	12.50
10007.32	10018.36	904.01	75.08	11.06	20.45	6.80	12.04
10018.36	RB 10029.40	440.37	50.72	12.21	9.96	4.59	8.68
10029.40	10034.53	5.35	2.36	3.17	0.12	0.90	2.27

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.600

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9891	1708.9	9917.4	1705.3	9919.5	1704.9	9922.1	1704.5	9932.9	1702.5
9938.3	1701.7	9939.1	1701.6	9941.1	1701.3	9947.5	1700	9948.1	1699.9
9957.5	1695.7	9959.4	1695.1	9969.4	1693.5	9975.4	1690.3	9977.3	1688.4
9981.2	1685.7	9983	1684.7	9984.3	1681.3	9985.2	1678.8	9987.4	1678.4
9991.5	1677.1	9999.5	1673.5	10007.9	1674.5	10016.3	1675.6	10017.2	1675.6
10019.4	1675.9	10021.1	1676.4	10027.9	1678	10028.7	1678.1	10045.2	1679.9
10064.4	1681.9	10076.3	1682.1	10084.1	1682.2	10094.3	1682.8	10110.4	1683.1
10111.3	1683.2	10111.5	1683.2	10113.3	1683.1	10129.7	1683.9	10137.1	1684.2
10169.2	1686.3	10172.9	1686.5	10201.1	1695.6				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9891	.05	9984.3	.04	10028.7	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.3	10028.7	496.61	514.86	537.67	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.20	9984.30	0.47	0.39	1.53	0.01	0.72	1.21
LB 9984.30	9993.18	370.84	42.01	11.04	8.39	4.73	8.83
9993.18	10002.06	1019.00	72.59	9.51	23.05	8.17	14.04
10002.06	10010.94	1108.59	74.52	8.95	25.08	8.39	14.88
10010.94	10019.82	875.33	64.71	8.96	19.80	7.29	13.53
10019.82	RB 10028.70	556.91	49.69	9.13	12.60	5.60	11.21
10028.70	10063.18	461.11	95.60	34.67	10.43	2.77	4.82
10063.18	10097.66	27.74	16.70	29.96	0.63	0.56	1.66

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates

that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.20	9984.30	0.68	0.55	1.81	0.02	0.99	1.24
LB 9984.30	9993.18	374.51	44.52	11.04	8.47	5.01	8.41
9993.18	10002.06	988.71	75.09	9.51	22.37	8.46	13.17
10002.06	10010.94	1074.09	77.02	8.95	24.30	8.67	13.94
10010.94	10019.82	855.07	67.22	8.96	19.35	7.57	12.72
10019.82	RB 10028.70	554.28	52.20	9.13	12.54	5.88	10.62
10028.70	10063.18	520.28	105.33	34.67	11.77	3.05	4.94
10063.18	10097.66	52.37	25.15	30.24	1.18	0.84	2.08

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.502

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9918.4	1678.1	9927.4	1677.4	9941	1676.3	9945.2	1674.9	9959.1	1671.2
9965.9	1669.2	9966.1	1669.2	9973.4	1669.2	9979	1669.5	9979.1	1669.5
9989.3	1668.2	9996.8	1667.1	10013.4	1667.2	10022.8	1667.3	10029	1668.3
10034	1668.8	10036.2	1669.3	10038	1669.8	10039	1670	10043.2	1670.8
10045.7	1671.1	10049.4	1671.9	10053	1672.3	10056.6	1672.7	10063.4	1677.2
10067.2	1678.9	10086.8	1688.7	10087.9	1689.2	10088.1	1689.3	10089.9	1690
10090.9	1690.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9918.4	.065	9979.1	.05	10039	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.1	10039	316	378.26	399.37	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9948.75	9963.92	102.01	29.48	15.35	2.31	1.99	3.46
9963.92	9979.10	424.54	69.20	15.27	9.60	4.56	6.14
LB 9979.10	9991.08	571.10	61.35	12.08	12.92	5.12	9.31
9991.08	10003.06	861.42	78.41	12.04	19.49	6.55	10.99
10003.06	10015.04	894.51	80.04	11.98	20.24	6.68	11.18
10015.04	10027.02	843.57	77.41	12.03	19.09	6.46	10.90
10027.02	RB 10039.00	549.25	60.12	12.18	12.43	5.02	9.14
10039.00	10051.97	155.00	35.16	13.17	3.51	2.71	4.41
10051.97	10064.95	18.60	7.54	6.75	0.42	1.18	2.47

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9979.10	9991.08	583.53	61.14	16.42	13.20	5.10	9.54
9991.08	10003.06	1081.25	78.19	12.04	24.46	6.53	13.83
10003.06	10015.04	1122.90	79.83	11.98	25.40	6.66	14.07
10015.04	10027.02	1058.79	77.20	12.03	23.95	6.44	13.72
10027.02	RB 10039.00	573.53	59.91	16.01	12.98	5.00	9.57

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.430

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

9776	1680.1	9781.3	1677.7	9796.2	1677	9809	1676.5	9814.4	1676.2
9816.5	1676.2	9822.6	1675.7	9834.4	1673.8	9844.2	1673.4	9860	1672.9
9871.1	1670.6	9879.5	1668.9	9887	1669.2	9901.7	1670	9901.9	1670
9915.5	1669.1	9931.4	1668.3	9948.9	1665.4	9960.4	1663.4	9960.9	1663.3
9961.4	1663.3	9962.2	1663.2	9984.8	1662.7	10011.2	1661.7	10011.9	1661.7
10019.5	1668.1	10029.2	1676.4	10032.9	1679.8	10035	1680.2		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9776	.065	9931.4	.05	10019.5	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9931.4	10019.5	231.7	210.62	188.99	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9879.60	9931.40	1.56	1.61	8.00	0.04	0.20	0.97
LB 9931.40	9949.02	170.82	32.81	17.86	3.86	1.86	5.21
9949.02	9966.64	811.50	83.46	17.81	18.36	4.74	9.72
9966.64	9984.26	1143.54	102.10	17.62	25.87	5.80	11.20
9984.26	10001.88	1319.37	111.28	17.63	29.85	6.32	11.86
10001.88	RB 10019.50	972.98	97.41	19.96	22.01	5.53	9.99
10019.50	10024.67	0.22	0.21	0.93	0.01	0.30	1.06

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9879.60	9931.40	11.22	6.00	8.55	0.25	0.75	1.87
LB 9931.40	9949.02	221.96	42.51	17.86	5.02	2.41	5.22
9949.02	9966.64	822.40	93.16	17.81	18.61	5.29	8.83
9966.64	9984.26	1122.39	111.81	17.62	25.39	6.35	10.04
9984.26	10001.88	1279.59	120.98	17.63	28.95	6.87	10.58
10001.88	RB 10019.50	961.66	107.11	19.96	21.76	6.08	8.98
10019.50	10024.67	0.77	0.60	1.47	0.02	0.85	1.29

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.391

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9934	1682.6	9939.5	1678.8	9942.7	1677	9953.6	1671.8	9958.9	1670.8
9965.4	1668.6	9967.9	1667.7	9974	1664.7	9974.4	1664.5	9974.6	1664.4
9975.1	1664.4	9980.3	1664.2	9980.3	1664.1	9984.8	1661.8	9992.7	1657.6
9997.5	1657.5	9997.6	1657.5	9997.8	1657.5	10008.9	1658.4	10011	1658.4
10022.2	1658.6	10039	1660.8	10039.1	1660.8	10053	1662.5	10065	1664.1
10070.5	1664.9	10079.3	1666.5	10096.5	1670.2	10101.7	1670.4		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9934	.065	9980.3	.05	10039	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980.3	10039	150.26	132.55	92.06	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9964.87	9980.30	8.77	4.26	7.04	0.20	0.62	2.06
LB 9980.30	9992.04	383.36	46.25	13.35	8.67	3.94	8.29
9992.04	10003.78	1169.61	86.11	11.85	26.46	7.33	13.58
10003.78	10015.52	1003.15	78.29	11.76	22.70	6.67	12.81
10015.52	10027.26	907.49	73.79	11.78	20.53	6.28	12.30
10027.26	RB 10039.00	610.19	58.26	11.84	13.81	4.96	10.47
10039.00	10051.54	244.54	43.13	12.63	5.53	3.44	5.67
10051.54	10064.08	87.05	23.22	12.65	1.97	1.85	3.75
10064.08	10076.62	5.82	3.62	7.01	0.13	0.52	1.61

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9964.87	9980.30	14.51	5.58	7.23	0.33	0.81	2.60
LB 9980.30	9992.04	438.53	48.50	13.35	9.92	4.13	9.04
9992.04	10003.78	1290.42	88.36	11.85	29.19	7.53	14.60
10003.78	10015.52	1111.45	80.53	11.76	25.15	6.86	13.80

10015.52	10027.26	1008.32	76.04	11.78	22.81	6.48	13.26
10027.26	RB 10039.00	556.77	60.51	16.23	12.60	5.15	9.20

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.365

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9959.8	1671.3	9961.6	1670.2	9964.6	1668.2	9964.9	1668.1	9965.5	1667.8
9974.7	1663	9980.3	1660.1	9983.1	1659.3	9989.8	1657.6	9997.1	1656
10011.1	1656.5	10013.9	1656.5	10015.2	1656.5	10028.9	1658.2	10039.2	1659.2
10045.1	1659.6	10053.7	1660.1	10071.7	1662.7	10080.2	1663.8	10099.4	1666.8
10114.5	1669.3	10132.1	1669.6	10134.7	1669.7	10136.4	1669.9	10137.2	1670

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9959.8	.065	9974.7	.05	10053.7	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.7	10053.7	193.53	177.76	145.31	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.73	9974.70	0.09	0.12	0.76	0.00	0.17	0.78
LB 9974.70	9990.50	433.15	57.20	16.85	9.80	3.62	7.57
9990.50	10006.30	1331.90	109.84	15.96	30.13	6.95	12.13
10006.30	10022.10	1254.61	105.69	15.86	28.38	6.69	11.87
10022.10	10037.90	792.48	80.30	15.89	17.93	5.08	9.87
10037.90	RB 10053.70	473.64	58.88	15.83	10.72	3.73	8.04
10053.70	10074.58	133.94	36.43	21.09	3.03	1.74	3.68
10074.58	10095.45	0.20	0.30	2.16	0.00	0.14	0.68

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.73	9974.70	0.04	0.05	0.51	0.00	0.12	0.66
LB 9974.70	9990.50	444.20	55.43	16.85	10.05	3.51	8.01
9990.50	10006.30	1401.02	108.06	15.96	31.70	6.84	12.97
10006.30	10022.10	1318.29	103.91	15.86	29.83	6.58	12.69
10022.10	10037.90	825.22	78.52	15.89	18.67	4.97	10.51
10037.90	RB 10053.70	431.23	57.10	18.97	9.76	3.61	7.55

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.332

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9934.8	1668.7	9952	1658.1	9954	1657.2	9963.6	1657	9967.2	1656.9
9977	1656.2	9978.9	1655.8	9980.8	1655.6	9997.2	1652.7	10014.4	1654.5
10015.6	1654.7	10022.9	1656.8	10023.9	1657.2	10026.4	1657.6	10026.5	1657.6
10028.8	1657.7	10034.4	1658.7	10040.2	1660.2	10047.5	1661	10069.8	1664.3
10085.8	1667								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9934.8	.05	9977	.04	10026.4	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977	10026.4	244.69	243.38	239.08	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9943.24	9951.68	9.62	3.42	3.91	0.22	1.03	2.81
9951.68	9960.12	163.62	25.75	8.69	3.70	3.05	6.35
9960.12	9968.56	197.73	28.52	8.45	4.47	3.38	6.93
9968.56	9977.00	245.19	32.48	8.46	5.55	3.85	7.55
LB 9977.00	9986.88	563.10	49.24	10.03	12.74	4.98	11.43
9986.88	9996.76	921.12	66.18	10.03	20.84	6.70	13.92
9996.76	10006.64	1039.87	70.90	9.94	23.53	7.18	14.67
10006.64	10016.52	796.64	60.52	9.98	18.02	6.13	13.16

10016.52	RB 10026.40	379.83	39.22	10.25	8.59	3.97	9.68
10026.40	10046.20	103.28	23.84	15.45	2.34	1.57	4.33

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9943.24	9951.68	10.42	3.67	3.99	0.24	1.10	2.84
9951.68	9960.12	166.26	26.39	8.69	3.76	3.13	6.30
9960.12	9968.56	200.15	29.16	8.45	4.53	3.45	6.86
9968.56	9977.00	247.10	33.11	8.46	5.59	3.92	7.46
LB 9977.00	9986.88	563.38	49.98	10.03	12.75	5.06	11.27
9986.88	9996.76	915.80	66.92	10.03	20.72	6.77	13.69
9996.76	10006.64	1032.60	71.64	9.94	23.36	7.25	14.41
10006.64	10016.52	793.39	61.26	9.98	17.95	6.20	12.95
10016.52	RB 10026.40	382.42	39.96	10.25	8.65	4.04	9.57
10026.40	10046.20	108.48	24.98	15.53	2.45	1.65	4.34

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.286

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9907.5	1665.7	9946.3	1655.3	9948.1	1654.8	9949	1654.6	9950.2	1654.5
9965.2	1652.8	9967.5	1652.3	9976.2	1650.9	9983.6	1650.6	10008	1650.8
10015.9	1651	10028.4	1655.8	10031.5	1656.9	10038	1659.1	10046	1659.8
10069.4	1661.5	10084.6	1662.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9907.5	.05	9965.2	.04	10031.5	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.2	10031.5	457.57	458.3	443.95	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9930.58	9942.12	0.84	0.69	2.35	0.02	0.30	1.22
9942.12	9953.66	98.62	22.95	11.80	2.23	1.99	4.30
9953.66	9965.20	264.96	41.26	11.61	5.99	3.58	6.42
LB 9965.20	9978.46	788.97	71.49	13.43	17.85	5.39	11.04
9978.46	9991.72	1049.87	84.45	13.26	23.75	6.37	12.43
9991.72	10004.98	1033.68	83.66	13.26	23.39	6.31	12.36
10004.98	10018.24	958.00	80.33	13.43	21.67	6.06	11.93
10018.24	RB 10031.50	225.05	34.42	14.17	5.09	2.60	6.54
10031.50	10049.20	0.01	0.02	0.40	0.00	0.06	0.47

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9965.20	9978.46	733.55	77.96	18.14	16.60	5.88	9.41
9978.46	9991.72	1167.89	90.91	13.26	26.42	6.86	12.85
9991.72	10004.98	1151.18	90.12	13.26	26.04	6.80	12.77
10004.98	10018.24	1072.19	86.79	13.43	24.26	6.55	12.35
10018.24	RB 10031.50	294.95	40.88	14.17	6.67	3.08	7.21
10031.50	10049.20	0.24	0.21	0.89	0.01	0.55	1.14

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.199

INPUT

Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9971.8	1660.3	9971.9	1660.2	9981.6	1651.6	9988.6	1645.4	10006.5	1645.6
10006.7	1645.6	10007	1645.6	10028	1645.9	10036.2	1647.5	10047.4	1649.7
10047.6	1649.7	10056.5	1650	10078.8	1650.2	10099.8	1653.5	10111.4	1655.2
10122.7	1655	10137.2	1654.9	10166.1	1654.9	10182.7	1652.4	10186.9	1651.7
10188.5	1651.7	10197.2	1651.5	10220.5	1655.2	10229.2	1656.4	10242.2	1656.2
10247.9	1655.9	10258.7	1656.8	10265.1	1657.2	10266.9	1657.4	10272	1657.5
10303.1	1658.6	10310.2	1659	10335.3	1660				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9971.8	.05	9981.6	.04	10047.4	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9981.6 10047.4 516.32 511.36 470.46 .1 .3
Right Levee Station= 10137.2 Elevation= 1656.9

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9978.33	9981.60	0.04	0.05	0.45	0.00	0.15	0.73
LB 9981.60	9994.76	628.40	63.57	15.51	14.22	4.83	9.89
9994.76	10007.92	1107.13	83.61	13.16	25.05	6.35	13.24
10007.92	10021.08	1059.54	81.44	13.16	23.97	6.19	13.01
10021.08	10034.24	927.27	75.44	13.28	20.98	5.73	12.29
10034.24	RB 10047.40	402.37	45.90	13.41	9.10	3.49	8.77
10047.40	10092.30	295.27	67.82	42.33	6.68	1.61	4.35

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9978.33	9981.60	0.11	0.10	0.61	0.00	0.31	1.02
LB 9981.60	9994.76	684.79	65.73	15.51	15.49	4.99	10.42
9994.76	10007.92	1190.66	85.77	13.16	26.94	6.52	13.88
10007.92	10021.08	1140.76	83.60	13.16	25.81	6.35	13.65
10021.08	10034.24	1001.77	77.61	13.28	22.66	5.90	12.91
10034.24	RB 10047.40	401.92	48.06	15.77	9.09	3.65	8.36

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.102

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9958.4	1659	9961.6	1656.2	9972.2	1647.8	9974.9	1645.7	9981.3	1640.4
9989	1640.4	10012	1640.3	10019.1	1641.7	10024.4	1642.8	10025.5	1643
10035.8	1642.6	10054	1644.6	10054.1	1644.6	10060	1644.8	10064.1	1644.9
10082.5	1645.2	10109.7	1645.6	10116.2	1645.6	10122.3	1645.8	10125.6	1645.9
10144.3	1644.6	10146.9	1644.4	10158.2	1645.5	10164.7	1646.1	10176.2	1647.2
10191.8	1647.8	10198.3	1648	10210.3	1648.5	10224	1648.1	10238	1647.1
10241.5	1647.4	10241.6	1647.4	10264.2	1649	10267	1649	10274.4	1649.4
10292	1650.4	10321.8	1653.9	10325.2	1654.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9958.4	.05	9974.9	.04	10054.1	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9974.9 10054.1 149.41 160.74 169.93 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev
10210.3	10325.2	1651.7

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.40	9974.90	0.95	0.62	1.60	0.02	0.49	1.54
LB 9974.90	9990.74	800.82	82.57	17.75	18.12	5.21	9.70
9990.74	10006.58	1192.52	100.19	15.84	26.98	6.33	11.90
10006.58	10022.42	993.88	90.28	16.05	22.49	5.70	11.01

10022.42	10038.26	533.55	61.97	15.92	12.07	3.91	8.61
10038.26	RB 10054.10	331.78	46.61	15.93	7.51	2.94	7.12
10054.10	10080.13	183.11	45.71	26.04	4.14	1.76	4.01
10080.13	10106.17	114.80	34.54	26.04	2.60	1.33	3.32
10106.17	10132.20	73.27	26.39	26.05	1.66	1.01	2.78
10132.20	10158.23	180.78	45.42	26.12	4.09	1.74	3.98
10158.23	10184.27	14.53	7.48	12.62	0.33	0.60	1.94

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.40	9974.90	0.94	0.59	1.56	0.02	0.48	1.61
LB 9974.90	9990.74	845.55	82.14	17.75	19.13	5.19	10.29
9990.74	10006.58	1261.07	99.76	15.84	28.53	6.30	12.64
10006.58	10022.42	1050.19	89.85	16.05	23.76	5.67	11.69
10022.42	10038.26	561.72	61.54	15.92	12.71	3.88	9.13
10038.26	RB 10054.10	347.96	46.18	15.93	7.87	2.92	7.53
10054.10	10080.13	194.73	45.00	26.04	4.41	1.73	4.33
10080.13	10106.17	121.05	33.83	26.04	2.74	1.30	3.58
10106.17	10132.20	36.78	12.44	12.74	0.83	1.06	2.96

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.072

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9842.2	1650	9851.2	1647.8	9855	1647.1	9856.2	1647.1	9867.1	1646.7
9869.1	1646.5	9869.2	1646.5	9876.3	1646.4	9883.1	1646	9889.3	1645
9893.5	1644.6	9897.4	1644.2	9915	1644.2	9928.9	1644.4	9935.4	1644.5
9938.8	1644	9949	1642.5	9965	1640.3	9967.4	1639.7	9980.5	1640
9982.7	1640	9992.6	1639.7	10019.7	1638.7	10029	1640.2	10031	1640.5
10037.6	1642	10042.3	1643	10042.4	1643.1	10043.6	1643.1	10045.1	1643.1
10060.1	1643.2	10072.6	1643.7	10083.6	1644.6	10087	1644.6	10092.4	1643.5
10096.1	1642.6	10097	1642.5	10105.7	1643.3	10109.6	1643.6	10115.4	1643.8
10132.3	1644.2	10136.6	1644.7	10144.8	1645.4	10154.1	1645.2	10163.9	1645
10180.8	1645.3	10202.1	1646	10203.7	1646.1	10204.3	1646.1	10206.8	1646.2
10228.3	1647.2	10233.8	1647.3	10249.1	1648	10262.8	1648.3	10269.3	1648.5
10290.4	1649.3	10301.8	1649.5	10304.4	1651.1				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9842.2	.05	9938.8	.04	10042.3	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9938.8 10042.3 198.08 311.7 344.2 .3 .5
Ineffective Flow num= 1

Sta L	Sta R	Elev
9842.2	9938.8	1649.8

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9874.40	9906.60	0.00	8.19	15.84	0.00	0.52	0.00
9906.60	9938.80	0.00	18.01	32.24	0.00	0.56	0.00
LB 9938.80	9959.50	273.78	48.74	20.91	6.19	2.35	5.62
9959.50	9980.20	891.02	98.80	20.83	20.16	4.77	9.02
9980.20	10000.90	1002.68	105.81	20.71	22.69	5.11	9.48
10000.90	10021.60	1247.02	120.66	20.74	28.21	5.83	10.33
10021.60	RB 10042.30	658.27	82.80	21.09	14.89	4.00	7.95
10042.30	10094.72	199.01	64.99	52.69	4.50	1.24	3.06
10094.72	10147.14	148.22	50.61	43.87	3.35	1.16	2.93

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9938.80	9959.50	294.92	53.39	21.99	6.67	2.58	5.52
9959.50	9980.20	920.82	103.45	20.83	20.83	5.00	8.90
9980.20	10000.90	1031.08	110.45	20.71	23.33	5.34	9.33
10000.90	10021.60	1271.28	125.31	20.74	28.76	6.05	10.15
10021.60	RB 10042.30	690.15	87.45	21.09	15.61	4.22	7.89
10042.30	10094.72	211.75	58.04	33.95	4.79	1.77	3.65

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.013

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9697	1649.4	9700.3	1648.2	9711.7	1644	9719.6	1643.3	9729	1642.5
9731.4	1642.5	9743.7	1642.1	9757.3	1641.8	9772.4	1642	9783.2	1642.1
9795.5	1642.2	9827.7	1642.1	9838.7	1641.6	9843	1641.4	9861.9	1640.8
9870.8	1640	9879.8	1639.3	9892.7	1640	9903.4	1640.6	9909	1640.4
9924.3	1640.5	9930.2	1640.6	9930.3	1640.6	9934.2	1639.8	9947.4	1636.9
9954	1636.9	9964.7	1636.1	9974.4	1637.9	9976.7	1638.3	9977.5	1638.2
9980	1637.3	9986.6	1635	9989.7	1634.9	9992.9	1634.8	10007.3	1634.3
10017.3	1641.1	10020.9	1643.5	10042.9	1658.3	10044.1	1660.8		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9697	.05	9930.2	.04	10017.3	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930.2	10017.3	240.45	270.83	270.31	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9836.92	9883.56	106.12	35.96	39.15	2.40	0.92	2.95
9883.56	9930.20	159.32	49.22	46.67	3.60	1.06	3.24
LB 9930.20	9947.62	315.95	45.19	17.82	7.15	2.59	6.99
9947.62	9965.04	866.60	82.11	17.46	19.61	4.71	10.55
9965.04	9982.46	659.55	70.44	17.92	14.92	4.04	9.36
9982.46	9999.88	1411.15	110.56	17.67	31.93	6.35	12.76
9999.88	RB 10017.30	901.27	87.90	19.52	20.39	5.05	10.25
10017.30	10026.23	0.03	0.05	0.46	0.00	0.13	0.70

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9883.56	9930.20	123.27	39.91	43.81	2.79	0.95	3.09
LB 9930.20	9947.62	322.98	44.51	17.82	7.31	2.55	7.26
9947.62	9965.04	896.09	81.43	17.46	20.27	4.67	11.00
9965.04	9982.46	680.42	69.76	17.92	15.39	4.00	9.75
9982.46	9999.88	1464.42	109.87	17.67	33.13	6.31	13.33
9999.88	RB 10017.30	932.79	87.22	19.52	21.10	5.01	10.69
10017.30	10026.23	0.02	0.03	0.38	0.00	0.11	0.66

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.961

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9728.4	1649.8	9747.1	1642.1	9751.6	1640.3	9752.1	1640.3	9797.8	1638.5
9819.7	1638.4	9837.3	1638.5	9845.8	1638.3	9928	1635.7	9928.1	1635.7

9929.1	1635.6	9930.1	1635.6	9932.2	1635.5	9936.8	1635	9959.1	1633
9968.7	1632.3	9978.1	1631.7	9986.5	1631.7	9989.4	1631.8	10001.7	1631.7
10001.8	1631.7	10002.4	1631.8	10025.2	1637.5	10034.8	1639.9	10037	1639.9
10049.2	1642.1	10053.4	1642.9	10059.7	1643.4	10074.4	1644.3	10099.2	1646.2
10113.1	1648.8	10116.1	1649.6	10119.9	1650.6				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9728.4	.05	9928.1	.04	10025.2	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9928.1	10025.2	211.31	203.9	177.64	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9848.22	9888.16	12.77	9.12	24.02	0.29	0.38	1.40
9888.16	9928.10	185.01	55.56	39.96	4.19	1.39	3.33
LB 9928.10	9947.52	385.80	54.41	19.50	8.73	2.80	7.09
9947.52	9966.94	858.07	87.88	19.49	19.41	4.53	9.76
9966.94	9986.36	1304.97	112.91	19.44	29.52	5.81	11.56
9986.36	10005.78	1328.49	114.34	19.53	30.06	5.89	11.62
10005.78	RB 10025.20	344.83	51.40	20.02	7.80	2.65	6.71
10025.20	10056.77	0.07	0.10	0.90	0.00	0.11	0.68

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9928.10	9947.52	378.36	53.91	21.49	8.56	2.78	7.02
9947.52	9966.94	903.19	87.38	19.49	20.43	4.50	10.34
9966.94	9986.36	1376.47	112.42	19.44	31.14	5.79	12.24
9986.36	10005.78	1401.41	113.85	19.53	31.71	5.86	12.31
10005.78	RB 10025.20	360.53	50.91	20.02	8.16	2.62	7.08
10025.20	10056.77	0.05	0.08	0.80	0.00	0.10	0.67

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.923

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9914.4	1641.5	9929.8	1635.3	9935.5	1635	9939.9	1634.9	9961.3	1635.6
9967.6	1635.8	9968.8	1635.5	9968.9	1635.4	9993.6	1629.3	10000.5	1629.1
10009	1629	10025.9	1629.7	10029	1629.9	10030.7	1630.1	10032	1630.3
10036.6	1631	10047.1	1632.4	10052.1	1632.3	10054.7	1632.2	10060.6	1633.5
10067.7	1635.2	10072.5	1636.3	10077.3	1636.7	10124.7	1636.5	10127.6	1636.5
10135.6	1637.9	10155.6	1641.5	10157.6	1641.8	10158.1	1641.8	10167.6	1645.2
10171.1	1646.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9914.4	.05	9968.9	.04	10067.7	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.9	10067.7	252.21	254.81	248.59	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9925.30	9936.20	8.76	4.85	7.84	0.20	0.63	1.81
9936.20	9947.10	20.40	9.19	10.91	0.46	0.84	2.22
9947.10	9958.00	9.15	5.68	10.91	0.21	0.52	1.61
9958.00	9968.90	1.69	2.06	10.98	0.04	0.19	0.82
LB 9968.90	9988.66	363.99	56.81	20.35	8.24	2.88	6.41
9988.66	10008.42	1444.46	128.76	19.91	32.68	6.52	11.22
10008.42	10028.18	1425.11	127.38	19.78	32.24	6.45	11.19
10028.18	10047.94	828.58	92.29	19.93	18.75	4.67	8.98
10047.94	RB 10067.70	316.74	52.01	20.10	7.17	2.63	6.09
10067.70	10102.17	1.12	0.88	2.84	0.03	0.32	1.27

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9968.90	9988.66	386.28	63.10	21.11	8.74	3.19	6.12
9988.66	10008.42	1427.43	135.05	19.91	32.29	6.83	10.57
10008.42	10028.18	1409.50	133.67	19.78	31.89	6.76	10.54

10028.18	10047.94	844.08	98.58	19.93	19.10	4.99	8.56
10047.94	RB 10067.70	349.69	58.30	20.10	7.91	2.95	6.00
10067.70	10102.17	3.01	1.76	3.16	0.07	0.64	1.71

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.874

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9932	1644	9932.6	1643.9	9950	1642.5	9957.7	1639.1	9970.4	1633.8
9987.7	1626.7	9998.9	1626.8	10001.4	1626.8	10002.6	1626.9	10019.1	1627.8
10031.5	1629.9	10036.2	1630.7	10040.6	1630.7	10042.4	1630.7	10045.1	1630.9
10064.4	1632.2	10066.3	1632.3	10099.3	1633	10100.2	1633	10102.7	1633.1
10110.2	1633	10132	1632.7	10139.7	1632.2	10142	1632.2	10155.7	1632.3
10156.9	1632.3	10157.2	1632.2	10162.4	1631.6	10168	1630.8	10168.5	1630.8
10168.9	1630.8	10171.2	1631.7	10210.2	1645.8	10214.8	1647.5	10216.6	1648.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9932	.05	9970.4	.04	10099.3	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970.4	10099.3	238.62	262.62	242.22	.6	.8

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.60	9970.40	0.49	0.50	1.67	0.01	0.32	0.98
LB 9970.40	9996.18	1003.20	137.89	27.18	22.70	5.35	7.28
9996.18	10021.96	1683.64	184.39	25.85	38.09	7.15	9.13
10021.96	10047.74	738.26	112.69	26.00	16.70	4.37	6.55
10047.74	10073.52	302.59	65.81	25.82	6.85	2.55	4.60
10073.52	RB 10099.30	156.36	44.26	25.79	3.54	1.72	3.53
10099.30	10122.76	95.00	34.45	23.46	2.15	1.47	2.76
10122.76	10146.22	150.62	45.44	23.48	3.41	1.94	3.32
10146.22	10169.68	246.88	61.27	23.63	5.59	2.61	4.03
10169.68	10193.14	42.97	15.03	9.70	0.97	1.65	2.86

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.60	9970.40	0.28	0.29	1.27	0.01	0.24	0.99
LB 9970.40	9996.18	1148.61	133.91	27.18	25.99	5.19	8.58
9996.18	10021.96	1951.84	180.40	25.85	44.16	7.00	10.82
10021.96	10047.74	835.91	108.71	26.00	18.91	4.22	7.69
10047.74	10073.52	327.84	61.83	25.82	7.42	2.40	5.30
10073.52	RB 10099.30	155.50	40.28	27.08	3.52	1.56	3.86

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.825

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9914.1	1637.2	9920.9	1636.2	9927.1	1635.7	9937.1	1634.2	9947.7	1630
9956.5	1627.4	9957.8	1626.9	9968	1624.5	9970.6	1623.9	9972.6	1623.8
9984.1	1623.8	9988.4	1622.7	9991.9	1621.5	10001	1622.2	10006.9	1622.6
10007.5	1622.6	10013.2	1627.1	10017.1	1630	10025.1	1636.1	10033.2	1638.3
10033.4	1638.4	10033.6	1638.4	10034.1	1638.6	10049.8	1644.3		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9914.1	.05	9984.1	.04	10017.1	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.1	10017.1	304.35	286.56	267.43	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9942.10	9956.10	57.14	16.58	10.57	1.29	1.64	3.45
9956.10	9970.10	511.36	69.96	14.44	11.57	5.00	7.31
9970.10	9984.10	883.12	95.95	14.02	19.98	6.85	9.20

LB 9984.10	9990.70	644.23	51.11	6.87	14.58	7.74	12.60
9990.70	9997.30	836.37	59.13	6.69	18.92	8.96	14.14
9997.30	10003.90	771.68	56.12	6.62	17.46	8.50	13.75
10003.90	10010.50	589.26	49.99	7.43	13.33	7.57	11.79
10010.50	RB 10017.10	126.49	20.76	8.30	2.86	3.15	6.09
10017.10	10028.00	0.34	0.29	1.10	0.01	0.33	1.17

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9942.10	9956.10	56.02	16.24	10.48	1.27	1.62	3.45
9956.10	9970.10	509.97	69.50	14.44	11.54	4.96	7.34
9970.10	9984.10	883.38	95.48	14.02	19.99	6.82	9.25
LB 9984.10	9990.70	644.75	50.89	6.87	14.59	7.71	12.67
9990.70	9997.30	837.87	58.91	6.69	18.96	8.93	14.22
9997.30	10003.90	772.81	55.90	6.62	17.48	8.47	13.83
10003.90	10010.50	589.65	49.77	7.43	13.34	7.54	11.85
10010.50	RB 10017.10	125.26	20.54	8.30	2.83	3.11	6.10
10017.10	10028.00	0.30	0.26	1.04	0.01	0.32	1.14

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.770

INPUT
Description:
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9961	1635.4	9961.3	1635.4	9967.7	1634.7	9970.8	1634.4	9973.2	1632
9978.3	1625.4	9984.1	1618.1	10012.9	1618.9	10017.1	1618.9	10026.8	1625.3
10037.3	1632.2	10052.5	1641.4	10057.1	1643				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9961	.05	9978.3	.04	10026.8	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.3	10026.8	222.13	242.29	234.28	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9972.53	9978.30	0.16	0.14	0.75	0.00	0.30	1.15
LB 9978.30	9988.00	606.69	55.17	13.23	13.73	5.69	11.00
9988.00	9997.70	1221.93	74.19	9.70	27.65	7.65	16.47
9997.70	10007.40	1150.92	71.57	9.70	26.04	7.38	16.08
10007.40	10017.10	1088.38	69.21	9.70	24.62	7.13	15.73
10017.10	RB 10026.80	351.35	37.75	11.62	7.95	3.89	9.31
10026.80	10036.90	0.57	0.36	1.26	0.01	0.35	1.57

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9972.53	9978.30	0.19	0.16	0.79	0.00	0.34	1.20
LB 9978.30	9988.00	607.84	55.62	13.23	13.75	5.73	10.93
9988.00	9997.70	1220.04	74.64	9.70	27.60	7.69	16.35
9997.70	10007.40	1149.57	72.02	9.70	26.01	7.43	15.96
10007.40	10017.10	1087.48	69.66	9.70	24.60	7.18	15.61
10017.10	RB 10026.80	354.20	38.20	11.62	8.01	3.94	9.27
10026.80	10036.90	0.68	0.41	1.30	0.02	0.39	1.65

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross

section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.725

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9871.9	1627	9891.9	1627.1	9898.3	1626.6	9904.4	1626.2	9910.1	1625.5
9917.5	1623.4	9940.5	1617.4	9949	1617.3	9953.8	1617	9958.7	1617.7
9966.2	1618.5	9967.3	1618.5	9969.7	1618.4	9992.7	1617.6	10000	1617.1
10013.8	1616.2	10015.1	1616.1	10016	1616.9	10017	1617.3	10022.8	1621.5
10041	1634.5	10043.6	1635.8	10044.3	1636.5	10049.4	1639.7	10050.3	1640.3
10054.2	1640.6	10056.4	1640.8						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9871.9	.065	9969.7	.05	10022.8	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969.7	10022.8	96.81	141.11	161.48	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9911.02	9930.58	31.95	9.39	8.77	0.72	1.11	3.40
9930.58	9950.14	680.61	81.65	19.90	15.40	4.17	8.34
9950.14	9969.70	751.07	86.21	19.66	16.99	4.41	8.71
LB 9969.70	9980.32	473.57	42.33	10.63	10.71	3.99	11.19
9980.32	9990.94	548.97	46.25	10.63	12.42	4.35	11.87
9990.94	10001.56	655.87	51.49	10.64	14.84	4.85	12.74
10001.56	10012.18	821.26	58.93	10.64	18.58	5.55	13.94
10012.18	RB 10022.80	456.18	43.98	12.37	10.32	4.14	10.37
10022.80	10034.00	0.52	0.34	1.21	0.01	0.35	1.50

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9911.02	9930.58	32.01	9.40	8.77	0.72	1.11	3.40
9930.58	9950.14	680.66	81.68	19.90	15.40	4.18	8.33
9950.14	9969.70	751.10	86.25	19.66	16.99	4.41	8.71
LB 9969.70	9980.32	473.59	42.34	10.63	10.71	3.99	11.18
9980.32	9990.94	548.97	46.27	10.63	12.42	4.36	11.86
9990.94	10001.56	655.82	51.51	10.64	14.84	4.85	12.73
10001.56	10012.18	821.14	58.95	10.64	18.58	5.55	13.93
10012.18	RB 10022.80	456.19	44.00	12.37	10.32	4.14	10.37
10022.80	10034.00	0.52	0.35	1.21	0.01	0.35	1.51

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.698

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9802.9	1626.5	9812.7	1626.1	9816.4	1626	9817.9	1625.9	9850.7	1623.2
9854.7	1622.8	9864.8	1622	9875.8	1617.5	9885.5	1613.7	9895	1614.2
9918.4	1616.6	9920.2	1616.9	9921.6	1617	9924.5	1616.9	9931.8	1616.9
9953.3	1618.6	9954.6	1618.7	9955.4	1618.8	9962	1618.6	9962.1	1618.6
9976.9	1617.4	9985.5	1616.7	9994.1	1615.7	10004.4	1614	10005.5	1613.9
10006.8	1613.7	10007.8	1613.7	10010.6	1619.9	10018.5	1637	10029.9	1659.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9802.9	.065	9962	.05	10010.6	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9962	10010.6	66.46	199.98	211.64	.6	.8

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9834.72	9866.54	0.10	0.17	0.99	0.00	0.19	0.59
9866.54	9898.36	1028.11	177.54	33.31	23.26	5.58	5.79
9898.36	9930.18	1063.25	178.17	31.95	24.06	5.60	5.97
9930.18	9962.00	532.62	117.60	31.90	12.05	3.70	4.53
LB 9962.00	9971.72	188.87	33.51	9.75	4.27	3.45	5.64
9971.72	9981.44	266.21	41.17	9.75	6.02	4.24	6.47
9981.44	9991.16	360.43	49.42	9.77	8.15	5.08	7.29
9991.16	10000.88	513.14	61.23	9.83	11.61	6.30	8.38
10000.88	RB 10010.60	466.56	66.22	13.79	10.56	6.81	7.05
10010.60	10017.03	0.72	0.72	1.94	0.02	0.88	1.00

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9834.72	9866.54	0.10	0.17	0.99	0.00	0.19	0.59
9866.54	9898.36	1028.04	177.63	33.31	23.26	5.58	5.79
9898.36	9930.18	1063.17	178.26	31.95	24.05	5.60	5.96
9930.18	9962.00	532.81	117.69	31.90	12.05	3.70	4.53
LB 9962.00	9971.72	188.96	33.53	9.75	4.28	3.45	5.63
9971.72	9981.44	266.26	41.20	9.75	6.02	4.24	6.46
9981.44	9991.16	360.44	49.45	9.77	8.15	5.09	7.29
9991.16	10000.88	513.05	61.26	9.83	11.61	6.30	8.37
10000.88	RB 10010.60	466.45	66.25	13.79	10.55	6.82	7.04
10010.60	10017.03	0.72	0.72	1.94	0.02	0.89	1.00

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.660

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9910	1624.1	9914.2	1623.7	9920.2	1623.2	9930.3	1622.8	9933.4	1622.2
9934.1	1622.1	9935	1621.9	9941	1620.7	9954.9	1617.7	9960.7	1615.8
9967.1	1613.8	9971.7	1612.3	9972.2	1612.1	9975.8	1610.8	9983.9	1609.8
9984.3	1609.8	9985	1609.8	9999.8	1610.2	10011.2	1610.3	10015.4	1610.3
10016.6	1616.6	10017.1	1618.7	10021.7	1639				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9910	.065	9954.9	.05	10017.1	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9954.9	10017.1	80.74	88.02	87.39	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9939.93	9954.90	8.83	5.28	7.16	0.20	0.76	1.67
LB 9954.90	9967.34	246.10	43.80	13.06	5.57	3.52	5.62
9967.34	9979.78	866.39	92.92	12.96	19.60	7.47	9.32
9979.78	9992.22	1273.66	115.31	12.47	28.82	9.27	11.05
9992.22	10004.66	1229.19	112.76	12.44	27.81	9.06	10.90
10004.66	RB 10017.10	795.82	103.57	19.31	18.00	8.33	7.68
10017.10	10018.63	0.01	0.03	0.52	0.00	0.26	0.30

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9939.93	9954.90	8.64	5.19	7.09	0.20	0.75	1.67
LB 9954.90	9967.34	245.20	43.63	13.06	5.55	3.51	5.62
9967.34	9979.78	866.26	92.75	12.96	19.60	7.46	9.34
9979.78	9992.22	1274.25	115.13	12.47	28.83	9.26	11.07
9992.22	10004.66	1229.69	112.59	12.44	27.82	9.05	10.92
10004.66	RB 10017.10	795.96	103.40	19.31	18.01	8.31	7.70
10017.10	10018.63	0.01	0.03	0.51	0.00	0.25	0.30

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.643

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9927.9	1630.3	9934.4	1626.2	9950.7	1616.7	9952	1615.8	9952.9	1615.4
9958	1614.8	9969.3	1613.4	9970.4	1613.1	9975	1612.1	9985	1609.8
9986.7	1609.5	9991	1609.5	10014.3	1609.4	10019.6	1616.3	10023.3	1621.2
10025	1623	10026.9	1625.3	10028.5	1625.8	10034.3	1627.2	10036.6	1629.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9927.9	.065	9969.3	.05	10019.6	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969.3	10019.6	168.31	131.19	100.41	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9941.70	9955.50	17.64	5.62	5.30	0.40	1.15	3.14
9955.50	9969.30	190.89	34.54	13.90	4.32	2.50	5.53
LB 9969.30	9979.36	487.98	45.46	10.32	11.04	4.52	10.73
9979.36	9989.42	945.93	67.39	10.23	21.40	6.70	14.04
9989.42	9999.48	1096.82	73.15	10.06	24.82	7.27	14.99
9999.48	10009.54	1107.67	73.58	10.06	25.06	7.31	15.05
10009.54	RB 10019.60	572.98	55.67	13.46	12.96	5.53	10.29
10019.60	10025.27	0.07	0.08	0.57	0.00	0.23	0.84

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9941.70	9955.50	18.31	5.80	5.33	0.41	1.18	3.16
9955.50	9969.30	193.61	35.03	13.90	4.38	2.54	5.53
LB 9969.30	9979.36	489.51	45.82	10.32	11.07	4.56	10.68
9979.36	9989.42	944.82	67.76	10.23	21.38	6.73	13.94
9989.42	9999.48	1094.76	73.51	10.06	24.77	7.31	14.89
9999.48	10009.54	1105.53	73.95	10.06	25.01	7.35	14.95
10009.54	RB 10019.60	573.38	56.03	13.46	12.97	5.57	10.23
10019.60	10025.27	0.08	0.09	0.61	0.00	0.27	0.89

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.618

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9888.6	1630.1	9904.2	1625.6	9912.9	1623.4	9920.2	1621.4	9922.1	1620.8
9923.7	1620	9927.1	1619.2	9931.5	1619.5	9950.4	1617.9	9954.1	1617.8
9955	1617.8	9957.6	1617	9965.5	1614.7	9973.8	1613.1	9987.3	1611.1
9987.3	1611	9988.2	1610.6	9988.9	1610.3	9995.9	1606.7	9998.7	1605.3
10000.5	1605.5	10016.9	1607	10017.5	1607.1	10028.8	1610.2	10028.9	1610.2
10038.3	1612.2	10046.1	1613.9	10048.1	1614.2	10055.6	1615.3	10063.7	1616
10069.4	1617.3	10077	1621	10092.9	1627.8	10095.6	1628.8	10097.4	1630.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9888.6	.05	9987.3	.04	10028.9	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.3	10028.9	152.72	148.63	121.12	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9954.40	9987.30	178.16	39.88	21.64	4.03	1.87	4.47
LB 9987.30	9995.62	496.44	46.95	9.40	11.23	5.64	10.57
9995.62	10003.94	1107.99	73.71	8.71	25.07	8.86	15.03
10003.94	10012.26	1046.27	70.04	8.35	23.67	8.42	14.94
10012.26	10020.58	862.52	62.69	8.46	19.51	7.54	13.76
10020.58	RB 10028.90	508.19	45.99	8.62	11.50	5.53	11.05
10028.90	10051.73	220.44	46.00	22.47	4.99	2.09	4.79

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9954.40	9987.30	195.36	43.50	21.81	4.42	2.04	4.49
LB 9987.30	9995.62	497.84	48.36	9.40	11.26	5.81	10.29
9995.62	10003.94	1091.56	75.12	8.71	24.70	9.03	14.53
10003.94	10012.26	1032.45	71.45	8.35	23.36	8.59	14.45
10012.26	10020.58	854.41	64.11	8.46	19.33	7.70	13.33
10020.58	RB 10028.90	510.14	47.40	8.62	11.54	5.70	10.76
10028.90	10051.73	238.23	49.73	22.64	5.39	2.26	4.79

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.590

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9929.8	1618.2	9932	1618	9945.2	1617.4	9946.7	1617.2	9948.5	1616.6
9961.8	1611.1	9964.2	1610	9981.6	1605.5	9995.5	1602.9	9997.1	1602.9
10001.7	1603.7	10003.8	1604.1	10008.1	1603.8	10012.7	1603.1	10017.3	1603.4
10020.1	1603.6	10023.4	1604.4	10029.5	1605.4	10031.6	1605.7	10032.2	1605.9
10034.3	1606.7	10035.4	1607.2	10041.9	1610.1	10048.2	1613	10048.4	1612.9
10049.5	1611.9	10053.8	1607.3	10059.3	1609.3	10069.1	1612.4	10084	1615.7
10087.3	1616.2	10090.5	1615.7	10097.6	1618.1	10101.9	1619.8		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9929.8	.05	9964.2	.04	10041.9	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9964.2	10041.9	358.04	352.63	336.26	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9952.73	9964.20	3.20	1.97	3.27	0.07	0.66	1.62
LB 9964.20	9979.74	307.28	52.08	16.05	6.95	3.35	5.90
9979.74	9995.28	1042.86	107.84	15.84	23.59	6.94	9.67
9995.28	10010.82	1268.57	120.84	15.69	28.70	7.78	10.50
10010.82	10026.36	1226.12	118.46	15.71	27.74	7.62	10.35
10026.36	RB 10041.90	468.87	67.87	16.51	10.61	4.37	6.91
10041.90	10061.90	99.43	30.28	17.08	2.25	2.08	3.28
10061.90	10081.90	3.67	2.35	4.04	0.08	0.61	1.56

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9952.73	9964.20	3.19	1.97	3.27	0.07	0.66	1.62
LB 9964.20	9979.74	307.21	52.07	16.05	6.95	3.35	5.90
9979.74	9995.28	1042.89	107.82	15.84	23.59	6.94	9.67
9995.28	10010.82	1268.64	120.83	15.69	28.70	7.78	10.50
10010.82	10026.36	1226.18	118.45	15.71	27.74	7.62	10.35
10026.36	RB 10041.90	468.82	67.85	16.51	10.61	4.37	6.91
10041.90	10061.90	99.40	30.27	17.08	2.25	2.08	3.28
10061.90	10081.90	3.66	2.35	4.04	0.08	0.61	1.56

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.523

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9914	1624.2	9921	1620.4	9927	1617.7	9949.8	1606.8	9950.4	1606.8
9960.2	1607.5	9963.2	1606.4	9971.6	1603.2	9981.1	1600.2	9986.5	1600.1
10002.2	1599.7	10009.8	1599.9	10030.2	1606.4	10059.5	1615.7	10061.9	1616.3
10062.2	1616.5	10071.1	1618.9						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9914	.05	9963.2	.04	10030.2	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9963.2	10030.2	527.2	513.31	482.71	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9946.80	9963.20	0.60	0.54	4.00	0.01	0.14	1.11
LB 9963.20	9976.60	325.67	40.31	14.23	7.37	3.01	8.08
9976.60	9990.00	1222.22	87.57	13.62	27.65	6.54	13.96
9990.00	10003.40	1409.46	94.78	13.40	31.89	7.07	14.87
10003.40	10016.80	1195.54	86.74	13.75	27.05	6.47	13.78
10016.80	RB 10030.20	265.94	35.52	14.06	6.02	2.65	7.49
10030.20	10043.83	0.58	0.42	1.71	0.01	0.26	1.38

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9946.80	9963.20	0.61	0.55	4.02	0.01	0.14	1.11
LB 9963.20	9976.60	325.80	40.33	14.23	7.37	3.01	8.08
9976.60	9990.00	1222.14	87.59	13.62	27.65	6.54	13.95
9990.00	10003.40	1409.33	94.80	13.40	31.89	7.07	14.87
10003.40	10016.80	1195.47	86.76	13.75	27.05	6.48	13.78
10016.80	RB 10030.20	266.07	35.54	14.06	6.02	2.65	7.49
10030.20	10043.83	0.58	0.42	1.71	0.01	0.26	1.38

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.426

INPUT

Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9862.4	1620	9882.9	1615.5	9883	1615.5	9898	1611.1	9906.6	1609
9915.3	1609.3	9916.9	1609.3	9919.6	1607.9	9938.4	1599.8	9946.5	1596.4
9970.5	1594.7	9972.1	1594.6	9973.5	1594.5	9976	1594.5	9981.3	1594.6
9982.9	1594.2	9985.8	1593.3	9993.4	1593.3	10012.8	1593.3	10020.3	1596.1
10023.2	1597.1	10024	1597.3	10032.9	1598.6	10039.2	1599.5	10039.3	1599.5
10046.6	1601	10049.9	1601.4	10062.1	1601.5	10070.1	1603.9	10078.6	1606.5
10083	1607.9	10089.2	1609.9	10090.7	1610.2				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9862.4	.05	9938.4	.04	10039.3	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9938.4	10039.3	569.9	607.44	596.34	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9913.07	9938.40	0.46	0.44	1.56	0.01	0.31	1.04
LB 9938.40	9958.58	466.10	72.48	20.89	10.55	3.59	6.43
9958.58	9978.76	978.55	111.63	20.22	22.14	5.53	8.77
9978.76	9998.94	1375.57	137.34	20.37	31.12	6.81	10.02
9998.94	10019.12	1345.80	136.19	20.61	30.45	6.75	9.88
10019.12	RB 10039.30	250.63	49.68	20.61	5.67	2.46	5.04
10039.30	10056.43	2.89	2.05	4.56	0.07	0.46	1.41

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9913.07	9938.40	0.43	0.42	1.52	0.01	0.30	1.03
LB 9938.40	9958.58	465.03	72.19	20.89	10.52	3.58	6.44
9958.58	9978.76	978.64	111.33	20.22	22.14	5.52	8.79
9978.76	9998.94	1376.84	137.05	20.37	31.15	6.79	10.05
9998.94	10019.12	1347.00	135.89	20.61	30.48	6.73	9.91
10019.12	RB 10039.30	249.27	49.39	20.61	5.64	2.45	5.05
10039.30	10056.43	2.78	1.99	4.49	0.06	0.45	1.40

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.311

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9944.6	1602.5	9945.1	1602.4	9946.5	1602	9946.9	1601.9	9963.1	1595.7
9966.7	1593.2	9968.5	1592.4	9978.5	1587.7	9980.3	1587.3	9984.7	1585.7
9989.9	1585.6	10015	1585.1	10020.6	1590	10022.3	1592.5	10022.9	1593.4
10034.8	1595.4	10039	1596.3	10040.1	1596.4	10041.4	1596.6	10041.7	1596.6

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9944.6	.05	9968.5	.04	10022.3	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.5	10022.3	507.25	528.62	503.17	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9960.53	9968.50	0.17	0.15	0.91	0.00	0.18	1.09
LB 9968.50	9979.26	247.41	31.10	11.83	5.60	2.89	7.96
9979.26	9990.02	1024.27	71.02	11.07	23.17	6.60	14.42
9990.02	10000.78	1228.20	78.31	10.76	27.79	7.28	15.68
10000.78	10011.54	1288.97	80.61	10.76	29.16	7.49	15.99
10011.54	RB 10022.30	630.97	58.21	13.92	14.28	5.41	10.84
10022.30	10028.77	0.02	0.02	0.32	0.00	0.13	0.63

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross

section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9960.53	9968.50	0.21	0.18	0.94	0.00	0.21	1.16
LB 9968.50	9979.26	249.70	31.42	11.83	5.65	2.92	7.95
9979.26	9990.02	1023.93	71.34	11.07	23.17	6.63	14.35
9990.02	10000.78	1226.95	78.63	10.76	27.76	7.31	15.60
10000.78	10011.54	1287.40	80.93	10.76	29.13	7.52	15.91
10011.54	RB 10022.30	631.80	58.53	13.92	14.29	5.44	10.79
10022.30	10028.77	0.02	0.03	0.35	0.00	0.16	0.67

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.211

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9911.6	1592.1	9916.1	1591	9926.3	1588.6	9932.2	1587.9	9943.7	1585.2		
9952.4	1582.7	9952.5	1582.6	9957.5	1582	9959.5	1581.9	9964.4	1580.6		
9972.8	1578.4	9980.4	1578.4	9986.9	1578.4	9990.3	1578.2	9992.8	1578		
10002.2	1577.8	10009.4	1577.8	10011.1	1578.1	10026.5	1583	10026.6	1583		
10036	1582.8	10050.7	1582.4	10081.4	1593.9						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9911.6	.05	9959.5	.04	10026.6	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9959.5	10026.6	469.7	470.77	468.4	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9943.53	9959.50	102.76	26.11	14.79	2.32	1.81	3.94
LB 9959.50	9972.92	560.91	62.71	13.87	12.69	4.67	8.95
9972.92	9986.34	969.17	85.91	13.42	21.93	6.40	11.28
9986.34	9999.76	1052.30	90.30	13.44	23.81	6.73	11.65
9999.76	10013.18	1085.91	92.33	13.55	24.57	6.88	11.76
10013.18	RB 10026.60	411.88	52.41	14.08	9.32	3.91	7.86
10026.60	10040.30	108.38	26.74	13.70	2.45	1.95	4.05
10040.30	10054.00	125.56	29.39	13.93	2.84	2.15	4.27
10054.00	10067.70	3.14	1.81	3.32	0.07	0.58	1.73

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9943.53	9959.50	113.05	26.70	14.83	2.56	1.85	4.23
LB 9959.50	9972.92	598.66	63.25	13.87	13.54	4.71	9.46
9972.92	9986.34	1030.36	86.46	13.42	23.31	6.44	11.92
9986.34	9999.76	1118.16	90.85	13.44	25.30	6.77	12.31
9999.76	10013.18	1153.62	92.88	13.55	26.10	6.92	12.42
10013.18	RB 10026.60	406.14	52.96	15.92	9.19	3.95	7.67

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.122

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9905.7	1593.3	9908.7	1593.1	9909.2	1592.8	9913.4	1591	9942.4	1578.3
9957	1577.2	9958.7	1577	9958.8	1577	9961.9	1576.4	9972.2	1574.3
9989	1574.2	10005.3	1574.1	10014.4	1578.6	10018.1	1580.3	10028.9	1580.7
10032	1580.8	10041.8	1581.5	10049	1582.2	10065.2	1583.5	10078.6	1587.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9905.7	.05	9958.8	.04	10018.1	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9958.8	10018.1	373.92	363.26	323.58	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9923.40	9941.10	41.53	17.07	9.64	0.94	1.93	2.43
9941.10	9958.80	426.16	88.35	17.87	9.64	4.99	4.82
LB 9958.80	9970.66	649.89	82.04	12.10	14.70	6.92	7.92
9970.66	9982.52	916.22	100.12	11.89	20.73	8.44	9.15
9982.52	9994.38	934.41	101.21	11.86	21.14	8.53	9.23
9994.38	10006.24	938.45	101.83	11.97	21.23	8.59	9.22
10006.24	RB 10018.10	388.88	62.38	13.18	8.80	5.26	6.23
10018.10	10033.22	86.96	32.62	15.14	1.97	2.16	2.67
10033.22	10048.35	35.99	19.24	15.18	0.81	1.27	1.87
10048.35	10063.47	1.52	2.16	7.36	0.03	0.29	0.71

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9923.40	9941.10	41.42	16.69	9.53	0.94	1.91	2.48
9941.10	9958.80	431.68	87.59	17.87	9.77	4.95	4.93
LB 9958.80	9970.66	660.60	81.53	12.10	14.95	6.87	8.10
9970.66	9982.52	933.07	99.61	11.89	21.11	8.40	9.37
9982.52	9994.38	951.69	100.70	11.86	21.53	8.49	9.45
9994.38	10006.24	955.85	101.33	11.97	21.63	8.54	9.43
10006.24	RB 10018.10	394.00	61.87	13.18	8.91	5.22	6.37
10018.10	10033.22	51.68	18.82	10.50	1.17	2.24	2.75

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.053

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9913.3	1594.6	9921.9	1594.5	9926.4	1594.2	9934.4	1592.8	9939.8	1591.2
9955.3	1587.5	9959.5	1586.6	9959.9	1586.7	9966.3	1580.6	9966.3	1580.5
9973.6	1571.3	9978.4	1570.9	9990.1	1569.8	9991.3	1569.1	9995.7	1567.6
9996.1	1567.5	9997.1	1567.6	10004.3	1567.6	10007.8	1568	10011.1	1569.3
10016.5	1572	10021.7	1573.9	10026.2	1574.9	10040	1575.9	10047.7	1576.5
10062.9	1577.3	10069.6	1578.1	10078.8	1581.2	10083.9	1583.5	10105.2	1584.3
10110.2	1584.3	10124.3	1586	10141.8	1588.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9913.3	.05	9966.3	.04	10026.2	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9966.3	10026.2	117.15	108.69	69.01	.6	.8

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9948.63	9966.30	1.54	2.21	2.98	0.03	1.03	0.70
LB 9966.30	9978.28	355.68	103.35	16.54	8.05	8.63	3.44
9978.28	9990.26	793.72	147.41	12.06	17.96	12.31	5.38
9990.26	10002.24	1038.60	175.24	12.41	23.50	14.63	5.93
10002.24	10014.22	961.53	168.43	12.62	21.75	14.06	5.71
10014.22	RB 10026.20	493.74	113.19	12.70	11.17	9.45	4.36
10026.20	10055.10	562.22	193.87	28.97	12.72	6.71	2.90
10055.10	10084.00	212.96	106.51	27.80	4.82	3.96	2.00

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less

than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9948.63	9966.30	1.44	2.02	2.85	0.03	0.98	0.71
LB 9966.30	9978.28	368.01	102.27	16.54	8.33	8.54	3.60
9978.28	9990.26	825.56	146.33	12.06	18.68	12.22	5.64
9990.26	10002.24	1082.38	174.16	12.41	24.49	14.54	6.22
10002.24	10014.22	1001.64	167.34	12.62	22.66	13.97	5.99
10014.22	RB 10026.20	511.63	112.11	12.70	11.58	9.36	4.56
10026.20	10055.10	572.90	191.26	28.97	12.96	6.62	3.00
10055.10	10084.00	56.45	32.66	11.29	1.28	5.52	1.73

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.033

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9957	1582	9960	1581.5	9967.5	1580.1	9969.4	1579.7	9972.6	1579
9976.5	1576.8	9990.6	1568.7	9993.5	1566.8	9995.4	1565.8	9999.2	1565.6
10002.4	1565.5	10004.9	1565.3	10007.1	1567.2	10010.7	1571.3	10016	1576.8
10016.7	1577.5	10018.2	1577.8	10023	1578.9	10027.3	1580.1	10032.7	1580.8
10043.4	1581.5	10050.6	1581.6	10053.3	1581.6	10060.7	1581.7	10061.1	1581.6
10061.6	1581.7	10062.7	1581.8	10066.3	1582				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9957	.05	9976.5	.04	10016	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.5	10016	116.79	133.89	144.85	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9970.00	9976.50	0.08	0.08	0.62	0.00	0.15	0.96
LB 9976.50	9984.40	138.13	20.33	9.11	3.13	2.57	6.79
9984.40	9992.30	750.33	56.30	9.18	16.98	7.13	13.33
9992.30	10000.20	1655.18	87.28	8.39	37.45	11.05	18.96
10000.20	10008.10	1583.30	87.92	9.13	35.82	11.13	18.01
10008.10	RB 10016.00	292.94	35.13	11.58	6.63	4.45	8.34
10016.00	10032.77	0.04	0.05	0.43	0.00	0.15	0.84

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9970.00	9976.50	0.13	0.11	0.68	0.00	0.21	1.11
LB 9976.50	9984.40	141.72	20.79	9.11	3.21	2.63	6.82
9984.40	9992.30	751.99	56.75	9.18	17.01	7.18	13.25
9992.30	10000.20	1650.98	87.73	8.39	37.35	11.11	18.82
10000.20	10008.10	1579.18	88.38	9.13	35.73	11.19	17.87
10008.10	RB 10016.00	295.95	35.58	11.58	6.70	4.50	8.32
10016.00	10032.77	0.06	0.06	0.49	0.00	0.21	0.94

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates

that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 3.007

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9924.9	1585.6	9926.7	1585.2	9933.5	1583.5	9941.9	1580.8	9942.2	1580.8
9942.3	1580.7	9945.1	1578.7	9947.9	1576.7	9954.3	1575.8	9968.5	1573.7
9970.7	1572.8	9976.6	1570.6	9978	1570.2	9982.1	1568.6	9986.6	1567.2
9999.7	1563.5	10001.1	1563.5	10004	1563.5	10016.1	1571.3	10023.8	1576.4
10025	1577.3	10025.9	1577.1	10027.3	1577.4	10029.8	1578.3	10043.2	1579.1
10047.4	1579.4	10051.9	1579.7	10059.8	1580.7	10061.5	1580.9		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9924.9	.05	9968.5	.04	10023.8	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.5	10023.8	164.91	166.91	167.88	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9939.43	9953.97	8.27	5.71	6.97	0.19	0.85	1.45
9953.97	9968.50	103.45	35.07	14.69	2.34	2.41	2.95
LB 9968.50	9979.56	385.64	61.92	11.80	8.72	5.60	6.23
9979.56	9990.62	936.78	104.79	11.62	21.19	9.47	8.94
9990.62	10001.68	1531.31	139.74	11.41	34.64	12.64	10.96
10001.68	10012.74	1211.27	126.77	12.72	27.40	11.46	9.55
10012.74	RB 10023.80	242.93	49.12	13.23	5.50	4.44	4.95
10023.80	10036.37	0.35	0.45	2.14	0.01	0.24	0.78

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9939.43	9953.97	8.13	5.64	6.95	0.18	0.84	1.44
9953.97	9968.50	102.88	34.92	14.69	2.33	2.40	2.95
LB 9968.50	9979.56	385.21	61.80	11.80	8.72	5.59	6.23
9979.56	9990.62	936.91	104.67	11.62	21.20	9.46	8.95
9990.62	10001.68	1532.23	139.62	11.41	34.67	12.62	10.97
10001.68	10012.74	1211.83	126.66	12.72	27.42	11.45	9.57
10012.74	RB 10023.80	242.47	49.00	13.23	5.49	4.43	4.95
10023.80	10036.37	0.34	0.43	2.02	0.01	0.25	0.79

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.976

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9942.4	1579.9	9948.2	1578.3	9951.3	1578.1	9963.3	1577.4	9968.2	1577.1
9968.9	1577	9970	1576.9	9981.1	1575.7	9985.1	1572	9993.6	1564.2
9997.3	1561.1	10003.2	1560.9	10008	1560.6	10015.1	1568.9	10018	1572
10019.8	1574	10040.6	1575.8	10041.5	1575.9	10042.4	1576	10044.4	1576.7
10062.8	1582.9	10084.1	1588.3						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9942.4	.05	9985.1	.04	10018	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.1	10018	204.42	221.33	236.13	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9970.87	9985.10	0.73	0.41	1.29	0.02	0.44	1.77
LB 9985.10	9991.68	211.06	25.63	8.93	4.78	3.89	8.24

9991.68	9998.26	1014.37	64.12	8.39	22.95	9.74	15.82
9998.26	10004.84	1669.45	78.47	6.59	37.77	11.93	21.27
10004.84	10011.42	1273.68	73.63	8.43	28.82	11.19	17.30
10011.42	RB 10018.00	250.14	29.58	9.91	5.66	4.50	8.46
10018.00	10040.03	0.57	0.34	1.18	0.01	0.44	1.66

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9970.87	9985.10	0.82	0.45	1.33	0.02	0.48	1.82
LB 9985.10	9991.68	213.13	25.89	8.93	4.82	3.93	8.23
9991.68	9998.26	1014.12	64.38	8.39	22.94	9.78	15.75
9998.26	10004.84	1666.99	78.73	6.59	37.71	11.96	21.17
10004.84	10011.42	1272.26	73.88	8.43	28.78	11.23	17.22
10011.42	RB 10018.00	252.03	29.84	9.91	5.70	4.53	8.45
10018.00	10040.03	0.64	0.38	1.22	0.01	0.48	1.71

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.934

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9944.5	1584.2	9946.3	1583.8	9947.5	1583.6	9948.4	1583.4	9949	1583.3
9954.4	1580.1	9961.6	1575.9	9974.1	1568.7	9982	1564.1	9984.8	1562.6
9985.3	1562.3	9986	1562	9991.6	1559.5	9999.5	1559.1	10002.6	1558.9
10005.4	1560.3	10018.6	1567.7	10018.7	1567.7	10025.6	1568.7	10025.7	1568.7
10033.1	1572.8	10034.1	1573.3	10047.7	1578.5	10050.3	1579.5	10050.7	1579.7
10050.8	1579.7	10051.3	1579.7	10055.4	1580.1	10059.3	1580.4	10063.8	1580.8
10066.7	1581.1	10067	1581.2	10068.7	1582				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9944.5	.05	9974.1	.04	10018.6	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.1	10018.6	156.51	162.94	164.58	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9964.23	9974.10	0.49	0.34	1.25	0.01	0.31	1.43
LB 9974.10	9983.00	217.47	28.61	10.28	4.92	3.21	7.60
9983.00	9991.90	1011.88	70.67	9.82	22.89	7.94	14.32
9991.90	10000.80	1603.29	89.61	8.91	36.27	10.07	17.89
10000.80	10009.70	1228.13	79.52	9.86	27.79	8.94	15.44
10009.70	RB 10018.60	330.58	36.68	10.20	7.48	4.12	9.01
10018.60	10035.30	28.17	8.35	8.46	0.64	1.01	3.37

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9964.23	9974.10	0.61	0.40	1.31	0.01	0.37	1.53
LB 9974.10	9983.00	221.07	29.12	10.28	5.00	3.27	7.59
9983.00	9991.90	1010.94	71.18	9.82	22.87	8.00	14.20
9991.90	10000.80	1597.80	90.11	8.91	36.15	10.12	17.73
10000.80	10009.70	1225.38	80.03	9.86	27.72	8.99	15.31

10009.70	*RB 10018.60*	*333.91*	*37.18*	*10.20*	*7.55*	*4.18*	*8.98*
10018.60	10035.30	30.28	6.82	8.52	0.69	1.07	3.43

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.903

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9946.2	1578.6	9949.7	1577.5	9973.9	1566.4	9988.8	1559.6	9989.9	1559.2
9990.7	1559	9996.7	1556.3	10005.1	1557.8	10021	1562.9	10030.1	1566.4
10033.1	1567.6	10042.8	1568.7	10048.1	1569.2	10052.5	1569.6	10057.6	1569.7
10071.3	1569.7	10073.1	1569.9	10074.8	1570	10084.4	1570.8	10090.3	1571.2
10104.5	1571.8	10109.1	1572.7	10110.5	1572.9	10117	1575.6	10120.4	1576.7
10123.6	1577.1	10129.7	1577.8						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9946.2	.05	9973.9	.04	10030.1	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9973.9	10030.1	57.44	58.26	57.77	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9964.67	9973.90	0.08	0.08	0.67	0.00	0.14	0.90
LB 9973.90	9985.14	236.11	31.96	12.36	5.34	2.84	7.39
9985.14	9996.38	1279.65	87.78	12.25	28.95	7.81	14.58
9996.38	10007.62	1810.45	105.53	11.53	40.96	9.39	17.16
10007.62	10018.86	908.69	70.44	11.80	20.56	6.27	12.90
10018.86	RB 10030.10	184.94	27.28	12.00	4.18	2.43	6.78
10030.10	10063.30	0.09	0.10	0.75	0.00	0.14	0.91

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9964.67	9973.90	0.11	0.11	0.71	0.00	0.18	1.02
LB 9973.90	9985.14	239.68	32.46	12.36	5.42	2.89	7.38
9985.14	9996.38	1277.56	88.29	12.25	28.90	7.86	14.47
9996.38	10007.62	1804.60	106.04	11.53	40.83	9.43	17.02
10007.62	10018.86	909.35	70.95	11.80	20.57	6.31	12.82
10018.86	RB 10030.10	188.57	27.78	12.00	4.27	2.47	6.79
10030.10	10063.30	0.13	0.13	0.79	0.00	0.19	1.04

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.892

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9927.2	1578.7	9927.4	1578.6	9930.1	1577.6	9939.9	1575	9943.7	1573.6
9968	1563.9	9972.4	1562.2	9972.5	1562.2	9978.9	1561.1	9979.1	1561.1
9979.2	1561	9992.2	1557.6	9992.4	1557.1	9993.7	1555.7	9999.6	1548.8
10003.8	1554.1	10006.2	1556.5	10009.1	1557.1	10012.8	1557.9	10013.2	1558.1
10014.1	1558.4	10025.2	1563.7	10025.3	1563.8	10027	1564	10033.1	1565.2
10036.3	1567.2	10038.9	1568	10041.2	1568.5	10044.8	1569.5	10047.2	1569.7
10047.8	1569.6	10048	1569.7	10055.3	1569.8	10058.9	1569.6	10059.2	1569.6

10059.4	1569.6	10076.2	1569.9	10082.5	1570	10083.8	1570

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9927.2	.055	9972.5	.04	10025.2	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972.5	10025.2	181.39	191.34	194.08	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.40	9972.50	14.51	4.65	5.24	0.33	0.95	3.12
LB 9972.50	9983.04	252.24	29.98	10.80	5.71	2.84	8.41
9983.04	9993.58	726.98	58.49	11.74	16.45	5.55	12.43
9993.58	10004.12	2105.45	126.75	16.47	47.63	12.03	16.61
10004.12	10014.66	1076.79	73.94	11.70	24.36	7.02	14.56
10014.66	RB 10025.20	243.75	30.30	11.68	5.51	2.87	8.04
10025.20	10044.73	0.29	0.31	2.16	0.01	0.15	0.92

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.40	9972.50	15.33	4.86	5.29	0.35	0.99	3.15
LB 9972.50	9983.04	255.85	30.42	10.80	5.79	2.89	8.41
9983.04	9993.58	728.67	58.93	11.74	16.49	5.59	12.36
9993.58	10004.12	2096.10	127.20	16.47	47.42	12.07	16.48
10004.12	10014.66	1076.46	74.39	11.70	24.35	7.06	14.47
10014.66	RB 10025.20	247.17	30.74	11.68	5.59	2.92	8.04
10025.20	10044.73	0.42	0.40	2.20	0.01	0.19	1.07

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.856

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9936.1	1566.2	9936.4	1566.1	9948.6	1561.2	9955.1	1559.3	9960.2	1557.6
9961.8	1556.8	9962.6	1556.7	9967.9	1555.3	9982.1	1550.4	9987.5	1550.3
9989.1	1550.3	9990	1550.2	10001.5	1547.5	10002.9	1547.2	10003.1	1547.2
10010.1	1557.6	10012.9	1561.8	10013.8	1562.8	10015.8	1563	10017.5	1563.1
10022.5	1563	10029.1	1564.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9936.1	.055	9961.8	.04	10010.1	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9961.8	10010.1	212.97	226.57	231.95	.6	.8

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.23	9961.80	3.26	1.55	3.09	0.07	0.55	2.10
LB 9961.80	9971.46	173.78	23.51	10.05	3.93	2.43	7.39
9971.46	9981.12	690.81	54.16	10.22	15.63	5.61	12.75
9981.12	9990.78	1203.64	74.15	9.74	27.23	7.68	16.23
9990.78	10000.44	1587.44	88.18	9.92	35.92	9.13	18.00
10000.44	RB 10010.10	761.02	67.38	15.26	17.22	6.98	11.29
10010.10	10016.43	0.04	0.06	0.49	0.00	0.21	0.78

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates

that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.23	9961.80	3.66	1.68	3.13	0.08	0.60	2.17
LB 9961.80	9971.46	177.37	23.96	10.05	4.01	2.48	7.40
9971.46	9981.12	692.59	54.61	10.22	15.67	5.65	12.68
9981.12	9990.78	1202.28	74.60	9.74	27.20	7.72	16.12
9990.78	10000.44	1583.11	88.63	9.92	35.82	9.18	17.86
10000.44	RB 10010.10	760.93	67.83	15.26	17.22	7.02	11.22
10010.10	10016.43	0.06	0.07	0.54	0.00	0.26	0.83

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.813

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9912.7	1576.7	9914.6	1576.5	9917.2	1576	9918.8	1575.7	9920.2	1575.3
9928.1	1572.5	9943.8	1565.4	9949.3	1563.2	9954	1560.7	9959.5	1558.4
9963.9	1556.2	9972.1	1551.8	9974	1550.6	9974.2	1550.5	9983.2	1549.1
9986.9	1548.4	9987.7	1548.2	9997.3	1545.5	10001.7	1545.6	10002.3	1545.6
10003.6	1545.8	10008.1	1546.2	10015.6	1547	10017.6	1547.7	10019.9	1548.3
10022.3	1548.5	10025.9	1548.7	10029.1	1549	10037.2	1549.1	10039.8	1549.1
10046.8	1549.8	10059.3	1551.6	10073.4	1552.4	10083.1	1552.8	10085.5	1552.6
10091.2	1552.2	10097.7	1552.5	10098.3	1552.5	10098.4	1552.5	10098.6	1552.5
10100.8	1552.7	10140	1556.1	10147.3	1556.6	10158.8	1557.7	10164.5	1558.8
10169.4	1559.8	10173.6	1560.2	10178	1560.7	10183.6	1561.6	10197.7	1563.6
10216.4	1566								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9912.7	.055	9974	.04	10019.9	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974	10019.9	515.82	501.76	467.93	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.57	9974.00	25.07	8.45	6.39	0.57	1.52	2.97
LB 9974.00	9983.18	294.33	36.19	9.31	6.66	3.94	8.13
9983.18	9992.36	532.59	51.97	9.45	12.05	5.66	10.25
9992.36	10001.54	926.28	72.19	9.37	20.96	7.86	12.83
10001.54	10010.72	911.31	71.05	9.23	20.62	7.74	12.83
10010.72	RB 10019.90	685.23	60.33	9.40	15.50	6.57	11.36
10019.90	10059.20	882.87	165.64	39.49	19.97	4.21	5.33
10059.20	10098.50	148.54	56.78	39.36	3.36	1.44	2.62
10098.50	10137.80	13.78	9.16	14.58	0.31	0.63	1.50

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.57	9974.00	34.14	9.85	6.64	0.77	1.78	3.46
LB 9974.00	9983.18	353.82	38.52	9.31	8.01	4.20	9.19
9983.18	9992.36	620.81	54.30	9.45	14.05	5.91	11.43
9992.36	10001.54	1058.23	74.52	9.37	23.94	8.12	14.20
10001.54	10010.72	1042.00	73.38	9.23	23.57	7.99	14.20
10010.72	RB 10019.90	790.85	62.65	9.40	17.89	6.83	12.62
10019.90	10059.20	520.15	78.46	19.99	11.77	5.22	6.63

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.718

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

9912.3	1568	9919	1567.9	9928.3	1567.6	9930.4	1567.6	9932.2	1567.6
9936.1	1566.3	9965.2	1547.9	9966.9	1546.9	9968.7	1545.8	9969.8	1545.4
9970.9	1544.9	9978.1	1542.4	9984.6	1542.2	10006.1	1541.9	10009.4	1542
10017	1543.9	10021.1	1544.9	10021.2	1544.9	10027.9	1545.1	10034.3	1545.3
10061.3	1549.3	10071.7	1550.9	10076	1551.5	10078.1	1551.5	10087.2	1551.5
10144.9	1551.6	10157.5	1552.3	10160.4	1552.4	10169.1	1552.7	10195.5	1553.4
10201.1	1553.7	10205.8	1553.8	10223.5	1553.5				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9912.3	.055	9965.2	.04	10021.2	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.2	10021.2	184.79	180.44	186.47	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9947.57	9965.20	1.53	0.97	2.07	0.03	0.55	1.59
LB 9965.20	9976.40	352.76	43.33	12.28	7.98	3.87	8.14
9976.40	9987.60	926.14	74.80	11.30	20.95	6.68	12.38
9987.60	9998.80	989.93	77.56	11.20	22.40	6.93	12.76
9998.80	10010.00	1018.23	78.94	11.22	23.04	7.05	12.90
10010.00	RB 10021.20	653.25	61.16	11.54	14.78	5.46	10.68
10021.20	10061.66	478.16	97.54	38.39	10.82	2.56	4.90

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9947.57	9965.20	1.37	0.85	1.94	0.03	0.52	1.62
LB 9965.20	9976.40	364.06	42.56	12.28	8.24	3.80	8.55
9976.40	9987.60	967.97	74.03	11.30	21.90	6.61	13.08
9987.60	9998.80	1035.28	76.79	11.20	23.42	6.86	13.48
9998.80	10010.00	1065.18	78.17	11.22	24.10	6.98	13.63
10010.00	RB 10021.20	680.11	60.39	11.54	15.39	5.39	11.26
10021.20	10061.66	306.02	52.13	17.18	6.92	3.83	5.87

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.683

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9934.2	1562.7	9936.1	1562.8	9937.1	1562.1	9958.2	1548	9958.9	1547.7
9959.6	1547.5	9960.8	1547	9977.8	1541.5	9981.5	1540.5	9983.2	1540.4
9985.5	1540.4	9989.7	1539.7	9995.2	1538.6	10001	1538.4	10007.9	1538.2
10024.7	1542.3	10032.5	1544.2	10033.4	1544.4	10033.4	1544.5	10034.4	1544.5
10036.9	1544.6	10044.5	1544.9	10047.9	1545.1	10049.6	1545.1	10067.8	1545.1
10072	1545.3	10079.1	1545.4	10080.4	1545.4	10081.1	1545.4	10082	1545.4
10088.3	1544.8	10091.5	1544.5	10097.5	1544.3	10100.9	1544.3	10102.8	1544
10105.7	1544.4	10110.4	1545.1	10115.9	1545.9	10116	1545.9	10122.1	1546.5
10124.4	1546.6	10128.1	1547.2	10137.6	1547.9	10138.3	1548	10139.1	1548
10139.6	1548.1	10155.2	1549.2	10167.6	1550.5	10169.4	1550.7	10182.1	1552.1
10182.7	1552.1								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9934.2	.06	9960.8	.045	10033.4	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960.8	10033.4	83.42	144.8	200.68	.3	.5

Ineffective Flow num= 1

Sta L	Sta R	Elev
10082	10182.7	1552.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9951.93	9960.80	4.40	3.48	4.05	0.10	0.95	1.26
LB 9960.80	9975.32	255.87	58.84	15.26	5.79	4.05	4.35
9975.32	9989.84	809.19	116.10	14.84	18.31	8.00	6.97
9989.84	10004.36	1186.61	145.25	14.63	26.85	10.00	8.17
10004.36	10018.88	1074.13	137.61	14.84	24.30	9.48	7.81
10018.88	RB 10033.40	504.41	87.90	15.04	11.41	6.05	5.74
10033.40	10057.70	314.79	92.53	24.31	7.12	3.81	3.40

10057.70	10082.00	270.60	84.49	24.31	6.12	3.48	3.20
10082.00	10115.57	0.00	133.42	33.77	0.00	3.97	0.00
10115.57	10149.13	0.00	43.07	32.74	0.00	1.32	0.00

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9951.93	9960.80	4.22	3.26	3.94	0.10	0.92	1.29
LB 9960.80	9975.32	262.07	57.95	15.26	5.93	3.99	4.52
9975.32	9989.84	839.18	115.22	14.84	18.99	7.94	7.28
9989.84	10004.36	1233.75	144.36	14.63	27.91	9.94	8.55
10004.36	10018.88	1116.18	136.73	14.84	25.25	9.42	8.16
10018.88	RB 10033.40	520.97	87.02	15.04	11.79	5.99	5.99
10033.40	10057.70	318.87	91.05	24.31	7.21	3.75	3.50
10057.70	10082.00	124.76	43.63	15.79	2.82	3.53	2.86

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.656

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9934.3	1560.2	9946.1	1554.9	9951.8	1552.4	9958.9	1548.6	9959.8	1548.3
9960.7	1548	9970.6	1543.7	9972.9	1543.2	9973.4	1543.1	9979.3	1541.1
9983.3	1540.9	9986.9	1540.1	9990.5	1539.1	9991.7	1538.9	9995.8	1536.6
9995.9	1536.6	9998.3	1535.7	10000.2	1535.8	10009.5	1535.8	10013.6	1537
10017.2	1539.5	10019.5	1541.1	10023.2	1543.1	10025.6	1543.7	10029.4	1543.8
10031.4	1544.2	10032.7	1544.4	10035	1544.7	10039.8	1545.3	10045.5	1545.9
10048.8	1546.4	10050.1	1546.5	10051.8	1546.2	10062.7	1540.4	10064.3	1539.6
10065.4	1539.7	10066.4	1539.9	10068.3	1540.3	10075	1541.8	10080.1	1543.4
10082.5	1544.2	10084.1	1544.7	10085.8	1545.8	10091.2	1548.5	10092.7	1549
10098.3	1551.2	10101	1551.7	10104.4	1552.5	10108.3	1554.1		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9934.3	.055	9972.9	.04	10025.6	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972.9	10025.6	178.7	163.1	125.84	.3	.5

Ineffective Flow num= 1

Sta L	Sta R	Elev
10050.1	10108.3	1549.7

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9960.03	9972.90	20.49	6.50	6.07	0.46	1.14	3.15
LB 9972.90	9983.44	310.16	36.50	10.89	7.02	3.46	8.50
9983.44	9993.98	691.21	59.52	11.11	15.64	5.65	11.61
9993.98	10004.52	1536.55	95.64	10.97	34.76	9.08	16.07
10004.52	10015.06	1485.21	93.91	11.03	33.60	8.91	15.82
10015.06	RB 10025.60	345.90	40.64	12.09	7.83	3.86	8.51
10025.60	10050.10	30.48	11.30	13.34	0.69	0.85	2.70
10050.10	10064.65	0.00	31.70	12.31	0.00	2.90	0.00
10064.65	10079.20	0.00	58.26	14.98	0.00	4.00	0.00
10079.20	10093.75	0.00	6.39	6.03	0.00	1.13	0.00

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta	Right Sta	Flow	Area	W.P.	% Conv.	Hydr D.	Velocity

(ft)	(ft)	(cfs)	(sq ft)	(ft)		(ft)	(ft/s)
9960.03	9972.90	20.68	6.55	6.08	0.47	1.15	3.16
LB 9972.90	9983.44	310.78	36.60	10.89	7.03	3.47	8.49
9983.44	9993.98	691.45	59.62	11.11	15.64	5.66	11.60
9993.98	10004.52	1535.54	95.74	10.97	34.74	9.08	16.04
10004.52	10015.06	1484.28	94.00	11.03	33.58	8.92	15.79
10015.06	RB 10025.60	346.44	40.73	12.09	7.84	3.86	8.51
10025.60	10050.10	30.83	11.42	13.41	0.70	0.86	2.70
10050.10	10064.65	0.00	31.79	12.33	0.00	2.90	0.00
10064.65	10079.20	0.00	58.39	14.98	0.00	4.01	0.00
10079.20	10093.75	0.00	6.44	6.04	0.00	1.14	0.00

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.625

INPUT
Description: 100-year, 24-hour Peak Discharge of 4570 cfs from HEC-1 model at station C207R.
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9922.2	1559.2	9927	1555.9	9930.9	1553.2	9934.1	1550.3	9940.5	1546
9949	1541.1	9951.5	1539.6	9952.3	1538.5	9954.3	1537.7	9960.8	1536
9970.4	1537.6	9970.6	1537.7	9971.3	1537.6	9972.2	1537.6	9983.3	1536.9
9983.4	1536.9	9988.4	1535.5	9992.7	1534.2	9998.8	1534.1	10005.1	1533.9
10009.1	1533.9	10014.9	1534	10015.4	1534.1	10016	1534.2	10024.1	1535.9
10030.7	1536.1	10044	1536.5	10049.9	1536.6	10050	1536.6	10053.2	1536.3
10056.8	1536.1	10058.5	1535.9	10061.7	1536	10069.2	1536.2	10070.3	1536.3
10074.6	1537	10076.7	1536.7	10091	1535.6	10097.1	1536.3	10112.9	1538.4
10123.6	1543.5	10143.6	1553.3	10147.3	1553.8	10150.3	1554		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9922.2	.055	9983.3	.04	10049.9	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.3	10049.9	120.5	119.08	114.06	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9937.47	9952.75	4.36	2.71	3.55	0.10	1.00	1.61
9952.75	9968.03	246.97	55.37	15.71	5.40	3.63	4.46
9968.03	9983.30	199.19	48.23	15.36	4.36	3.16	4.13
LB 9983.30	9996.62	571.66	70.65	13.71	12.51	5.30	8.09
9996.62	10009.94	815.85	86.48	13.32	17.85	6.49	9.43
10009.94	10023.26	701.06	79.36	13.50	15.34	5.96	8.83
10023.26	10036.58	426.88	58.66	13.34	9.34	4.40	7.28
10036.58	RB 10049.90	366.32	53.49	13.32	8.02	4.02	6.85
10049.90	10075.00	539.74	106.06	25.20	11.81	4.23	5.09
10075.00	10100.10	552.45	107.60	25.23	12.09	4.29	5.13
10100.10	10125.20	145.51	41.97	17.74	3.18	2.45	3.47

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9937.47	9952.75	9.16	4.91	4.36	0.20	1.81	1.86
9952.75	9968.03	309.37	67.79	15.71	6.77	4.44	4.56
9968.03	9983.30	260.89	60.65	15.36	5.71	3.97	4.30
LB 9983.30	9996.62	651.91	81.48	13.71	14.26	6.12	8.00
9996.62	10009.94	892.97	97.31	13.32	19.54	7.31	9.18
10009.94	10023.26	780.12	90.19	13.50	17.07	6.77	8.65
10023.26	10036.58	509.03	69.50	13.34	11.14	5.22	7.32
10036.58	RB 10049.90	447.86	64.32	13.32	9.80	4.83	6.96
10049.90	10075.00	636.91	126.47	25.20	13.94	5.04	5.04
10075.00	10100.10	71.79	23.54	9.96	1.57	4.63	3.05

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.603

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9967.3	1549.6	9970.3	1547.6	9971.7	1546.7	9975.7	1544	9976.8	1543.4
9979.8	1541.7	9980.7	1540.9	9982.3	1539.5	9984.1	1537.8	9985.8	1536.3
9986.8	1535.6	9989.6	1534.2	9990.6	1533.8	9992.3	1533.1	9998.3	1533
10007.9	1532.9	10019.6	1532.6	10030.7	1535.9	10030.8	1535.9	10030.9	1535.9
10042.7	1535.6	10049.2	1534.4	10052.1	1534	10054.6	1534	10062.6	1534
10067.5	1534.2	10068	1534.2	10069.6	1534.3	10070.6	1534.4	10075	1534.5
10075.5	1534.5	10076.3	1534.5	10080.4	1534.6	10091.4	1535.3	10092.3	1535.3
10104.5	1539.5	10108.8	1541	10116.1	1544.7	10127.1	1550.5	10127.6	1550.6

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9967.3	.055	9984.1	.04	10030.8	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.1	10030.8	435.67	428.3	416.85	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9978.50	9984.10	0.56	0.41	1.28	0.01	0.44	1.38
LB 9984.10	9993.44	320.72	36.01	10.67	7.02	3.86	8.91
9993.44	10002.78	666.31	52.95	9.34	14.58	5.67	12.58
10002.78	10012.12	689.95	54.07	9.34	15.10	5.79	12.76
10012.12	10021.46	717.46	55.54	9.42	15.70	5.95	12.92
10021.46	RB 10030.80	383.40	38.64	9.74	8.39	4.14	9.92
10030.80	10050.16	392.30	62.92	19.48	8.58	3.25	6.23
10050.16	10069.52	706.22	89.35	19.38	15.45	4.62	7.90
10069.52	10088.88	562.47	77.95	19.39	12.31	4.03	7.22
10088.88	10108.24	130.61	28.34	13.80	2.86	2.14	4.61

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9978.50	9984.10	0.94	0.54	1.42	0.02	0.58	1.74
LB 9984.10	9993.44	383.33	37.31	10.67	8.39	3.99	10.27
9993.44	10002.78	781.70	54.24	9.34	17.11	5.81	14.41
10002.78	10012.12	808.78	55.36	9.34	17.70	5.93	14.61
10012.12	10021.46	840.15	56.84	9.42	18.38	6.09	14.78
10021.46	RB 10030.80	456.44	39.94	9.74	9.99	4.28	11.43
10030.80	10050.16	462.10	65.61	19.48	10.11	3.39	7.04
10050.16	10069.52	815.15	92.04	19.38	17.84	4.75	8.86
10069.52	10088.88	21.40	6.42	5.85	0.47	4.46	3.33

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.521

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9820.5	1566.8	9863.6	1538.8	9869.2	1535.2	9881.6	1533.8	9883.2	1533.6
9883.6	1533.5	9892.6	1532	9896.1	1531.6	9902.4	1531.3	9919.6	1530
9925	1530.6	9929.7	1531.1	9940.3	1530.2	9961.5	1528.8	9962.6	1528.7
9965.7	1528.6	9975.6	1528.1	9981.5	1528	9982.1	1528	9984.1	1528.1
9986.6	1527.9	9990	1527.6	9993.3	1526.9	10002.8	1526.4	10007.7	1526.2
10021.2	1532	10025.5	1533.8	10026.7	1534.3	10035.7	1536.5	10061.8	1542.6
10064.4	1543.2	10067.3	1543.6						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9820.5	.055	9986.6	.04	10021.2	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986.6	10021.2	509.45	512.29	508.89	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta	Right Sta	Flow	Area	W.P.	% Conv.	Hydr D.	Velocity

(ft)	(ft)	(cfs)	(sq ft)	(ft)		(ft)	(ft/s)
9853.72	9886.94	0.14	0.20	1.55	0.00	0.13	0.72
9886.94	9920.16	294.57	65.65	33.38	6.45	1.98	4.49
9920.16	9953.38	563.28	96.82	33.34	12.33	2.91	5.82
9953.38	9986.60	1267.21	157.34	33.27	27.73	4.74	8.05
LB 9986.60	9993.52	506.96	39.54	7.01	11.09	5.71	12.82
9993.52	10000.44	631.81	44.93	6.93	13.83	6.49	14.06
10000.44	10007.36	689.26	47.33	6.93	15.08	6.84	14.56
10007.36	10014.28	475.97	39.13	7.50	10.42	5.65	12.16
10014.28	RB 10021.20	137.24	18.58	7.53	3.00	2.69	7.38
10021.20	10036.57	3.57	1.72	3.11	0.08	0.60	2.08

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9853.72	9886.94	0.14	0.20	1.55	0.00	0.13	0.72
9886.94	9920.16	294.62	65.66	33.38	6.45	1.98	4.49
9920.16	9953.38	563.33	96.83	33.34	12.33	2.91	5.82
9953.38	9986.60	1267.21	157.35	33.27	27.73	4.74	8.05
LB 9986.60	9993.52	506.94	39.55	7.01	11.09	5.71	12.82
9993.52	10000.44	631.77	44.93	6.93	13.82	6.49	14.06
10000.44	10007.36	689.21	47.34	6.93	15.08	6.84	14.56
10007.36	10014.28	475.95	39.13	7.50	10.41	5.65	12.16
10014.28	RB 10021.20	137.25	18.59	7.53	3.00	2.69	7.38
10021.20	10036.57	3.58	1.72	3.10	0.08	0.60	2.08

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.424

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9936	1547.7	9967.9	1527.2	9974	1523.2	9979	1522.4	9980.9	1522.2
9986.4	1521.3	9987.3	1521.2	9989.7	1521.2	10005.7	1520.8	10014.4	1521
10020.6	1521.4	10024.2	1522.3	10025.5	1522.5	10029.5	1522.9	10047.1	1525.2
10056.5	1526.6	10060.5	1527.2	10065.8	1528	10070.1	1528.6	10078.3	1531.9
10111.5	1545.6	10111.7	1545.6	10112.8	1545.7	10126	1545.3	10128.4	1545.3
10130.1	1545.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9936	.055	9967.9	.04	10060.5	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967.9	10060.5	119.28	123.29	130.97	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.27	9967.90	0.36	0.33	1.21	0.01	0.33	1.07
LB 9967.90	9986.42	736.98	85.74	19.86	16.13	4.63	8.60
9986.42	10004.94	1468.53	126.12	18.53	32.13	6.81	11.64
10004.94	*10023.46*	*1433.72*	*124.57*	*18.62*	*31.37*	*6.73*	*11.51*
10023.46	10041.98	735.37	83.56	18.68	16.09	4.51	8.80
10041.98	RB 10060.50	193.34	37.51	18.71	4.23	2.03	5.15
10060.50	10083.70	1.70	1.42	4.39	0.04	0.33	1.20

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.27	9967.90	0.35	0.33	1.21	0.01	0.33	1.07
LB 9967.90	9986.42	736.83	85.67	19.86	16.12	4.63	8.60
9986.42	10004.94	1468.91	126.05	18.53	32.14	6.81	11.65
10004.94	10023.46	1434.08	124.49	18.62	31.38	6.72	11.52
10023.46	10041.98	735.20	83.49	18.68	16.09	4.51	8.81
10041.98	RB 10060.50	192.95	37.44	18.71	4.22	2.02	5.15
10060.50	10083.70	1.68	1.41	4.36	0.04	0.33	1.19

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.401

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

9928.1	1548.2	9930.1	1547.1	9931.4	1546.4	9936.7	1543.6	9968.3	1526
9976.3	1521.6	9977.9	1521.4	9979.7	1521.2	9981.8	1521	9983.1	1520.7
9984.8	1520.3	9987.8	1519.7	9993.9	1519.7	10012.6	1519.5	10015.8	1520
10023.9	1521.1	10025.2	1521.3	10029.8	1521.9	10046.7	1523.9	10051.9	1524.8
10051.9	1524.9	10066.7	1527.8	10075.1	1530.8	10086.6	1535.2	10091.1	1537.1
10097	1538.9	10100.6	1540.2						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9928.1	.055	9968.3	.04	10051.9	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.3	10051.9	425.78	431.97	432.64	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9954.90	9968.30	0.15	0.17	0.89	0.00	0.22	0.89
LB 9968.30	9985.02	580.59	68.08	17.97	12.70	4.07	8.53
9985.02	10001.74	1396.04	112.12	16.78	30.55	6.71	12.45
10001.74	10018.46	1406.85	112.66	16.78	30.78	6.74	12.49
10018.46	10035.18	838.04	82.72	16.86	18.34	4.95	10.13
10035.18	RB 10051.90	335.00	47.85	16.98	7.33	2.86	7.00
10051.90	10068.13	13.32	5.99	7.97	0.29	0.77	2.22

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9954.90	9968.30	0.16	0.18	0.90	0.00	0.23	0.91
LB 9968.30	9985.02	581.28	68.29	17.97	12.72	4.08	8.51
9985.02	10001.74	1394.88	112.33	16.78	30.52	6.72	12.42
10001.74	10018.46	1405.66	112.87	16.78	30.76	6.75	12.45
10018.46	10035.18	838.27	82.93	16.86	18.34	4.96	10.11
10035.18	RB 10051.90	336.13	48.06	16.98	7.36	2.87	6.99
10051.90	10068.13	13.62	6.09	7.98	0.30	0.78	2.24

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.319

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9927.6	1530.2	9933.9	1526.7	9941.7	1524	9949.8	1521.3	9951.7	1520.7
9953.8	1520.1	9965.9	1518.3	9980.1	1516.4	9985.4	1515.3	9990.9	1514.1
10001.9	1513.5	10002.7	1513.5	10003	1513.5	10003.3	1513.5	10011.9	1513.8
10016.8	1516.7	10020.6	1518.8	10024.9	1521.4	10025.7	1521.9	10027.1	1522.8
10041.1	1530	10053.1	1536.6						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9927.6	.055	9949.8	.04	10024.9	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9949.8	10024.9	489.37	498.37	503.44	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9942.40	9949.80	0.98	0.76	2.25	0.02	0.35	1.30
LB 9949.80	9964.82	209.05	35.38	15.32	4.57	2.36	5.91
9964.82	9979.84	635.27	68.63	15.16	13.90	4.57	9.26
9979.84	9994.86	1305.53	106.06	15.27	28.57	7.06	12.31
9994.86	10009.88	1751.19	125.71	15.03	38.32	8.37	13.93
10009.88	RB 10024.90	667.66	74.18	17.08	14.61	4.94	9.00
10024.90	10034.30	0.32	0.30	1.15	0.01	0.31	1.09

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9942.40	9949.80	0.89	0.70	2.16	0.02	0.34	1.27
LB 9949.80	9964.82	206.64	34.98	15.32	4.52	2.33	5.91
9964.82	9979.84	633.78	68.23	15.16	13.87	4.54	9.29
9979.84	9994.86	1306.97	105.66	15.27	28.60	7.03	12.37
9994.86	10009.88	1754.86	125.31	15.03	38.40	8.34	14.00
10009.88	RB 10024.90	666.58	73.78	17.08	14.59	4.91	9.03
10024.90	10034.30	0.29	0.27	1.10	0.01	0.29	1.07

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.225

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9906.2	1528.1	9908.4	1527.2	9930.8	1518	9936.9	1516	9945.1	1515.1
9962.7	1513.1	9968.6	1511.8	9974.4	1510.7	9976.3	1510.2	9983.1	1509.2
9989.4	1509.4	9994.3	1509.7	10003.2	1509.6	10011.7	1509.7	10023.8	1514
10025.3	1514.5	10026.4	1515.4	10027.5	1516.4	10031.3	1519.4	10047.4	1532.3
10056.4	1538.6	10056.8	1538.6						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9906.2	.055	9962.7	.04	10026.4	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9962.7	10026.4	478.71	494.15	476.32	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9934.45	9948.58	22.42	9.92	12.39	0.49	0.81	2.26
9948.58	9962.70	147.64	32.48	14.22	3.23	2.30	4.55
LB 9962.70	9975.44	589.49	56.72	13.02	12.90	4.45	10.39
9975.44	9988.18	1154.49	84.44	12.85	25.26	6.63	13.67
9988.18	10000.92	1154.78	84.20	12.75	25.27	6.61	13.72
10000.92	10013.66	1115.93	82.77	12.86	24.42	6.50	13.48
10013.66	RB 10026.40	384.79	44.90	13.76	8.42	3.52	8.57
10026.40	10036.53	0.46	0.35	1.19	0.01	0.40	1.31

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9934.45	9948.58	23.58	10.27	12.42	0.52	0.84	2.30
9948.58	9962.70	149.81	32.88	14.22	3.28	2.33	4.56
LB 9962.70	9975.44	590.46	57.08	13.02	12.92	4.48	10.34
9975.44	9988.18	1152.39	84.80	12.85	25.22	6.66	13.59
9988.18	10000.92	1152.70	84.56	12.75	25.22	6.64	13.63
10000.92	10013.66	1114.06	83.14	12.86	24.38	6.53	13.40
10013.66	RB 10026.40	386.50	45.26	13.76	8.46	3.55	8.54
10026.40	10036.53	0.51	0.38	1.22	0.01	0.43	1.34

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.131

INPUT
Description:
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9942.1	1517.8	9946.6	1515.8	9950.5	1514.6	9977.7	1505.4	9977.8	1505.4
9982.7	1503.8	9985	1503.3	9996.1	1503.2	10014.9	1503.1	10023.5	1505.1
10023.9	1505.1	10023.9	1505.2	10028.9	1505.5	10048.6	1507	10065.2	1514.3
10072.1	1517.6								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9942.1	.055	9977.7	.04	10023.9	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.7	10023.9	497.8	513.49	519.41	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.97	9965.83	0.14	0.17	1.07	0.00	0.17	0.82

9965.83	9977.70	131.28	27.87	12.53	2.87	2.35	4.71
LB 9977.70	9986.94	647.71	52.51	9.55	14.17	5.68	12.33
9986.94	9996.18	831.23	60.20	9.24	18.19	6.51	13.81
9996.18	10005.42	845.23	60.80	9.24	18.50	6.58	13.90
10005.42	10014.66	855.87	61.26	9.24	18.73	6.63	13.97
10014.66	RB 10023.90	638.28	52.10	9.57	13.97	5.64	12.25
10023.90	10033.54	290.64	40.95	9.66	6.36	4.25	7.10
10033.54	10043.18	213.89	34.08	9.67	4.68	3.54	6.28
10043.18	10052.82	114.34	23.77	10.05	2.50	2.47	4.81
10052.82	10062.46	1.38	0.92	2.23	0.03	0.45	1.50

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9977.70	9986.94	532.61	53.28	13.99	11.65	5.77	10.00
9986.94	9996.18	878.91	60.97	9.24	19.23	6.60	14.42
9996.18	10005.42	893.53	61.57	9.24	19.55	6.66	14.51
10005.42	10014.66	904.63	62.03	9.24	19.80	6.71	14.58
10014.66	RB 10023.90	677.10	52.87	9.57	14.82	5.72	12.81
10023.90	10033.54	317.89	41.76	9.66	6.96	4.33	7.61
10033.54	10043.18	235.46	34.88	9.67	5.15	3.62	6.75
10043.18	10052.82	127.98	24.57	10.05	2.80	2.55	5.21
10052.82	10062.46	1.89	1.09	2.32	0.04	0.53	1.73

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 2.034

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9916.2	1514	9925.8	1510.8	9929.5	1509.9	9942.8	1505.1	9967.1	1501.7
9968	1501.5	9970.1	1501.1	9984.2	1498.4	9985.3	1498.2	9994.6	1496.8
9996.1	1496.7	10007.1	1496.7	10013.5	1497.1	10019.6	1497.7	10023.1	1498.4
10034.5	1499.7	10038.4	1500.1	10068.3	1518	10078.3	1523.9	10078.5	1523.9

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9916.2	.055	9970.1	.04	10038.4	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970.1	10038.4	501.4	498.54	496.04	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9934.17	9952.13	0.01	0.02	0.56	0.00	0.04	0.29
9952.13	9970.10	76.16	24.28	18.17	1.67	1.35	3.14
LB 9970.10	9983.76	496.99	55.73	13.91	10.88	4.08	8.92
9983.76	9997.42	1068.58	87.93	13.79	23.38	6.44	12.15
9997.42	10011.08	1276.69	97.47	13.67	27.94	7.14	13.10
10011.08	10024.74	1015.83	85.24	13.77	22.23	6.24	11.92
10024.74	RB 10038.40	592.59	61.64	13.74	12.97	4.51	9.61
10038.40	10051.77	43.16	11.88	7.34	0.94	1.89	3.63

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9970.10	9983.76	456.14	56.72	16.75	9.98	4.15	8.04
9983.76	9997.42	1098.43	88.92	13.79	24.04	6.51	12.35
9997.42	10011.08	1309.95	98.47	13.67	28.66	7.21	13.30
10011.08	10024.74	1044.81	86.24	13.77	22.86	6.31	12.12
10024.74	RB 10038.40	614.00	62.63	13.74	13.44	4.59	9.80
10038.40	10051.77	46.68	12.34	7.42	1.02	1.96	3.78

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross

section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 1.940

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9890.7	1506	9891.8	1505.9	9893.4	1505.7	9901.6	1505.3	9904.1	1505
9905.7	1504.8	9907.7	1504.6	9913	1504	9913.6	1504	9916.7	1503.9
9922.6	1503.3	9926.6	1503	9930.4	1502.6	9940.6	1501.3	9945.3	1500.8
9955.6	1497.5	9962.3	1495.4	9966.6	1493.9	9977.8	1493	9978	1493
9986	1491.7	9986.9	1491.5	9990.9	1491.5	10005.1	1491.6	10013.6	1491.8
10017.5	1492	10023.9	1493.7	10037.4	1497.3	10039	1497.6	10049.6	1499.5
10050.8	1500	10051.6	1500.3	10075.5	1510				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9890.7	.055	9955.6	.04	10037.4	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9955.6	10037.4	496.97	493.82	489.63	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9933.97	9955.60	0.21	0.21	1.19	0.00	0.18	1.00
LB 9955.60	9971.96	364.65	45.70	16.95	7.98	2.79	7.98
9971.96	9988.32	1081.37	86.80	16.51	23.66	5.31	12.46
9988.32	10004.68	1457.26	103.44	16.36	31.89	6.32	14.09
10004.68	10021.04	1310.77	97.38	16.49	28.68	5.95	13.46
10021.04	RB 10037.40	354.58	44.91	16.93	7.76	2.75	7.89
10037.40	10050.10	1.16	0.86	3.12	0.03	0.28	1.35

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m), between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9933.97	9955.60	0.22	0.22	1.20	0.00	0.19	1.02
LB 9955.60	9971.96	365.52	45.85	16.95	8.00	2.80	7.97
9971.96	9988.32	1081.16	86.95	16.51	23.66	5.31	12.43
9988.32	10004.68	1456.31	103.59	16.36	31.87	6.33	14.06
10004.68	10021.04	1310.11	97.53	16.49	28.67	5.96	13.43
10021.04	RB 10037.40	355.46	45.06	16.93	7.78	2.75	7.89
10037.40	10050.10	1.22	0.89	3.13	0.03	0.29	1.37

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m), between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 1.846

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9934.5	1506.8	9946.4	1500.5	9958	1494.9	9963.9	1492.1	9972.5	1487.9
9977	1486.9	9977.5	1486.8	9978.3	1486.7	9982.6	1486.3	10015.6	1485.7
10015.8	1485.7	10015.9	1485.7	10016.2	1485.8	10037.8	1492	10042	1493.2
10057.1	1493.9	10065.9	1494.3	10067.5	1494.3	10080.1	1495	10115.8	1497.1
10122.3	1497.3	10136.8	1497.4	10148	1497.8	10148.7	1497.9	10148.8	1497.9

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9934.5	.055	9963.9	.04	10037.8	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9963.9	10037.8	157.05	147.91	138.83	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9954.10	9963.90	3.15	1.91	3.14	0.07	0.67	1.65
LB 9963.90	9978.68	543.05	68.06	15.88	11.88	4.60	7.98
9978.68	9993.46	1190.32	105.96	14.80	26.05	7.17	11.23
9993.46	10008.24	1277.69	110.51	14.78	27.96	7.48	11.56
10008.24	10023.02	1187.83	106.61	15.07	25.99	7.21	11.14
10023.02	RB 10037.80	362.40	52.71	15.38	7.93	3.57	6.87
10037.80	10074.80	5.55	4.20	9.66	0.12	0.44	1.32

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9954.10	9963.90	3.07	1.86	3.10	0.07	0.66	1.65
LB 9963.90	9978.68	542.25	67.83	15.88	11.87	4.59	7.99
9978.68	9993.46	1190.96	105.73	14.80	26.06	7.15	11.26
9993.46	10008.24	1278.57	110.28	14.78	27.98	7.46	11.59
10008.24	10023.02	1188.50	106.38	15.07	26.01	7.20	11.17
10023.02	RB 10037.80	361.28	52.48	15.38	7.91	3.55	6.88
10037.80	10074.80	5.38	4.05	9.33	0.12	0.44	1.33

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 1.818

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9945.8	1500.7	9946.4	1500.3	9951	1497.7	9964	1490.9	9965.4	1490.2
9973.5	1486.1	9979.5	1485.2	9980.5	1485	9998.9	1485.1	10000.6	1485.1
10003.7	1485	10008	1484.9	10011.4	1484.9	10018	1485.1	10027.1	1487.3
10042.2	1491.1	10070.3	1492.3	10097.4	1493.1	10137.7	1494.8	10144.1	1495.2
10157.3	1495.5	10159.6	1495.5						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9945.8	.055	9964	.04	10042.2	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9964	10042.2	218.93	194.96	145.84	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.93	9964.00	0.05	0.06	0.56	0.00	0.13	0.77
LB 9964.00	9979.64	568.44	59.13	16.85	12.44	3.78	9.61
9979.64	9995.28	1331.49	95.68	15.66	29.14	6.12	13.92
9995.28	10010.92	1344.39	96.20	15.64	29.42	6.15	13.98
10010.92	10026.56	1118.34	86.68	15.89	24.47	5.54	12.90
10026.56	RB 10042.20	207.27	31.72	16.13	4.54	2.03	6.54
10042.20	10081.33	0.01	0.04	1.41	0.00	0.03	0.31

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.93	9964.00	0.06	0.08	0.59	0.00	0.15	0.83
LB 9964.00	9979.64	570.09	59.52	16.85	12.47	3.81	9.58
9979.64	9995.28	1329.73	96.07	15.66	29.10	6.14	13.84
9995.28	10010.92	1342.56	96.59	15.64	29.38	6.18	13.90
10010.92	10026.56	1117.66	87.08	15.89	24.46	5.57	12.84
10026.56	RB 10042.20	209.86	32.11	16.13	4.59	2.05	6.54
10042.20	10081.33	0.04	0.08	1.44	0.00	0.06	0.46

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 1.781

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9967.7	1500.3	9968.3	1500.4	9973.1	1496.7	9983.4	1488	9988.4	1483.7
9991.3	1483.7	9994.9	1482.3	10005.7	1482.2	10009.7	1482.2	10021.6	1482.1
10031	1482.1	10042.5	1483.9	10054.5	1486	10086.1	1487.7	10089.4	1487.9
10092.2	1488	10097.7	1488.3	10120.6	1489.1	10136.2	1489.3	10141	1489.3
10142.6	1489.4	10143.2	1489.4	10151.3	1489.7	10152.4	1489.7	10155.4	1489.8
10206.2	1494.1	10217.1	1494.9						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9967.7	.055	9983.4	.04	10054.5	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.4	10054.5	175.8	204.14	249.95	.6	.8

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9978.17	9983.40	0.04	0.06	0.48	0.00	0.16	0.72
LB 9983.40	9997.62	591.84	61.17	16.08	12.95	4.30	9.68
9997.62	10011.84	1146.63	86.60	14.22	25.09	6.09	13.24
10011.84	10026.06	1175.64	87.91	14.22	25.73	6.18	13.37
10026.06	10040.28	1032.23	81.57	14.33	22.59	5.74	12.66
10040.28	RB 10054.50	462.11	50.50	14.43	10.11	3.55	9.15
10054.50	10108.70	161.51	49.71	43.55	3.53	1.14	3.25

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9978.17	9983.40	0.04	0.05	0.46	0.00	0.15	0.74
LB 9983.40	9997.62	618.95	60.97	16.08	13.54	4.29	10.15
9997.62	10011.84	1201.05	86.40	14.22	26.28	6.08	13.90
10011.84	10026.06	1231.51	87.72	14.22	26.95	6.17	14.04
10026.06	10040.28	1080.97	81.37	14.33	23.65	5.72	13.28
10040.28	RB 10054.50	437.47	50.30	16.73	9.57	3.54	8.70

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 1.742

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9763.7	1500.8	9765.2	1500.1	9770.4	1497.4	9770.9	1497.2	9772.5	1496.6
9781.5	1492.6	9785.1	1490.9	9793.6	1487.9	9803.2	1485.3	9806.6	1485
9810.3	1484.9	9818.1	1484.8	9833.3	1484.1	9849	1484	9849.6	1484
9851.6	1484	9855.8	1484	9873.9	1484.2	9885.9	1484.4	9891.5	1484.5
9912.7	1484.8	9918.7	1484.5	9940.3	1482.8	9944.1	1482.6	9948.1	1482.1
9953.6	1481.9	9954.1	1481.9	9963	1482.1	9963.6	1482.1	9967.4	1482.1
9978.2	1481.1	9978.3	1481.1	9983.5	1480.7	9983.6	1480.7	10005.2	1479.5
10012.6	1479.6	10025.4	1480	10026.9	1480.2	10034.5	1484.8	10045.7	1491.7
10062.1	1502.5	10068.8	1504.8	10069.2	1504.9	10071.6	1505.5	10076.2	1507
10077.1	1506.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9763.7	.065	9963	.045	10034.5	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9963	10034.5	216.2	344.47	284.25	.6	.8

Ineffective Flow num= 1

Sta L	Sta R	Elev
9763.7	9912.7	1490.6

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9800.95	9838.20	0.00	31.18	35.79	0.00	0.87	0.00
9838.20	9875.45	0.00	53.28	37.25	0.00	1.43	0.00
9875.45	9912.70	0.00	36.22	37.25	0.00	0.97	0.00
9912.70	9963.00	603.45	120.38	50.42	13.20	2.39	5.01
LB 9963.00	9977.30	505.66	53.12	14.34	11.06	3.71	9.52
9977.30	9991.60	780.50	68.91	14.33	17.08	4.82	11.33
9991.60	10005.90	1014.60	80.63	14.32	22.20	5.64	12.58
10005.90	10020.20	1081.45	83.74	14.30	23.66	5.86	12.91
10020.20	RB 10034.50	583.85	59.89	15.60	12.78	4.19	9.75

10034.50	10048.70	0.49	0.40	1.33	0.01	0.35	1.25

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9912.70	9963.00	596.66	112.53	44.17	13.06	2.62	5.30
LB 9963.00	9977.30	504.68	52.66	14.34	11.04	3.68	9.58
9977.30	9991.60	781.62	68.44	14.33	17.10	4.79	11.42
9991.60	10005.90	1017.74	80.16	14.32	22.27	5.61	12.70
10005.90	10020.20	1085.19	83.27	14.30	23.75	5.82	13.03
10020.20	RB 10034.50	583.68	59.42	15.60	12.77	4.16	9.82
10034.50	10048.70	0.44	0.36	1.27	0.01	0.33	1.23

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 1.677

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9924.6	1490	9935.2	1484.8	9943.1	1481.2	9960.1	1479.2	9963.1	1478.8
9964.1	1478.6	9971.5	1476.7	9974	1477	9978	1477.7	9981.6	1477.4
9989.5	1476.9	9993.5	1476.4	9998.7	1475.5	10010.8	1476.3	10014.5	1476.5
10021.4	1476.7	10024	1476.7	10033.9	1476.8	10034.7	1476.8	10036.2	1476.7
10046.9	1476.4	10062.5	1480.8	10067.5	1484.2	10078	1489.9	10081.2	1490.5
10082.5	1490.7	10083	1490.8	10093	1491.3	10105.3	1491.9	10109.1	1492

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9924.6	.055	9943.1	.04	10062.5	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9943.1	10062.5	262.96	255.06	211.86	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9936.93	9943.10	0.25	0.26	1.18	0.01	0.24	0.95
LB 9943.10	9966.98	242.24	46.29	24.14	5.30	1.94	5.23
9966.98	9990.86	974.56	106.73	24.14	21.33	4.47	9.13
9990.86	10014.74	1432.78	134.19	24.01	31.35	5.62	10.68
10014.74	10038.62	1179.60	119.17	23.89	25.81	4.99	9.90
10038.62	RB 10062.50	739.80	90.98	24.49	16.19	3.81	8.13
10062.50	10078.03	0.77	0.58	1.58	0.02	0.44	1.33

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9936.93	9943.10	0.38	0.35	1.26	0.01	0.33	1.07
LB 9943.10	9966.98	252.04	48.31	24.14	5.52	2.02	5.22
9966.98	9990.86	974.29	108.75	24.14	21.32	4.55	8.96
9990.86	10014.74	1423.32	136.21	24.01	31.14	5.70	10.45
10014.74	10038.62	1175.46	121.19	23.89	25.72	5.08	9.70
10038.62	RB 10062.50	743.56	93.00	24.49	16.27	3.89	8.00
10062.50	10078.03	0.96	0.69	1.66	0.02	0.53	1.40

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 1.629

INPUT
Description: 100-year, 24-hour Peak Discharge of 4680 cfs from HEC-1 model at station C105R.
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9940.9	1490.2	9943	1489.3	9945.6	1488.3	9946.1	1488.1	9946.8	1487.8
9965.8	1487	9966.9	1486.8	9967.3	1486.8	9971.8	1483.8	9979.7	1477.9
9982.7	1475.6	9984.9	1475	9991.3	1471.3	9991.5	1471.2	9992	1471.2
10005.6	1471.5	10007	1471.7	10015.8	1472.5	10026.4	1472.9	10032.4	1473.2

10040.8	1473.5	10045.6	1474.3	10051.5	1475.5	10058.7	1476.5	10066	1477
10076	1477	10103.6	1478	10110.1	1479.8	10111	1480	10111.5	1480.1
10119.4	1482	10131.9	1485	10135.7	1485.4	10139.7	1485.7	10141	1485.8
10141.8	1485.8								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9940.9	.055	9979.7	.04	10066	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.7	10066	473.14	493.83	488.71	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9966.77	9979.70	0.06	0.08	0.57	0.00	0.17	0.80
LB 9979.70	9996.96	861.41	83.07	19.14	18.41	4.81	10.37
9996.96	10014.22	1542.79	113.19	17.31	32.97	6.56	13.63
10014.22	10031.48	1140.74	94.38	17.28	24.37	5.47	12.09
10031.48	10048.74	825.18	77.92	17.40	17.63	4.51	10.59
10048.74	RB 10066.00	220.78	35.33	17.40	4.72	2.05	6.25
10066.00	10081.16	57.58	18.31	15.16	1.23	1.21	3.14
10081.16	10096.32	27.65	11.79	15.17	0.59	0.78	2.34
10096.32	10111.48	3.82	2.81	8.18	0.08	0.34	1.36

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9966.77	9979.70	0.11	0.12	0.65	0.00	0.26	0.95
LB 9979.70	9996.96	881.30	84.57	19.14	18.83	4.90	10.42
9996.96	10014.22	1566.00	114.70	17.31	33.46	6.65	13.65
10014.22	10031.48	1162.95	95.89	17.28	24.85	5.56	12.13
10031.48	10048.74	845.88	79.43	17.40	18.07	4.60	10.65
10048.74	RB 10066.00	223.75	36.84	18.73	4.78	2.13	6.07

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 1.535

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9897.4	1481.8	9922.2	1473.2	9932.1	1469.6	9936.2	1469.6	9943.4	1469.7
9950.4	1469.2	9959.3	1468.3	9966.3	1467	9971.8	1466.2	9982.1	1465.9
9989.2	1465.6	9991.8	1465.5	9992.6	1465.3	9993.7	1464.8	9999	1464.8
10005.9	1464.9	10013.8	1466.9	10018.3	1467.9	10021	1468.2	10029.4	1469.2
10043.7	1476.7	10055.6	1482.9	10066	1483.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9897.4	.055	9943.4	.04	10018.3	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9943.4	10018.3	255.19	287.48	245.01	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9912.73	9928.07	0.33	0.31	1.39	0.01	0.24	1.08
9928.07	9943.40	110.18	26.43	15.59	2.35	1.72	4.17
LB 9943.40	9958.38	264.80	36.52	15.04	5.66	2.44	7.25
9958.38	9973.36	700.86	65.70	15.16	14.98	4.39	10.67
9973.36	9988.34	1067.70	84.19	14.99	22.81	5.62	12.68
9988.34	10003.32	1354.04	97.42	15.12	28.93	6.50	13.90
10003.32	RB 10018.30	972.85	80.36	15.34	20.79	5.36	12.11
10018.30	10034.20	209.24	38.50	16.21	4.47	2.47	5.44

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9912.73	9928.07	0.66	0.47	1.51	0.01	0.36	1.40
9928.07	9943.40	128.19	28.36	15.59	2.74	1.85	4.52
LB 9943.40	9958.38	297.74	38.41	15.04	6.36	2.56	7.75
9958.38	9973.36	759.59	67.59	15.16	16.23	4.51	11.24
9973.36	9988.34	1145.37	86.08	14.99	24.47	5.75	13.31
9988.34	10003.32	1445.35	99.31	15.12	30.88	6.63	14.55
10003.32	RB 10018.30	903.10	82.25	19.10	19.30	5.49	10.98

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 1.481

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9958.9	1487.1	9962.9	1485.3	9969.9	1482	9975.2	1479.8	9986.6	1474
9989.6	1465.5	9989.9	1464.8	9992	1459.8	9995.1	1459.8	10000.2	1459.7
10004.4	1459.3	10009.3	1460.1	10010	1460.2	10010.8	1460.2	10025.9	1460.7
10028.5	1460.4	10035.8	1460.1	10039.6	1460.1	10041.9	1460.3	10053.6	1465.6
10059.2	1468.1	10060.7	1468.7	10061.3	1468.9	10068.2	1471.4	10069.2	1472
10070.1	1472.3	10070.6	1472.6	10079.7	1477.6	10080.2	1478.1	10091.6	1484.3
10093.8	1485.4	10096.5	1486.6	10105.3	1490.2				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9958.9	.055	9989.6	.04	10053.6	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9989.6	10053.6	230.21	224.54	206.35	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9979.37	9989.60	0.07	0.09	0.75	0.00	0.35	0.79
LB 9989.60	10002.40	918.38	75.86	16.60	19.62	5.93	12.11
10002.40	10015.20	1204.49	80.67	12.88	25.74	6.30	14.93
10015.20	10028.00	1014.95	72.65	12.82	21.69	5.68	13.97
10028.00	10040.80	1115.03	76.86	12.81	23.83	6.00	14.51
10040.80	RB 10053.60	426.50	44.67	13.95	9.11	3.49	9.55
10053.60	10070.83	0.58	0.41	1.49	0.01	0.30	1.40

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9979.37	9989.60	0.08	0.10	0.79	0.00	0.39	0.81
LB 9989.60	10002.40	917.82	76.36	16.60	19.61	5.97	12.02
10002.40	10015.20	1202.99	81.16	12.88	25.70	6.34	14.82
10015.20	10028.00	1014.80	73.15	12.82	21.68	5.71	13.87
10028.00	10040.80	1114.20	77.35	12.81	23.81	6.04	14.41
10040.80	RB 10053.60	429.43	45.16	13.95	9.18	3.53	9.51
10053.60	10070.83	0.69	0.47	1.53	0.01	0.34	1.47

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 1.438

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9944.7	1478.4	9956.2	1475	9960.3	1472.8	9968.4	1463.4	9969.1	1462.6
9970.9	1460.5	9972.4	1460.2	9984.9	1457.9	9988.3	1458.1	9992.5	1458.5
10005.3	1458.2	10028.3	1457.9	10030.5	1458	10035.7	1458	10047.2	1458.8
10050.3	1459.5	10053	1460.4	10059.1	1462.6	10061.5	1463.4	10066.3	1465
10074.5	1467.8	10078.5	1468.4	10080.9	1468.6	10094.3	1474.2		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9944.7	.055	9969.1	.04	10059.1	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969.1	10059.1	105.06	102.65	98.84	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9960.97	9969.10	0.11	0.11	0.67	0.00	0.25	0.98
LB 9969.10	9987.10	710.06	68.86	19.21	15.17	3.83	10.31
9987.10	10005.10	1074.04	86.05	18.02	22.95	4.78	12.48
10005.10	10023.10	1164.73	90.29	18.00	24.89	5.02	12.90
10023.10	10041.10	1185.12	91.26	18.02	25.32	5.07	12.99
10041.10	RB 10059.10	545.47	58.06	18.62	11.66	3.23	9.40
10059.10	10070.83	0.47	0.38	1.59	0.01	0.25	1.25

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9960.97	9969.10	0.12	0.12	0.68	0.00	0.26	1.00
LB 9969.10	9987.10	710.64	69.09	19.21	15.18	3.84	10.29
9987.10	10005.10	1073.70	86.28	18.02	22.94	4.79	12.44
10005.10	10023.10	1164.11	90.52	18.00	24.87	5.03	12.86
10023.10	10041.10	1184.43	91.50	18.02	25.31	5.08	12.95
10041.10	RB 10059.10	546.49	58.29	18.62	11.68	3.24	9.38
10059.10	10070.83	0.51	0.40	1.60	0.01	0.26	1.28

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 1.419

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9923.9	1479.8	9924.6	1479.8	9930.2	1477.2	9948.8	1468.3	9953.5	1463.6
9958.5	1457.9	9960.1	1457.9	9977.1	1456.7	9982.5	1456.2	9987.9	1451.1
9994.4	1445.6	9996.1	1445.9	9998.5	1446.4	10001	1446.7	10005	1446.9
10005.9	1447	10008.6	1446.8	10009.2	1446.6	10014.2	1454.5	10014.3	1454.7
10014.8	1454.9	10038.1	1459.7	10040.6	1460.2	10041.4	1460.5	10043.4	1461.2
10044.8	1461.7	10056.8	1465.1	10061.7	1467				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9923.9	.055	9982.5	.04	10014.3	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.5	10014.3	294.48	297.55	301.27	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)

9943.43	9962.97	4.29	2.59	5.13	0.09	0.53	1.66
9962.97	9982.50	89.34	27.32	19.59	1.91	1.40	3.27
LB 9982.50	9988.86	276.42	32.99	8.69	5.91	5.19	8.38
9988.86	9995.22	974.68	68.29	8.09	20.83	10.74	14.27
9995.22	10001.58	1379.68	76.81	6.44	29.48	12.08	17.96
10001.58	10007.94	1284.43	73.27	6.37	27.45	11.52	17.53
10007.94	RB 10014.30	545.18	54.24	10.87	11.65	8.53	10.05
10014.30	10030.10	125.77	31.09	16.16	2.69	1.97	4.05
10030.10	10045.90	0.22	0.28	1.68	0.00	0.17	0.79

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9943.43	9962.97	5.94	3.22	5.25	0.13	0.66	1.85
9962.97	9982.50	101.25	29.83	19.59	2.16	1.53	3.39
LB 9982.50	9988.86	280.48	33.81	8.69	5.99	5.32	8.30
9988.86	9995.22	968.49	69.11	8.09	20.69	10.87	14.01
9995.22	10001.58	1367.92	77.63	6.44	29.23	12.21	17.62
10001.58	10007.94	1274.57	74.09	6.37	27.23	11.65	17.20
10007.94	RB 10014.30	544.49	55.05	10.87	11.63	8.66	9.89
10014.30	10030.10	136.33	33.12	16.16	2.91	2.10	4.12
10030.10	10045.90	0.52	0.49	1.80	0.01	0.30	1.07

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 1.363

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9928.3	1464.3	9929.4	1463.9	9933.8	1461.9	9938.5	1459.9	9943.2	1457.8
9956.3	1450.9	9958.8	1449.6	9959.5	1449.3	9960.2	1449.1	9965.2	1447.8
9968.8	1447	9972.1	1446.3	9976	1445.2	9983.8	1444.1	9985.7	1444
9986.6	1443.9	9992.2	1443.6	9995.4	1443.1	9999.4	1443	10000.5	1442.9
10004.7	1443.1	10005.9	1443.6	10011.1	1447.5	10015.6	1450.9	10023.4	1456.7
10030.6	1460.2	10031.4	1460.6	10034.3	1461.9	10042.4	1466.3	10051.8	1470.4
10053.1	1470.9	10053.5	1471.1	10056.7	1472.2				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9928.3	.055	9956.3	.04	10015.6	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9956.3	10015.6	517.44	534.12	545.05	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9946.97	9956.30	0.29	0.24	1.09	0.01	0.25	1.18
LB 9956.30	9968.16	247.00	32.24	12.51	5.28	2.72	7.66
9968.16	9980.02	844.64	66.62	12.14	18.05	5.62	12.68
9980.02	9991.88	1352.07	87.68	11.91	28.89	7.39	15.42
9991.88	10003.74	1636.58	98.31	11.91	34.97	8.29	16.65
10003.74	RB 10015.60	599.23	58.05	14.40	12.80	4.89	10.32
10015.60	10029.30	0.19	0.17	0.85	0.00	0.25	1.11

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9946.97	9956.30	0.32	0.26	1.11	0.01	0.28	1.23

LB 9956.30	9968.16	248.87	32.50	12.51	5.32	2.74	7.66
9968.16	9980.02	845.21	66.88	12.14	18.06	5.64	12.64
9980.02	9991.88	1350.89	87.94	11.91	28.87	7.41	15.36
9991.88	10003.74	1634.28	98.57	11.91	34.92	8.31	16.58
10003.74	RB 10015.60	600.21	58.31	14.40	12.82	4.92	10.29
10015.60	10029.30	0.21	0.19	0.87	0.00	0.28	1.14

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 1.261

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9934	1472.2	9936.3	1469.6	9943.3	1464.6	9950.7	1456.7	9952.7	1455.1
9958.5	1445.8	9960.3	1444.2	9964.9	1439.1	9966.4	1438.5	9967.7	1438.1
9973.5	1435.2	9983.5	1433.6	9986.3	1433.2	9987.8	1433	9998.8	1431.6
10000.5	1431.2	10000.9	1431.1	10001.6	1431.2	10017.2	1433.1	10020.7	1433.5
10025.8	1434.3	10040.3	1435.8	10044.3	1436.5	10046.3	1437	10052	1438.4
10054.8	1439.2	10058.5	1440.6	10063.4	1443	10067.1	1453.1	10068.9	1457.2
10070.3	1458.2	10075.4	1461.1	10082.2	1464.7	10084.9	1465.8		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9934	.055	9966.4	.04	10052	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9966.4	10052	487.72	495.87	493.03	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9955.60	9966.40	0.31	0.29	1.30	0.01	0.24	1.08
LB 9966.40	9983.52	507.71	60.33	17.99	10.85	3.52	8.42
9983.52	10000.64	1457.51	111.82	17.30	31.14	6.53	13.03
10000.64	10017.76	1582.81	117.36	17.25	33.82	6.86	13.49
10017.76	10034.88	849.13	80.76	17.25	18.14	4.72	10.51
10034.88	RB 10052.00	281.79	41.85	17.44	6.02	2.44	6.73
10052.00	10062.97	0.74	0.59	2.12	0.02	0.29	1.25

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9955.60	9966.40	0.08	0.10	0.77	0.00	0.14	0.82
LB 9966.40	9983.52	491.95	57.00	17.99	10.51	3.33	8.63
9983.52	10000.64	1476.18	108.48	17.30	31.54	6.34	13.61
10000.64	10017.76	1606.96	114.03	17.25	34.34	6.66	14.09
10017.76	10034.88	843.15	77.43	17.25	18.02	4.52	10.89
10034.88	RB 10052.00	261.40	38.52	17.44	5.59	2.25	6.79
10052.00	10062.97	0.27	0.26	1.41	0.01	0.19	1.02

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 1.168

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9856	1438	9857.1	1437.9	9858.2	1437.8	9865.3	1437.2	9865.4	1437.2
9866	1437.2	9873.3	1436.6	9878.3	1436	9885.7	1435.2	9885.8	1435.2
9892.2	1434.6	9892.5	1434.6	9897	1434.1	9897.4	1434.1	9899.4	1434
9910.8	1433.5	9912.7	1433.4	9917.2	1433.2	9920.6	1433.1	9926.9	1432.7
9931.7	1432.4	9936	1432.3	9942.6	1431.8	9947.2	1431.7	9957.1	1431.5
9959.4	1431.5	9960.3	1431.5	9961.9	1431.4	9963.4	1431.3	9964.8	1431.1
9972.8	1430.1	9975.7	1429.9	9981.3	1429.2	9981.4	1429.2	9984.9	1427.8
9992	1425.1	10003	1425.3	10009	1425.4	10014.2	1426	10017.1	1426.3
10020.2	1426.6	10023.1	1426.9	10033.5	1432.6	10037.8	1435	10039	1435.6
10048.5	1441.2	10056.3	1445.8						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

9856 .055 9981.4 .04 10033.5 .055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.4	10033.5	404.5	397.21	387.72	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9906.16	9931.24	7.03	5.85	15.63	0.15	0.37	1.20
9931.24	9956.32	98.85	34.55	25.10	2.11	1.38	2.86
9956.32	9981.40	303.26	67.81	25.21	6.48	2.70	4.47
LB 9981.40	9991.82	722.16	63.65	11.17	15.43	6.11	11.35
9991.82	10002.24	1204.20	84.17	10.43	25.73	8.08	14.31
10002.24	10012.66	1143.02	81.61	10.45	24.42	7.83	14.01
10012.66	10023.08	923.68	71.90	10.48	19.74	6.90	12.85
10023.08	RB 10033.50	277.30	36.73	11.88	5.93	3.53	7.55
10033.50	10041.10	0.48	0.40	1.37	0.01	0.33	1.20

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9906.16	9931.24	13.54	8.89	15.83	0.29	0.57	1.52
9931.24	9956.32	119.23	39.42	25.10	2.55	1.57	3.02
9956.32	9981.40	329.58	72.68	25.21	7.04	2.90	4.53
LB 9981.40	9991.82	716.94	65.67	11.17	15.32	6.30	10.92
9991.82	10002.24	1180.56	86.19	10.43	25.23	8.27	13.70
10002.24	10012.66	1121.95	83.63	10.45	23.97	8.03	13.41
10012.66	10023.08	911.59	73.92	10.48	19.48	7.09	12.33
10023.08	RB 10033.50	285.73	38.76	11.88	6.11	3.72	7.37
10033.50	10041.10	0.89	0.63	1.57	0.02	0.53	1.40

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 1.092

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9923.4	1441.8	9943.8	1429.9	9951.4	1425.5	9951.8	1425.3	9952.1	1425.2
9965.2	1422.9	9970.4	1420.7	9970.7	1420.6	9971.8	1420.8	9977.8	1422.1
9983.5	1421.2	9987.2	1420.8	9990.5	1420.8	10017	1420.9	10017.1	1420.9
10017.4	1421	10032.9	1425.6	10034.6	1426.2	10034.7	1426.2	10050.1	1427.5
10061.7	1428.6	10069.1	1429.2	10084.1	1432.8	10086.4	1433.3	10100.3	1436.5
10118	1440.1								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9923.4	.055	9943.8	.04	10034.7	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9943.8	10034.7	199.37	212.66	221.85	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9937.00	9943.80	7.83	9.10	6.47	0.17	1.63	0.86
LB 9943.80	9961.98	446.21	134.15	19.58	9.53	7.38	3.33
9961.98	9980.16	930.02	205.44	18.88	19.87	11.30	4.53
9980.16	9998.34	1079.53	221.60	18.24	23.07	12.19	4.87
9998.34	10016.52	1097.68	223.52	18.18	23.45	12.29	4.91
10016.52	RB 10034.70	720.63	176.61	18.97	15.40	9.71	4.08
10034.70	10051.36	219.97	104.21	16.72	4.70	6.25	2.11
10051.36	10068.02	139.77	79.39	16.73	2.99	4.77	1.76

10068.02	10084.68	38.35	36.87	17.10	0.82	2.21	1.04
10084.68	10101.34	0.02	0.12	1.09	0.00	0.12	0.15

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9937.00	9943.80	7.88	9.15	6.48	0.17	1.64	0.86
LB 9943.80	9961.98	446.40	134.31	19.58	9.54	7.39	3.32
9961.98	9980.16	929.82	205.59	18.88	19.87	11.31	4.52
9980.16	9998.34	1079.20	221.75	18.24	23.06	12.20	4.87
9998.34	10016.52	1097.33	223.67	18.18	23.45	12.30	4.91
10016.52	RB 10034.70	720.62	176.76	18.97	15.40	9.72	4.08
10034.70	10051.36	220.18	104.34	16.72	4.70	6.26	2.11
10051.36	10068.02	140.00	79.53	16.73	2.99	4.77	1.76
10068.02	10084.68	38.54	37.01	17.10	0.82	2.22	1.04
10084.68	10101.34	0.02	0.13	1.10	0.00	0.12	0.15

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 1.052

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9885.6	1440.2	9898.1	1436.1	9905.2	1433.7	9915.5	1429.4	9915.8	1429.4
9916.1	1429.4	9916.2	1429.4	9917.1	1429.4	9918.4	1429.4	9921.1	1428.8
9923.9	1428.6	9926.4	1428.1	9930.4	1428.1	9931.4	1428.1	9935.2	1427.7
9936.3	1427.8	9938.6	1427.9	9940.8	1428.2	9941.6	1428.3	9943.7	1428.9
9947.1	1428.9	9949.4	1429.3	9951.6	1429.2	9953.7	1428.6	9955.4	1428.8
9957.7	1428.3	9959.3	1428.4	9967.4	1426.4	9968.8	1426.1	9971.4	1425.2
9971.8	1425	9972	1424.9	9975.7	1426.3	9975.9	1426.3	9976.4	1426.5
9977.6	1426.2	9984.9	1424.6	9984.9	1424.5	9985.5	1423.2	9986.9	1419.7
9988.9	1415.4	9989.3	1412.7	9990.2	1412.6	9992	1412.5	9996	1412.7
9999.2	1412.8	10000.5	1412.9	10007	1425.4	10007.8	1426.8	10008.3	1427.3
10008.3	1427.4	10014.8	1432.6	10018.6	1434.3	10019.9	1435.1	10022.6	1436.4
10024.1	1436.8	10025.7	1438	10025.8	1438				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9885.6	.055	9984.9	.04	10008.3	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.9	10008.3	303.98	298.99	280.72	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
9885.6	9949.4	1434.4

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9906.87	9928.13	0.00	0.23	2.31	0.00	0.10	0.00
9928.13	9949.40	0.00	3.25	12.81	0.00	0.25	0.00
9949.40	9967.15	16.89	6.20	7.30	0.36	0.88	2.72
9967.15	9984.90	251.18	45.47	18.52	5.37	2.56	5.52
LB 9984.90	9989.58	332.37	43.42	13.06	7.10	9.28	7.66
9989.58	9994.26	1571.86	73.23	4.69	33.59	15.65	21.47
9994.26	9998.94	1548.70	72.55	4.68	33.09	15.50	21.35
9998.94	10003.62	820.74	62.39	8.33	17.54	13.33	13.16
10003.62	RB 10008.30	137.64	22.76	9.75	2.94	4.86	6.05
10008.30	10014.13	0.63	0.41	1.30	0.01	0.41	1.52

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9906.87	9928.13	0.00	0.17	2.19	0.00	0.08	0.00
9928.13	9949.40	0.00	2.96	12.63	0.00	0.23	0.00
9949.40	9967.15	16.37	6.04	7.21	0.35	0.86	2.71
9967.15	9984.90	248.47	45.06	18.52	5.31	2.54	5.51
LB 9984.90	9989.58	332.18	43.31	13.06	7.10	9.25	7.67
9989.58	9994.26	1573.63	73.12	4.69	33.62	15.62	21.52
9994.26	9998.94	1550.41	72.44	4.68	33.13	15.48	21.40
9998.94	10003.62	821.31	62.28	8.33	17.55	13.31	13.19
10003.62	RB 10008.30	137.04	22.65	9.75	2.93	4.84	6.05
10008.30	10014.13	0.58	0.39	1.26	0.01	0.39	1.50

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.995

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9930.6	1459.8	9935.7	1457.5	9951.5	1450.3	9952.1	1448.8	9953.8	1443.7
9962.5	1416.2	9970.8	1414.8	9991.4	1410.8	9993.6	1410	9995	1409.6
10004.6	1409.7	10006.2	1409.6	10014.7	1409.7	10020.7	1411.4	10023.4	1412.9
10027.3	1415.6	10027.3	1415.7	10040	1421.4	10042.4	1422.9	10055.5	1433.5
10057	1434.6	10062.8	1438.9	10063.3	1439.5	10065.8	1439.1	10067.8	1438.6

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9930.6	.055	9962.5	.04	10027.3	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9962.5	10027.3	210.04	204.67	204.72	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9951.87	9962.50	0.40	0.38	1.62	0.01	0.77	1.07
LB 9962.50	9975.46	237.77	34.41	13.16	5.08	2.65	6.91
9975.46	9988.42	705.30	66.14	13.20	15.07	5.10	10.66
9988.42	10001.38	1376.19	98.81	13.21	29.41	7.62	13.93
10001.38	10014.34	1536.52	104.76	12.96	32.83	8.08	14.67
10014.34	RB 10027.30	811.32	74.75	14.53	17.34	5.77	10.85
10027.30	10040.80	12.49	4.64	4.98	0.27	1.02	2.69

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9951.87	9962.50	0.39	0.37	1.60	0.01	0.77	1.07
LB 9962.50	9975.46	236.78	34.26	13.16	5.06	2.64	6.91
9975.46	9988.42	704.82	65.99	13.20	15.06	5.09	10.68
9988.42	10001.38	1376.95	98.66	13.21	29.42	7.61	13.96
10001.38	10014.34	1537.59	104.61	12.96	32.85	8.07	14.70
10014.34	RB 10027.30	811.12	74.60	14.53	17.33	5.76	10.87
10027.30	10040.80	12.35	4.59	4.95	0.26	1.01	2.69

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.957

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9961.8	1428.7	9961.9	1428.6	9962.6	1427.9	9967	1424.3	9968.6	1422.8
9969.7	1421.7	9972.2	1421.3	9973.4	1420.9	9982.1	1413.6	9985.5	1410.7
9993.6	1405.8	10004.9	1405.7	10009.1	1405.6	10011.3	1406.3	10014.3	1406.6
10019.8	1406.8	10032.9	1413.6	10035.8	1415.1	10043.2	1418.8	10044.3	1419.5
10054.1	1424.5	10060.3	1428.9	10061.9	1430.8				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9961.8	.055	9982.1	.04	10032.9	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.1	10032.9	221.34	213.57	202.55	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9975.33	9982.10	0.37	0.28	1.07	0.01	0.35	1.31
LB 9982.10	9992.26	434.63	45.37	12.37	9.29	4.47	9.58
9992.26	10002.42	1419.58	86.06	10.39	30.33	8.47	16.50
10002.42	10012.58	1429.64	86.06	10.28	30.55	8.47	16.61
10012.58	10022.74	1114.85	74.90	10.54	23.82	7.37	14.88
10022.74	RB 10032.90	280.26	33.80	11.45	5.99	3.33	8.29
10032.90	10042.57	0.67	0.46	1.50	0.01	0.34	1.45

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9975.33	9982.10	0.40	0.30	1.09	0.01	0.36	1.33
LB 9982.10	9992.26	435.56	45.53	12.37	9.31	4.48	9.57
9992.26	10002.42	1418.62	86.22	10.39	30.31	8.49	16.45
10002.42	10012.58	1428.67	86.22	10.28	30.53	8.49	16.57
10012.58	10022.74	1114.62	75.06	10.54	23.82	7.39	14.85
10022.74	RB 10032.90	281.42	33.96	11.45	6.01	3.34	8.29
10032.90	10042.57	0.71	0.48	1.52	0.02	0.36	1.48

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.916

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9952.9	1451.1	9957.7	1450.5	9963.6	1441.1	9980.1	1410	9982	1406.5
9984.3	1406.2	9987.3	1404.8	9990.2	1403.6	9993.4	1403.5	10007.3	1402.6
10011.1	1402.7	10014.8	1404.3	10022.2	1406.9	10026.8	1407.5	10037.2	1409.1
10037.3	1409.1	10050.7	1416.9	10064	1428.5	10064.7	1429	10064.8	1429

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9952.9	.055	9980.1	.04	10037.3	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980.1	10037.3	280.25	277.42	271.8	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9971.03	9980.10	0.46	0.35	1.30	0.01	0.57	1.32
LB 9980.10	9991.54	710.87	63.77	14.09	15.19	5.57	11.15
9991.54	10002.98	1459.52	90.39	11.46	31.19	7.90	16.15
10002.98	10014.42	1539.71	94.27	11.75	32.90	8.24	16.33
10014.42	10025.86	684.38	58.35	11.95	14.62	5.10	11.73
10025.86	RB 10037.30	274.55	33.30	11.57	5.87	2.91	8.24
10037.30	10046.47	10.51	3.60	4.07	0.22	1.02	2.92

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9971.03	9980.10	0.49	0.37	1.33	0.01	0.60	1.33
LB 9980.10	9991.54	711.65	64.11	14.09	15.21	5.60	11.10
9991.54	10002.98	1457.24	90.74	11.46	31.14	7.93	16.06
10002.98	10014.42	1536.90	94.62	11.75	32.84	8.27	16.24
10014.42	10025.86	685.71	58.70	11.95	14.65	5.13	11.68
10025.86	RB 10037.30	277.13	33.65	11.57	5.92	2.94	8.24
10037.30	10046.47	10.88	3.71	4.10	0.23	1.05	2.94

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.864

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9946.1	1418	9951.3	1415.8	9958.1	1413.1	9962.6	1410.2	9969.6	1405.4
9969.7	1405.4	9973.2	1403.3	9981.1	1399.7	9984.2	1398.1	9984.5	1398.1
9998.6	1398.6	10002.7	1398.9	10009.1	1399.6	10011.4	1399.5	10018.1	1399.6
10027.3	1402	10029.4	1402.6	10030	1403.1	10033.5	1404.3	10034.8	1405.2
10034.9	1405.2	10036	1405.6	10045.5	1411.7	10046.3	1412.9	10046.8	1413.1
10057.7	1420.5	10058.8	1421.2	10061.1	1422.7				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9946.1	.055	9969.7	.04	10034.9	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969.7	10034.9	477.04	497.77	504.59	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9961.83	9969.70	0.11	0.11	0.69	0.00	0.19	0.96
LB 9969.70	9982.74	450.32	48.84	14.61	9.62	3.75	9.22
9982.74	9995.78	1501.76	96.70	13.23	32.09	7.42	15.53
9995.78	10008.82	1307.98	88.63	13.09	27.95	6.80	14.76
10008.82	10021.86	1065.35	78.56	13.17	22.76	6.02	13.56
10021.86	RB 10034.90	353.98	41.52	13.97	7.56	3.18	8.52
10034.90	10043.63	0.50	0.38	1.41	0.01	0.29	1.33

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9961.83	9969.70	0.22	0.19	0.82	0.00	0.33	1.16
LB 9969.70	9982.74	459.49	50.56	14.61	9.82	3.88	9.09
9982.74	9995.78	1489.76	98.41	13.23	31.83	7.55	15.14
9995.78	10008.82	1300.95	90.34	13.09	27.80	6.93	14.40
10008.82	10021.86	1063.93	80.27	13.17	22.73	6.16	13.25
10021.86	RB 10034.90	364.81	43.24	13.97	7.79	3.32	8.44
10034.90	10043.63	0.85	0.55	1.54	0.02	0.42	1.54

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.769

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9953	1419.4	9956.4	1418	9964.1	1412.1	9970.4	1407.4	9978.2	1401.8
9980.4	1400.5	9981.2	1400	9991	1393.4	9994.6	1388.7	9994.9	1387.9
9995.8	1387.9	10002.4	1388.5	10010.9	1391.5	10018.5	1394	10018.6	1394

10025.8	1393.8	10026.4	1393.7	10027.7	1394	10045	1397.5	10058.9	1399.7
10061	1400.1	10072.3	1405.9	10092.5	1417				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9953	.065	9981.2	.045	10018.6	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.2	10018.6	114.28	129.28	157.26	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9971.80	9981.20	0.26	0.31	1.17	0.01	0.31	0.87
LB 9981.20	9988.68	123.44	23.45	9.02	2.64	3.14	5.26
9988.68	9996.16	661.24	69.09	10.83	14.13	9.24	9.57
9996.16	10003.64	1355.36	92.13	7.58	28.96	12.32	14.71
10003.64	10011.12	985.72	77.49	7.93	21.06	10.36	12.72
10011.12	RB 10018.60	619.29	58.45	7.87	13.23	7.81	10.60
10018.60	10033.38	612.69	95.60	14.94	13.09	6.47	6.41
10033.38	10048.16	272.22	58.94	15.06	5.82	3.99	4.62
10048.16	10062.94	49.79	20.74	14.14	1.06	1.50	2.40

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9971.80	9981.20	0.13	0.17	0.87	0.00	0.23	0.78
LB 9981.20	9988.68	122.74	22.30	9.02	2.62	2.98	5.50
9988.68	9996.16	695.22	67.94	10.83	14.86	9.08	10.23
9996.16	10003.64	1435.08	90.98	7.58	30.66	12.16	15.77
10003.64	10011.12	1039.55	76.35	7.93	22.21	10.21	13.62
10011.12	RB 10018.60	647.79	57.30	7.87	13.84	7.66	11.30
10018.60	10033.38	668.83	93.33	14.94	14.29	6.31	7.17
10033.38	10048.16	70.66	19.37	8.54	1.51	4.92	3.65

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.745

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9914.7	1414.1	9919.1	1412.5	9950.5	1399.2	9954.2	1397.6	9955.3	1397.4
9957.9	1397	9959.5	1396.3	9962.5	1395.4	9964.9	1394.7	9966.1	1394.5
9966.6	1394.4	9971.2	1392.7	9972.1	1392.4	9975.8	1390.6	9977.5	1389.8
9979.8	1389.2	9982.7	1388.3	9984.6	1388.4	9990.2	1388.7	9995	1388.7
10000.1	1388.7	10000.6	1388.7	10007.2	1388.3	10011.6	1388	10012.3	1388.1
10015.1	1388.5	10020.1	1389.4	10027.5	1391.7	10027.7	1391.7	10036.6	1392.8
10043.3	1393.4	10044.9	1393.9	10046.6	1394.5	10067.6	1403.8	10069.4	1404.5
10083.3	1410.7								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9914.7	.065	9966.1	.045	10027.5	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9966.1	10027.5	31.81	59.17	88.58	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10027.5	10083.3	1406.2

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9931.83	9948.97	0.90	1.64	3.02	0.02	0.59	0.55
9948.97	9966.10	144.83	70.45	18.04	3.09	4.11	2.06
LB 9966.10	9978.38	563.16	108.95	13.27	12.03	8.87	5.17
9978.38	9990.66	1019.36	151.77	12.47	21.78	12.36	6.72
9990.66	10002.94	1027.29	151.54	12.28	21.95	12.34	6.78
10002.94	10015.22	1081.53	156.55	12.34	23.11	12.75	6.91
10015.22	RB 10027.50	842.92	136.42	12.71	18.01	11.11	6.18
10027.50	10046.10	0.00	153.20	18.84	0.00	8.24	0.00
10046.10	10064.70	0.00	51.41	16.65	0.00	3.37	0.00

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT *Profile #Method 1*

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9931.83	9948.97	1.08	1.75	3.06	0.02	0.63	0.62
9948.97	9966.10	159.96	71.11	18.04	3.42	4.15	2.25
LB 9966.10	9978.38	596.37	109.43	13.27	12.74	8.91	5.45
9978.38	9990.66	1077.28	152.24	12.47	23.02	12.40	7.08
9990.66	10002.94	1085.66	152.01	12.28	23.20	12.38	7.14
10002.94	10015.22	1142.80	157.03	12.34	24.42	12.79	7.28
10015.22	RB 10027.50	616.84	136.89	22.07	13.18	11.15	4.51

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.734

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9955.3	1406.8	9961.2	1405.5	9965.5	1404.6	9969.7	1403.6	9972.2	1402.8
9975.3	1401.7	9979.3	1401.3	9980.2	1401.2	9981.2	1399.6	9983	1396.4
9988.2	1387	10001.5	1387.2	10010	1387.1	10014.4	1391.5	10018.1	1396.2
10020.8	1399.7	10022.6	1402.2	10031.6	1404.2	10039.4	1405.2	10045.9	1406.2
10053	1406.9	10054.1	1407.3						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9955.3	.065	9983	.045	10018.1	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983	10018.1	157.59	161.15	167.86	.6	.8

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9973.77	9983.00	0.09	0.10	0.67	0.00	0.29	0.89
LB 9983.00	9990.02	449.06	45.64	12.56	9.60	6.50	9.84
9990.02	9997.04	1335.71	69.55	7.02	28.54	9.91	19.21
9997.04	10004.06	1314.70	68.89	7.02	28.09	9.81	19.09
10004.06	10011.08	1253.43	68.62	7.47	26.78	9.77	18.27
10011.08	RB 10018.10	326.72	35.33	10.68	6.98	5.03	9.25
10018.10	10030.10	0.30	0.24	0.99	0.01	0.39	1.26

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9973.77	9983.00	0.09	0.10	0.69	0.00	0.31	0.91
LB 9983.00	9990.02	449.66	45.78	12.56	9.61	6.52	9.82
9990.02	9997.04	1335.14	69.69	7.02	28.53	9.93	19.16
9997.04	10004.06	1314.18	69.03	7.02	28.08	9.83	19.04
10004.06	10011.08	1252.96	68.76	7.47	26.77	9.79	18.22
10011.08	RB 10018.10	327.64	35.47	10.68	7.00	5.05	9.24
10018.10	10030.10	0.32	0.25	1.01	0.01	0.41	1.28

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.703

INPUT

Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9916.5	1433.1	9925	1430.9	9927.6	1430	9928.5	1423.5	9932.1	1398.7
9935.1	1396.3	9937	1396.1	9941.2	1394.6	9947	1392.8	9955	1389.8
9956.1	1389.3	9961.7	1388.2	9976.7	1386.4	9988	1384.2	9992.5	1383.4
9992.9	1383.3	9993.4	1383.3	10001.6	1382.9	10004.5	1383.7	10009.7	1384.9
10014	1385.2	10017.2	1385.5	10023	1385.1	10029	1384.5	10030.6	1386.2
10032.8	1391.7	10039.6	1408.8	10044.4	1422	10046.7	1423.3	10055.7	1426.2
10057.2	1426.6	10058.9	1427.2	10061.3	1427.7				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9916.5	.055	9976.7	.04	10032.8	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.7	10032.8	290.42	281.33	270.72	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9931.55	9946.60	1.31	1.70	3.47	0.03	0.51	0.77
9946.60	9961.65	157.77	55.34	15.83	3.37	3.68	2.85
9961.65	9976.70	435.82	100.06	15.16	9.31	6.65	4.36
LB 9976.70	9987.92	747.13	96.98	11.43	15.96	8.64	7.70
9987.92	9999.14	1042.88	117.97	11.31	22.28	10.51	8.84
9999.14	10010.36	977.11	114.09	11.47	20.88	10.17	8.56
10010.36	10021.58	761.97	97.52	11.25	16.28	8.69	7.81
10021.58	RB 10032.80	555.25	92.17	15.71	11.86	8.22	6.02
10032.80	10042.30	0.77	1.01	2.42	0.02	1.13	0.77

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9976.70	9987.92	645.28	95.68	18.87	13.79	8.53	6.74
9987.92	9999.14	1263.04	116.67	11.31	26.99	10.40	10.83
9999.14	10010.36	1182.64	112.78	11.47	25.27	10.05	10.49
10010.36	10021.58	919.23	96.22	11.25	19.64	8.58	9.55
10021.58	RB 10032.80	668.96	90.87	15.71	14.29	8.10	7.36
10032.80	10042.30	0.85	0.91	2.30	0.02	1.07	0.94

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.650

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9962.4	1400.3	9968.8	1397.2	9969.7	1396.8	9976.2	1392.3	9982.9	1389.3
9983.4	1388.9	9984.7	1387.9	9988.9	1383.7	9991.4	1381.2	9994.2	1376.9
9996.2	1375.5	10006.3	1375.2	10006.6	1375.2	10006.8	1375.2	10011.4	1380.9
10017.9	1388.9	10029.6	1403	10030.8	1403.5	10031.2	1403.4		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9962.4	.055	9983.4	.04	10017.9	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.4	10017.9	134.48	129.81	124.53	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9976.40	9983.40	1.18	0.82	2.14	0.03	0.44	1.43
LB 9983.40	9990.30	191.88	28.92	9.56	4.10	4.19	6.64
9990.30	9997.20	1032.86	81.24	10.13	22.07	11.77	12.71
9997.20	10004.10	1896.81	100.36	6.90	40.53	14.54	18.90
10004.10	10011.00	1300.76	90.50	9.39	27.79	13.12	14.37
10011.00	RB 10017.90	255.97	36.28	10.95	5.47	5.26	7.05
10017.90	10022.33	0.54	0.42	1.32	0.01	0.51	1.27

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9976.40	9983.40	1.16	0.81	2.12	0.02	0.44	1.43
LB 9983.40	9990.30	191.57	28.87	9.56	4.09	4.18	6.64
9990.30	9997.20	1032.90	81.19	10.13	22.07	11.77	12.72
9997.20	10004.10	1897.22	100.31	6.90	40.54	14.54	18.91
10004.10	10011.00	1300.94	90.46	9.39	27.80	13.11	14.38
10011.00	RB 10017.90	255.68	36.24	10.95	5.46	5.25	7.06
10017.90	10022.33	0.53	0.42	1.31	0.01	0.50	1.27

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.625

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9950	1409.9	9968.5	1398.8	9970.7	1397.6	9978	1393.9	9983	1391.6
9985.6	1388.4	9994.6	1377.4	9997.5	1373.6	9999	1373.7	10002.3	1373.8
10012.7	1377.4	10013.2	1377.7	10013.7	1378.3	10020.9	1384.8	10021.1	1385
10025.1	1388.4	10028.4	1391.3	10028.7	1391.6	10029	1391.8	10036.6	1398.4
10036.8	1398.6								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9950	.055	9985.6	.04	10025.1	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.6	10025.1	88.8	81.02	73.4	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9973.73	9985.60	0.53	0.49	1.42	0.01	0.55	1.06
LB 9985.60	9993.50	291.28	46.85	12.48	6.22	5.93	6.22
9993.50	10001.40	1462.34	114.79	10.42	31.25	14.53	12.74
10001.40	10009.30	1720.48	115.59	8.31	36.76	14.63	14.88
10009.30	10017.20	996.94	88.55	9.68	21.30	11.21	11.26
10017.20	RB 10025.10	207.61	35.71	10.52	4.44	4.52	5.81
10025.10	10029.00	0.83	0.69	1.67	0.02	0.55	1.20

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9973.73	9985.60	0.51	0.49	1.41	0.01	0.55	1.06
LB 9985.60	9993.50	290.90	46.78	12.48	6.22	5.92	6.22
9993.50	10001.40	1462.74	114.71	10.42	31.26	14.52	12.75
10001.40	10009.30	1720.97	115.51	8.31	36.77	14.62	14.90
10009.30	10017.20	996.89	88.48	9.68	21.30	11.20	11.27
10017.20	RB 10025.10	207.17	35.64	10.52	4.43	4.51	5.81
10025.10	10029.00	0.81	0.68	1.66	0.02	0.55	1.19

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.610

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9961.6	1398.5	9963.9	1397.4	9973.9	1394.7	9975.8	1393.9	9978.4	1392
9979	1391.6	9980.7	1390.7	9985.4	1385.5	9995	1375	9995.6	1374.4
9996.5	1373.2	9997.3	1373.3	9997.4	1373.3	10004.9	1373.4	10018.8	1385.5
10019.2	1386	10032.6	1394.1	10036.8	1394.8	10045.2	1398.3		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9961.6	.055	9985.4	.04	10018.8	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.4	10018.8	107	113.28	117.52	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9977.47	9985.40	0.54	0.35	1.19	0.01	0.44	1.53
LB 9985.40	9992.08	260.59	30.31	9.90	5.57	4.54	8.60
9992.08	9998.76	1305.24	76.51	8.94	27.89	11.45	17.06
9998.76	10005.44	1925.11	86.87	6.86	41.13	13.00	22.16
10005.44	10012.12	979.87	64.17	8.86	20.94	9.61	15.27
10012.12	RB 10018.80	208.10	25.33	8.86	4.45	3.79	8.22
10018.80	10027.60	0.54	0.38	1.38	0.01	0.36	1.44

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9977.47	9985.40	0.59	0.38	1.22	0.01	0.47	1.56
LB 9985.40	9992.08	262.06	30.50	9.90	5.60	4.57	8.59
9992.08	9998.76	1304.31	76.70	8.94	27.87	11.48	17.01
9998.76	10005.44	1922.79	87.06	6.86	41.09	13.03	22.09
10005.44	10012.12	979.95	64.36	8.86	20.94	9.64	15.23
10012.12	RB 10018.80	209.69	25.52	8.86	4.48	3.82	8.22
10018.80	10027.60	0.60	0.41	1.41	0.01	0.39	1.49

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.589

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9935.7	1400	9938.6	1396.3	9953.3	1377.7	9957.2	1377.3	9975.7	1375.2
9982.8	1374.6	9989.7	1373.9	9990.1	1373.7	9994.5	1371	9999.8	1371.1
10003.2	1371	10011.2	1373.2	10012.6	1373.7	10013.1	1373.8	10013.6	1374.1
10014.2	1374.4	10017.2	1375.8	10021.3	1379	10038.8	1392.8	10045.9	1398.5
10049	1399.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9935.7	.055	9953.3	.04	10021.3	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9953.3	10021.3	247.84	272.43	282.52	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9947.43	9953.30	3.90	1.64	2.60	0.08	1.02	2.37
LB 9953.30	9966.90	305.90	37.72	13.68	6.54	2.77	8.11
9966.90	9980.50	632.34	58.30	13.67	13.51	4.29	10.85
9980.50	9994.10	1055.39	80.90	14.38	22.55	5.95	13.05
9994.10	10007.70	1962.44	115.58	13.84	41.93	8.50	16.98
10007.70	RB 10021.30	719.55	66.05	15.39	15.37	4.86	10.89
10021.30	10030.53	0.49	0.35	1.19	0.01	0.37	1.41

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)

9947.43	9953.30	3.97	1.67	2.62	0.08	1.04	2.38
LB 9953.30	9966.90	307.70	37.98	13.68	6.57	2.79	8.10
9966.90	9980.50	633.51	58.56	13.67	13.54	4.31	10.82
9980.50	9994.10	1055.16	81.16	14.38	22.55	5.97	13.00
9994.10	10007.70	1958.89	115.84	13.84	41.86	8.52	16.91
10007.70	RB 10021.30	720.25	66.31	15.39	15.39	4.88	10.86
10021.30	10030.53	0.52	0.36	1.21	0.01	0.39	1.43

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.537

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9946.7	1398.1	9949.5	1397.3	9955.9	1396.1	9958.1	1395	9959.6	1393.9
9963.4	1384.2	9964.1	1382.4	9975.4	1376.7	9976.8	1376	9976.8	1375.9
9978	1375	9981.3	1370.1	9994.7	1368.8	9995.5	1368.7	9997.6	1368.7
10003.2	1369	10006.1	1369.1	10016.9	1370.9	10018.2	1371.1	10025.3	1371.8
10044.7	1373.8	10047.7	1374.5	10065.8	1389.2	10067.4	1390.4	10068	1390.6
10070.2	1390.8	10078.8	1390.1	10084.6	1390.1	10091.3	1392.4	10093.1	1392.8
10101.1	1395.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9946.7	.055	9976.8	.04	10047.7	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.8	10047.7	506.51	505.19	499.04	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9966.77	9976.80	2.51	1.57	2.80	0.05	0.63	1.60
LB 9976.80	9990.98	865.39	91.48	17.23	18.49	6.45	9.46
9990.98	10005.16	1519.36	118.72	14.21	32.46	8.37	12.80
10005.16	10019.34	1155.06	101.10	14.35	24.68	7.13	11.42
10019.34	10033.52	714.90	75.61	14.25	15.28	5.33	9.46
10033.52	RB 10047.70	411.33	54.37	14.32	8.79	3.83	7.57
10047.70	10065.50	11.45	4.67	4.37	0.24	1.38	2.45

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9966.77	9976.80	4.50	2.48	3.16	0.10	0.99	1.81
LB 9976.80	9990.98	864.80	96.66	17.23	18.48	6.82	8.95
9990.98	10005.16	1487.34	123.90	14.21	31.78	8.74	12.00
10005.16	10019.34	1144.48	106.28	14.35	24.45	7.50	10.77
10019.34	10033.52	727.86	80.79	14.25	15.55	5.70	9.01
10033.52	RB 10047.70	436.42	59.55	14.32	9.33	4.20	7.33
10047.70	10065.50	14.60	5.91	4.73	0.31	1.74	2.47

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.441

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9945.2	1400.1	9945.6	1399.9	9952.3	1397	9956.3	1395.2	9956.7	1395.1
9962.6	1392.2	9966.2	1376	9967	1370.3	9968.4	1370.1	9971.5	1369.6
9972.7	1369.4	9973.8	1369.2	9977.4	1368.8	9981.8	1368.2	9988.1	1367.3
9992.7	1365.4	9992.8	1365.4	9993.1	1365.4	10007.7	1365.8	10010.1	1365.9

10015.2	1366.6	10027.4	1368.4	10027.5	1368.4	10044.2	1368.4	10051.1	1368.4
10053.8	1368.3	10065.7	1367.8	10069.7	1368	10073.3	1368.3	10074.8	1369.4
10088.5	1379.1	10110.5	1391.9	10110.8	1392				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9945.2	.055	9968.4	.04	10027.5	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.4	10027.5	486.53	494.72	495.41	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9960.67	9968.40	6.85	2.38	2.92	0.15	1.48	2.87
LB 9968.40	9980.22	247.03	30.54	11.94	5.28	2.58	8.09
9980.22	9992.04	588.15	51.87	12.22	12.57	4.39	11.34
9992.04	10003.86	1080.69	73.87	11.88	23.09	6.25	14.63
10003.86	10015.68	946.12	68.20	11.88	20.22	5.77	13.87
10015.68	RB 10027.50	565.88	50.22	11.95	12.09	4.25	11.27
10027.50	10044.16	414.79	56.50	16.66	8.86	3.39	7.34
10044.16	10060.82	437.81	58.38	16.67	9.35	3.50	7.50
10060.82	10077.48	392.50	55.93	17.64	8.39	3.36	7.02
10077.48	10094.14	0.19	0.17	0.86	0.00	0.25	1.12

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9960.67	9968.40	10.78	3.64	3.70	0.23	2.26	2.96
LB 9968.40	9980.22	353.29	39.75	11.94	7.55	3.36	8.89
9980.22	9992.04	711.81	61.08	12.22	15.21	5.17	11.65
9992.04	10003.86	1211.46	83.09	11.88	25.89	7.03	14.58
10003.86	10015.68	1076.93	77.42	11.88	23.01	6.55	13.91
10015.68	RB 10027.50	690.52	59.44	11.95	14.75	5.03	11.62
10027.50	10044.16	519.54	69.49	16.66	11.10	4.17	7.48
10044.16	10060.82	105.68	21.10	9.23	2.26	4.17	5.01

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.348

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9856.9	1380.2	9857.5	1379.9	9874.2	1372.4	9886.9	1366.4	9909	1365.8
9923.1	1365.3	9927.3	1364.6	9933.2	1363.7	9943.4	1364	9952.3	1364.4
9964.5	1364.2	9967.7	1364.2	9967.8	1364.2	9971.7	1363.4	9975.5	1362.6
9987.1	1362.4	10000.4	1362.2	10014.1	1362	10020.1	1362.7	10021.3	1362.8
10031.8	1364.1	10042.3	1365.3	10043.6	1367	10044.3	1367.8	10076.8	1399

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9856.9	.055	9967.7	.04	10043.6	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967.7	10043.6	201.07	204.6	209.37	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9879.06	9901.22	111.49	39.26	19.46	2.38	2.07	2.84
9901.22	9923.38	235.05	64.72	22.17	5.02	2.92	3.63
9923.38	9945.54	473.06	98.68	22.29	10.11	4.45	4.79
9945.54	9967.70	451.85	95.79	22.17	9.65	4.32	4.72
LB 9967.70	9982.88	669.35	85.07	15.35	14.30	5.60	7.87
9982.88	9998.06	806.74	94.75	15.18	17.24	6.24	8.51
9998.06	10013.24	856.33	98.20	15.18	18.30	6.47	8.72
10013.24	10028.42	713.33	88.23	15.28	15.24	5.81	8.08
10028.42	RB 10043.60	361.40	59.93	16.11	7.72	3.95	6.03

10043.60	10054.67	1.41	1.16	2.21	0.03	0.76	1.21

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9945.54	9967.70	308.69	62.79	17.92	6.60	4.72	4.92
LB 9967.70	9982.88	860.09	91.01	15.35	18.38	6.00	9.45
9982.88	9998.06	1025.13	100.69	15.18	21.90	6.63	10.18
9998.06	10013.24	1084.40	104.14	15.18	23.17	6.86	10.41
10013.24	10028.42	913.03	94.17	15.28	19.51	6.20	9.70
10028.42	RB 10043.60	485.77	65.87	16.11	10.38	4.34	7.37
10043.60	10054.67	2.89	1.76	2.60	0.06	1.15	1.64

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.309

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9889.3	1380.3	9904.9	1377	9919.7	1370.3	9940.5	1362.9	9957.3	1362.7
9960.2	1362.7	9960.3	1362.7	9965.5	1361.4	9968.3	1360.7	9970.2	1360.8
9983.6	1361.1	9988.4	1361.3	10000.3	1361.7	10003	1361.5	10012.7	1361.4
10027.7	1361.4	10032.9	1362.2	10038.1	1363.2	10045.7	1365.5	10045.8	1365.6
10062.8	1377.2	10086	1392.1	10086.4	1392.2				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9889.3	.055	9960.3	.04	10045.8	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960.3	10045.8	330.28	300.2	270.2	.6	.8

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9912.97	9936.63	24.69	10.08	7.99	0.53	1.34	2.45
9936.63	9960.30	504.99	95.57	23.91	10.79	4.04	5.28
LB 9960.30	9977.40	943.75	97.55	17.35	20.17	5.70	9.67
9977.40	9994.50	963.45	98.21	17.11	20.59	5.74	9.81
9994.50	10011.60	876.22	92.78	17.11	18.72	5.43	9.44
10011.60	10028.70	909.70	94.89	17.11	19.44	5.55	9.59
10028.70	RB 10045.80	455.14	63.38	17.63	9.73	3.71	7.18
10045.80	10059.33	2.06	1.34	2.40	0.04	0.68	1.53

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9960.30	9977.40	910.96	113.10	22.51	19.46	6.61	8.05
9977.40	9994.50	1104.65	113.77	17.11	23.60	6.65	9.71
9994.50	10011.60	1018.07	108.33	17.11	21.75	6.34	9.40
10011.60	10028.70	1051.36	110.45	17.11	22.46	6.46	9.52
10028.70	RB 10045.80	588.81	78.93	17.63	12.58	4.62	7.46
10045.80	10059.33	6.15	3.14	3.31	0.13	1.59	1.95

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.252

INPUT
Description: 100-year, 24-hour Peak Discharge of 7300 cfs from HEC-1 model at station C105.
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9751	1378	9751.2	1377.8	9752	1376.9	9754.9	1376.6	9760.1	1376.1
9766.2	1375.5	9787.9	1369.9	9804.8	1365.6	9810.7	1363.9	9827.7	1362.4
9833.4	1362.2	9849.6	1361.9	9849.8	1361.9	9850.2	1361.9	9886.3	1361.8
9890.5	1361.8	9899.1	1361.5	9907.7	1361.4	9918.3	1361.4	9945.2	1360.6
9957.5	1360.3	9957.9	1360.3	9973.7	1358.6	9981.1	1357.8	9985	1357.9
10002.5	1358.4	10018.3	1358.7	10025.2	1358.8	10038.3	1360.7	10039.4	1361
10039.5	1361	10057.8	1361.2	10068	1361.2	10087.9	1361.2	10103.2	1361.3
10111.1	1363.2	10120.9	1365.1	10128	1368.2	10138.4	1373.2	10174.4	1389.2
10179.2	1391.2	10190.8	1395.9	10193	1396.8	10195.8	1397.6	10196.9	1397.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9751	.055	9957.9	.04	10039.5	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9957.9	10039.5	232.54	247.79	220.18	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9792.38	9813.07	0.25	0.36	2.54	0.00	0.14	0.71
9813.07	9833.76	65.40	23.15	20.75	0.90	1.12	2.83
9833.76	9854.45	163.02	40.00	20.69	2.23	1.93	4.08
9854.45	9875.14	184.87	43.13	20.69	2.53	2.08	4.29
9875.14	9895.83	196.08	44.68	20.69	2.69	2.16	4.39
9895.83	9916.52	250.00	51.70	20.69	3.42	2.50	4.84
9916.52	9937.21	302.41	57.96	20.70	4.14	2.80	5.22
9937.21	9957.90	416.32	70.21	20.70	5.70	3.39	5.93
LB 9957.90	9974.22	761.07	73.80	16.41	10.43	4.52	10.31
9974.22	9990.54	1192.86	96.52	16.36	16.34	5.91	12.36
9990.54	10006.86	1109.73	92.35	16.33	15.20	5.66	12.02
10006.86	10023.18	998.23	86.65	16.32	13.67	5.31	11.52
10023.18	RB 10039.50	679.08	69.06	16.50	9.30	4.23	9.83
10039.50	10070.98	474.34	88.22	31.48	6.50	2.80	5.38
10070.98	10102.46	451.95	85.69	31.48	6.19	2.72	5.27
10102.46	10133.94	54.39	16.77	12.78	0.75	1.34	3.24

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9875.14	9895.83	127.37	27.69	13.81	1.74	2.42	4.60
9895.83	9916.52	319.91	56.57	20.69	4.38	2.73	5.66
9916.52	9937.21	380.98	62.83	20.70	5.22	3.04	6.06
9937.21	9957.90	512.72	75.08	20.70	7.02	3.63	6.83
LB 9957.90	9974.22	879.85	77.65	16.41	12.05	4.76	11.33
9974.22	9990.54	1352.36	100.37	16.36	18.53	6.15	13.47
9990.54	10006.86	1261.75	96.19	16.33	17.28	5.89	13.12
10006.86	10023.18	1139.93	90.50	16.32	15.62	5.55	12.60
10023.18	RB 10039.50	789.51	72.91	16.50	10.82	4.47	10.83
10039.50	10070.98	535.62	92.11	33.28	7.34	3.04	5.81

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 0.205

INPUT
Description: Confluence with Agua Fria River and downstream study limits.
Starting water surface based on the normal depth option with a slope of 0.0105 ft/ft.
Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9707.5	1383.6	9713	1380.2	9728.7	1370.3	9735.5	1365.5	9742.1	1362.9
9747.5	1362.5	9758.3	1361.7	9818.7	1359.9	9822.6	1359.7	9823.3	1359.7
9835.2	1359.9	9858.7	1359	9859.7	1359	9864.1	1358.8	9874.6	1358.5
9887.8	1357.8	9899.7	1357.2	9902.4	1357.1	9903.9	1357	9919.1	1356.9
9927.5	1356.8	9928.2	1356.8	9931.2	1356.8	9946.1	1356.7	9957.8	1356.7
9962.9	1356.7	9969.7	1356.8	9981	1356.7	9991.2	1357.1	9992.3	1357.1
9993.3	1357.1	9995.3	1357	9997.3	1356.9	10002	1356.6	10002.2	1356.6
10023.9	1357	10031.8	1357.1	10034.6	1357	10051.1	1356.7	10052.9	1356.6
10053	1356.6	10053.2	1356.6	10054.2	1356.7	10068	1357.9	10075.7	1357.7
10082.9	1357.5	10097.4	1357.4	10098.5	1357.3	10099	1357.4	10099.2	1357.5
10106.7	1359.4	10108.8	1359.9	10117.3	1362	10117.8	1362.1	10125.3	1361
10128.7	1360.9	10129.8	1360.9	10136.6	1360.8	10137.2	1360.8	10139.3	1360.5
10144.3	1360.2	10158.7	1360.1	10177.2	1359.9	10183.1	1359.9	10190.1	1359.9
10191.7	1359.9	10192.9	1359.9	10193.8	1359.9	10207.1	1359.9	10218.2	1359.7
10232.7	1359.5	10234.9	1359.4	10242.6	1359.4	10251.4	1359	10259.8	1358.7
10262.4	1358.8	10263.8	1358.8	10271.4	1358.9	10279.1	1359.1	10286.4	1359.1
10301.3	1359.1	10301.4	1359.1	10321.8	1358.7	10327.4	1358.4	10331.7	1358.1
10338.6	1357.7	10346.3	1357.9	10350.3	1358.5	10363.8	1358.1	10367.8	1358.1

10368	1358.1	10369.3	1358.3	10370	1358.7	10381.3	1361.6	10383.5	1362.7
10400.8	1372.4	10412.2	1377	10418.7	1380.3	10428.6	1384.6	10432.6	1385.2
10434.5	1385.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9707.5	.055	9835.2	.04	10117.8	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9835.2	10117.8	0	0	0	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9792.63	9835.20	23.02	14.51	33.64	0.32	0.43	1.59
LB 9835.20	9891.72	446.17	89.57	56.57	6.11	1.58	4.98
9891.72	9948.24	1649.19	196.20	56.54	22.59	3.47	8.41
9948.24	10004.76	1769.91	204.71	56.54	24.25	3.62	8.65
10004.76	10061.28	1689.73	199.12	56.56	23.15	3.52	8.49
10061.28	RB 10117.80	837.57	124.41	50.01	11.47	2.51	6.73
10117.80	10149.47	1.16	1.55	8.68	0.02	0.18	0.75
10149.47	10181.14	15.25	12.17	31.67	0.21	0.38	1.25
10181.14	10212.81	25.22	16.46	31.67	0.35	0.52	1.53
10212.81	10244.48	58.22	27.19	31.68	0.80	0.86	2.14
10244.48	10276.15	145.39	47.09	31.69	1.99	1.49	3.09
10276.15	10307.82	120.27	42.02	31.67	1.65	1.33	2.86
10307.82	10339.49	226.34	61.43	31.70	3.10	1.94	3.68
10339.49	10371.16	285.40	70.76	31.88	3.91	2.23	4.03
10371.16	10402.83	7.16	3.89	5.68	0.10	0.71	1.84

Warning: Divided flow computed for this cross-section.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9835.20	9891.72	568.52	103.88	57.33	7.79	1.84	5.47
9891.72	9948.24	1862.27	210.52	56.54	25.51	3.72	8.85
9948.24	10004.76	1989.18	219.02	56.54	27.25	3.88	9.08
10004.76	10061.28	1904.88	213.44	56.56	26.09	3.78	8.92
10061.28	RB 10117.80	975.15	137.10	51.07	13.36	2.71	7.11

SUMMARY OF MANNING'S N VALUES

River:Unnamed Wash 2

Reach	River Sta.	n1	n2	n3
Reach 1	6.789	.055	.04	.055
Reach 1	6.765	.055	.04	.055
Reach 1	6.714	.055	.04	.055
Reach 1	6.669	.055	.04	.055
Reach 1	6.643	.055	.04	.055
Reach 1	6.595	.055	.04	.055
Reach 1	6.570	.055	.04	.055
Reach 1	6.501	.055	.04	.055
Reach 1	6.451	.055	.04	.055
Reach 1	6.418	.055	.04	.055
Reach 1	6.392	.055	.04	.055
Reach 1	6.318	.055	.04	.055
Reach 1	6.271	.055	.04	.055
Reach 1	6.218	.055	.04	.055
Reach 1	6.161	.055	.04	.055
Reach 1	6.058	.055	.04	.055
Reach 1	5.974	.055	.04	.055
Reach 1	5.927	.055	.04	.055
Reach 1	5.865	.055	.04	.055
Reach 1	5.845	.07	.05	.07
Reach 1	5.759	.055	.04	.055
Reach 1	5.702	.055	.04	.055
Reach 1	5.624	.055	.04	.055
Reach 1	5.551	.05	.04	.05
Reach 1	5.508	.05	.04	.05
Reach 1	5.460	.05	.04	.05
Reach 1	5.364	.05	.04	.05
Reach 1	5.304	.05	.04	.05
Reach 1	5.266	.05	.04	.05
Reach 1	5.172	.05	.04	.05
Reach 1	5.114	.05	.04	.05
Reach 1	5.079	.05	.04	.05
Reach 1	4.974	.06	.045	.06
Reach 1	4.939	.05	.04	.05
Reach 1	4.884	.05	.04	.05
Reach 1	4.784	.05	.04	.05
Reach 1	4.692	.05	.04	.05
Reach 1	4.640	.05	.04	.05
Reach 1	4.600	.05	.04	.05
Reach 1	4.502	.065	.05	.065
Reach 1	4.430	.065	.05	.065
Reach 1	4.391	.065	.05	.065

Reach 1	4.365	.065	.05	.065
Reach 1	4.332	.05	.04	.05
Reach 1	4.286	.05	.04	.05
Reach 1	4.199	.05	.04	.05
Reach 1	4.102	.05	.04	.05
Reach 1	4.072	.05	.04	.05
Reach 1	4.013	.05	.04	.05
Reach 1	3.961	.05	.04	.05
Reach 1	3.923	.05	.04	.05
Reach 1	3.874	.05	.04	.05
Reach 1	3.825	.05	.04	.05
Reach 1	3.770	.05	.04	.05
Reach 1	3.725	.065	.05	.065
Reach 1	3.698	.065	.05	.065
Reach 1	3.660	.065	.05	.065
Reach 1	3.643	.065	.05	.065
Reach 1	3.618	.05	.04	.05
Reach 1	3.590	.05	.04	.05
Reach 1	3.523	.05	.04	.05
Reach 1	3.426	.05	.04	.05
Reach 1	3.311	.05	.04	.05
Reach 1	3.211	.05	.04	.05
Reach 1	3.122	.05	.04	.05
Reach 1	3.053	.05	.04	.05
Reach 1	3.033	.05	.04	.05
Reach 1	3.007	.05	.04	.05
Reach 1	2.976	.05	.04	.05
Reach 1	2.934	.05	.04	.05
Reach 1	2.903	.05	.04	.05
Reach 1	2.892	.055	.04	.055
Reach 1	2.856	.055	.04	.055
Reach 1	2.813	.055	.04	.055
Reach 1	2.718	.055	.04	.055
Reach 1	2.683	.06	.045	.06
Reach 1	2.656	.055	.04	.055
Reach 1	2.625	.055	.04	.055
Reach 1	2.603	.055	.04	.055
Reach 1	2.521	.055	.04	.055
Reach 1	2.424	.055	.04	.055
Reach 1	2.401	.055	.04	.055
Reach 1	2.319	.055	.04	.055
Reach 1	2.225	.055	.04	.055
Reach 1	2.131	.055	.04	.055
Reach 1	2.034	.055	.04	.055
Reach 1	1.940	.055	.04	.055
Reach 1	1.846	.055	.04	.055
Reach 1	1.818	.055	.04	.055
Reach 1	1.781	.055	.04	.055
Reach 1	1.742	.065	.045	.065
Reach 1	1.677	.055	.04	.055
Reach 1	1.629	.055	.04	.055
Reach 1	1.535	.055	.04	.055
Reach 1	1.481	.055	.04	.055
Reach 1	1.438	.055	.04	.055
Reach 1	1.419	.055	.04	.055
Reach 1	1.363	.055	.04	.055
Reach 1	1.261	.055	.04	.055
Reach 1	1.168	.055	.04	.055
Reach 1	1.092	.055	.04	.055
Reach 1	1.052	.055	.04	.055
Reach 1	0.995	.055	.04	.055
Reach 1	0.957	.055	.04	.055
Reach 1	0.916	.055	.04	.055
Reach 1	0.864	.055	.04	.055
Reach 1	0.769	.065	.045	.065
Reach 1	0.745	.065	.045	.065
Reach 1	0.734	.065	.045	.065
Reach 1	0.703	.055	.04	.055
Reach 1	0.650	.055	.04	.055
Reach 1	0.625	.055	.04	.055
Reach 1	0.610	.055	.04	.055
Reach 1	0.589	.055	.04	.055
Reach 1	0.537	.055	.04	.055
Reach 1	0.441	.055	.04	.055
Reach 1	0.348	.055	.04	.055
Reach 1	0.309	.055	.04	.055
Reach 1	0.252	.055	.04	.055
Reach 1	0.205	.055	.04	.055

SUMMARY OF REACH LENGTHS

River: Unnamed Wash 2

Reach	River Sta.	Left	Channel	Right
Reach 1	6.789	107.48	131.27	142.7
Reach 1	6.765	261.34	266.27	266.46
Reach 1	6.714	246.02	238.27	228.03
Reach 1	6.669	121.77	134.95	132.41
Reach 1	6.643	272.7	254.84	247.34
Reach 1	6.595	130.35	133.67	127.33
Reach 1	6.570	347.97	365.33	347.22

Reach 1	6.501	278.64	261.99	244.41
Reach 1	6.451	205.76	178.32	167.91
Reach 1	6.418	102.7	137.59	147.11
Reach 1	6.392	371.19	386.27	389.38
Reach 1	6.318	248.69	252.16	252.02
Reach 1	6.271	270.27	277.64	278.99
Reach 1	6.218	329.03	304.05	296.71
Reach 1	6.161	466.05	543.86	551.8
Reach 1	6.058	442.27	441.89	421.2
Reach 1	5.974	257.05	247.47	187.18
Reach 1	5.927	328.04	325.84	311.12
Reach 1	5.865	100.12	104.62	110.39
Reach 1	5.845	396.36	498.8	281.48
Reach 1	5.759	281.9	300.61	308.52
Reach 1	5.702	387.7	409.45	412.67
Reach 1	5.624	358.06	389.01	390.73
Reach 1	5.551	255.68	229.78	183.88
Reach 1	5.508	259.09	253.93	227.65
Reach 1	5.460	512.09	506.76	474.66
Reach 1	5.364	287.57	314.37	324.32
Reach 1	5.304	189.88	199.29	201.39
Reach 1	5.266	497.34	496.37	477.49
Reach 1	5.172	325.3	308.86	286.18
Reach 1	5.114	185.55	182.66	169.32
Reach 1	5.079	552.82	556.08	568.26
Reach 1	4.974	146.38	182.15	213.63
Reach 1	4.939	231.58	293.38	306.05
Reach 1	4.884	510.44	528.3	538.68
Reach 1	4.784	476.4	484.84	494.36
Reach 1	4.692	277.86	276.69	275.16
Reach 1	4.640	238	210.63	162.54
Reach 1	4.600	496.61	514.86	537.67
Reach 1	4.502	316	378.26	399.37
Reach 1	4.430	231.7	210.62	188.99
Reach 1	4.391	150.26	132.55	92.06
Reach 1	4.365	193.53	177.76	145.31
Reach 1	4.332	244.69	243.38	239.08
Reach 1	4.286	457.57	468.3	443.95
Reach 1	4.199	516.32	511.36	470.46
Reach 1	4.102	149.41	160.74	169.93
Reach 1	4.072	198.08	311.7	344.2
Reach 1	4.013	240.45	270.83	270.31
Reach 1	3.961	211.31	203.9	177.64
Reach 1	3.923	252.21	254.81	248.59
Reach 1	3.874	238.62	262.62	242.22
Reach 1	3.825	304.35	286.56	267.43
Reach 1	3.770	222.13	242.29	234.28
Reach 1	3.725	96.81	141.11	161.48
Reach 1	3.698	66.46	199.98	211.64
Reach 1	3.660	80.74	88.02	87.39
Reach 1	3.643	168.31	131.19	100.41
Reach 1	3.618	152.72	148.63	121.12
Reach 1	3.590	358.04	352.63	336.26
Reach 1	3.523	527.2	513.31	482.71
Reach 1	3.426	569.9	607.44	596.34
Reach 1	3.311	507.25	528.62	503.17
Reach 1	3.211	469.7	470.77	468.4
Reach 1	3.122	373.92	363.26	323.58
Reach 1	3.053	117.15	108.69	69.01
Reach 1	3.033	116.79	133.89	144.85
Reach 1	3.007	164.91	166.91	167.88
Reach 1	2.976	204.42	221.33	236.13
Reach 1	2.934	156.51	162.94	164.58
Reach 1	2.903	57.44	58.26	57.77
Reach 1	2.892	181.39	191.34	194.08
Reach 1	2.856	212.97	226.57	231.95
Reach 1	2.813	515.82	501.76	467.93
Reach 1	2.718	184.79	180.44	186.47
Reach 1	2.683	83.42	144.8	200.68
Reach 1	2.656	178.7	163.1	125.84
Reach 1	2.625	120.5	119.08	114.06
Reach 1	2.603	435.67	428.3	416.85
Reach 1	2.521	509.45	512.29	508.89
Reach 1	2.424	119.28	123.29	130.97
Reach 1	2.401	425.78	431.97	432.64
Reach 1	2.319	489.37	498.37	503.44
Reach 1	2.225	478.71	494.15	476.32
Reach 1	2.131	497.8	513.49	519.41
Reach 1	2.034	501.4	498.54	496.04
Reach 1	1.940	496.97	493.82	489.63
Reach 1	1.846	157.05	147.91	138.83
Reach 1	1.818	218.93	194.96	145.84
Reach 1	1.781	175.8	204.14	249.95
Reach 1	1.742	216.2	344.47	284.25
Reach 1	1.677	262.96	255.06	211.86
Reach 1	1.629	473.14	493.83	488.71
Reach 1	1.535	255.19	287.48	245.01
Reach 1	1.481	230.21	224.54	206.35
Reach 1	1.438	105.06	102.65	98.84
Reach 1	1.419	294.48	297.55	301.27
Reach 1	1.363	517.44	534.12	545.05
Reach 1	1.261	487.72	495.87	493.03
Reach 1	1.168	404.5	397.21	387.72
Reach 1	1.092	199.37	212.66	221.85
Reach 1	1.052	303.98	298.99	280.72

Reach 1	0.995	210.04	204.67	204.72
Reach 1	0.957	221.34	213.57	202.55
Reach 1	0.916	280.25	277.42	271.8
Reach 1	0.864	477.04	497.77	504.59
Reach 1	0.769	114.28	129.28	157.26
Reach 1	0.745	31.81	59.17	88.58
Reach 1	0.734	157.59	161.15	167.86
Reach 1	0.703	290.42	281.33	270.72
Reach 1	0.650	134.48	129.81	124.53
Reach 1	0.625	88.8	81.02	73.4
Reach 1	0.610	107	113.28	117.52
Reach 1	0.589	247.84	272.43	282.52
Reach 1	0.537	506.51	505.19	499.04
Reach 1	0.441	486.53	494.72	495.41
Reach 1	0.348	201.07	204.6	209.37
Reach 1	0.309	330.28	300.2	270.2
Reach 1	0.252	232.54	247.79	220.18
Reach 1	0.205	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Unnamed Wash 2

Reach	River Sta.	Contr.	Expan.
Reach 1	6.789	.1	.3
Reach 1	6.765	.1	.3
Reach 1	6.714	.1	.3
Reach 1	6.669	.3	.5
Reach 1	6.643	.6	.8
Reach 1	6.595	.6	.8
Reach 1	6.570	.3	.5
Reach 1	6.501	.1	.3
Reach 1	6.451	.3	.5
Reach 1	6.418	.1	.3
Reach 1	6.392	.3	.5
Reach 1	6.318	.1	.3
Reach 1	6.271	.3	.5
Reach 1	6.218	.6	.8
Reach 1	6.161	.3	.5
Reach 1	6.058	.1	.3
Reach 1	5.974	.1	.3
Reach 1	5.927	.1	.3
Reach 1	5.865	.1	.3
Reach 1	5.845	.3	.5
Reach 1	5.759	.3	.5
Reach 1	5.702	.1	.3
Reach 1	5.624	.1	.3
Reach 1	5.551	.1	.3
Reach 1	5.508	.1	.3
Reach 1	5.460	.1	.3
Reach 1	5.364	.1	.3
Reach 1	5.304	.1	.3
Reach 1	5.266	.1	.3
Reach 1	5.172	.1	.3
Reach 1	5.114	.1	.3
Reach 1	5.079	.1	.3
Reach 1	4.974	.1	.3
Reach 1	4.939	.1	.3
Reach 1	4.884	.1	.3
Reach 1	4.784	.1	.3
Reach 1	4.692	.1	.3
Reach 1	4.640	.1	.3
Reach 1	4.600	.1	.3
Reach 1	4.502	.1	.3
Reach 1	4.430	.1	.3
Reach 1	4.391	.1	.3
Reach 1	4.365	.1	.3
Reach 1	4.332	.1	.3
Reach 1	4.286	.1	.3
Reach 1	4.199	.1	.3
Reach 1	4.102	.1	.3
Reach 1	4.072	.3	.5
Reach 1	4.013	.1	.3
Reach 1	3.961	.1	.3
Reach 1	3.923	.3	.5
Reach 1	3.874	.6	.8
Reach 1	3.825	.1	.3
Reach 1	3.770	.3	.5
Reach 1	3.725	.1	.3
Reach 1	3.698	.6	.8
Reach 1	3.660	.1	.3
Reach 1	3.643	.1	.3
Reach 1	3.618	.1	.3
Reach 1	3.590	.1	.3
Reach 1	3.523	.1	.3
Reach 1	3.426	.1	.3
Reach 1	3.311	.3	.5
Reach 1	3.211	.1	.3
Reach 1	3.122	.1	.3
Reach 1	3.053	.6	.8
Reach 1	3.033	.1	.3

Reach 1	3.007	.1	.3
Reach 1	2.976	.1	.3
Reach 1	2.934	.1	.3
Reach 1	2.903	.1	.3
Reach 1	2.892	.1	.3
Reach 1	2.856	.6	.8
Reach 1	2.813	.1	.3
Reach 1	2.718	.3	.5
Reach 1	2.683	.3	.5
Reach 1	2.656	.3	.5
Reach 1	2.625	.1	.3
Reach 1	2.603	.1	.3
Reach 1	2.521	.1	.3
Reach 1	2.424	.1	.3
Reach 1	2.401	.1	.3
Reach 1	2.319	.1	.3
Reach 1	2.225	.1	.3
Reach 1	2.131	.1	.3
Reach 1	2.034	.1	.3
Reach 1	1.940	.1	.3
Reach 1	1.846	.1	.3
Reach 1	1.818	.1	.3
Reach 1	1.781	.6	.8
Reach 1	1.742	.6	.8
Reach 1	1.677	.1	.3
Reach 1	1.629	.1	.3
Reach 1	1.535	.1	.3
Reach 1	1.481	.1	.3
Reach 1	1.438	.1	.3
Reach 1	1.419	.3	.5
Reach 1	1.363	.1	.3
Reach 1	1.261	.1	.3
Reach 1	1.168	.1	.3
Reach 1	1.092	.3	.5
Reach 1	1.052	.1	.3
Reach 1	0.995	.1	.3
Reach 1	0.957	.1	.3
Reach 1	0.916	.1	.3
Reach 1	0.864	.1	.3
Reach 1	0.769	.1	.3
Reach 1	0.745	.1	.3
Reach 1	0.734	.6	.8
Reach 1	0.703	.3	.5
Reach 1	0.650	.1	.3
Reach 1	0.625	.1	.3
Reach 1	0.610	.3	.5
Reach 1	0.589	.1	.3
Reach 1	0.537	.1	.3
Reach 1	0.441	.1	.3
Reach 1	0.348	.1	.3
Reach 1	0.309	.6	.8
Reach 1	0.252	.3	.5
Reach 1	0.205	.3	.5

9988.72	10001.76	1156.21	83.55	13.19	26.16	6.41	13.84
10001.76	RB 10014.80	567.20	56.62	14.52	12.83	4.34	10.02
10014.80	10025.37	0.87	0.53	1.49	0.02	0.42	1.65

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9949.60	9962.64	548.56	55.53	16.43	12.41	4.26	9.88
9962.64	9975.68	1171.71	80.32	13.24	26.51	6.16	14.59
9975.68	9988.72	749.73	62.39	13.76	16.96	4.78	12.02
9988.72	10001.76	1300.03	85.36	13.19	29.41	6.55	15.23
10001.76	RB 10014.80	648.52	58.43	14.52	14.67	4.48	11.10
10014.80	10025.37	1.44	0.70	1.63	0.03	0.56	2.07

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.784

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9905.3	1704.1	9931.5	1700.8	9963.5	1693.8	9971.6	1691.9	9976.6	1691.7
9987.8	1691.1	9998.4	1689.6	9998.7	1689.5	9999.2	1689.5	10007.8	1688.6
10009.7	1688.8	10017.3	1689.6	10018.5	1689.6	10029.1	1690	10042.7	1695
10049.1	1697.3	10057.6	1700.4	10059.6	1702	10069.7	1710.8		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9905.3	.05	9987.8	.04	10042.7	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.8	10042.7	476.4	484.84	494.36	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9954.80	9971.30	133.93	29.36	16.66	3.03	1.81	4.56
9971.30	9987.80	545.05	67.94	16.53	12.33	4.12	8.02
LB 9987.80	9998.78	720.71	58.49	11.10	16.31	5.33	12.32
9998.78	10009.76	1045.41	72.94	11.04	23.65	6.64	14.33
10009.76	10020.74	961.02	69.31	11.02	21.74	6.31	13.87
10020.74	10031.72	793.26	62.07	11.16	17.95	5.65	12.78
10031.72	RB 10042.70	219.71	29.28	11.70	4.97	2.67	7.50
10042.70	10051.70	0.90	0.58	1.92	0.02	0.32	1.54

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9971.30	9987.80	88.36	16.23	8.13	2.00	4.92	5.45
LB 9987.80	9998.78	839.26	63.51	11.10	18.99	5.78	13.21
9998.78	10009.76	1185.74	77.96	11.04	26.83	7.10	15.21
10009.76	10020.74	1096.16	74.33	11.02	24.80	6.77	14.75
10020.74	10031.72	916.71	67.09	11.16	20.74	6.11	13.66
10031.72	RB 10042.70	290.35	34.30	11.70	6.57	3.12	8.46
10042.70	10051.70	3.42	1.41	2.37	0.08	0.78	2.43

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross

section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.692

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9841.3	1693.9	9852.4	1693.5	9856.8	1693.2	9864.1	1692.8	9870.9	1692.4
9880.7	1691.7	9891.8	1690.8	9896.5	1690.6	9906.5	1689.9	9940	1688.9
9970.3	1687.5	9970.4	1687.5	9989.5	1682.7	9991.4	1682.2	9993.4	1682.2
10010.2	1681.9	10022.7	1683	10024.9	1683.2	10028.3	1684.1	10039.7	1686.5
10042.6	1688	10058.3	1696.3	10063.4	1698.8	10069.4	1702.2	10069.9	1702.5
10082.1	1710								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9841.3	.05	9970.4	.04	10042.6	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970.4	10042.6	277.86	276.69	275.16	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9918.76	9944.58	0.03	0.07	1.71	0.00	0.04	0.38
9944.58	9970.40	43.49	17.44	25.85	0.98	0.68	2.49
LB 9970.40	9984.84	365.59	44.50	14.89	8.27	3.08	8.22
9984.84	9999.28	1186.71	89.61	14.65	26.85	6.21	13.24
9999.28	10013.72	1379.44	97.55	14.45	31.21	6.76	14.14
10013.72	10028.16	1079.87	84.55	14.60	24.43	5.86	12.77
10028.16	RB 10042.60	363.96	44.58	15.06	8.23	3.09	8.16
10042.60	10055.77	0.91	0.56	1.64	0.02	0.38	1.64

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9970.40	9984.84	346.12	43.43	16.08	7.83	3.01	7.97
9984.84	9999.28	1207.34	88.54	14.65	27.32	6.13	13.64
9999.28	10013.72	1405.72	96.48	14.45	31.80	6.68	14.57
10013.72	10028.16	1097.32	83.48	14.60	24.83	5.78	13.14
10028.16	RB 10042.60	362.77	43.51	15.06	8.21	3.01	8.34
10042.60	10055.77	0.73	0.45	1.48	0.02	0.35	1.60

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.640

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9799.6	1690.2	9800.2	1690.1	9806.5	1689.8	9811.3	1689.4	9821.8	1689
9832.4	1688.4	9836.5	1688.3	9852.8	1687.8	9857	1687.7	9862.1	1687.3
9863.5	1687.2	9876.9	1686.4	9882.7	1686	9889.6	1685.7	9891.5	1685.5
9895	1685.3	9901.8	1685.4	9908	1684.9	9914.7	1684.5	9920.4	1684.4
9925.1	1684.3	9928.1	1684.2	9939.9	1684.1	9947.1	1684	9961	1683.2
9974.1	1682.4	9974.2	1682.4	9975.2	1682.4	9982.6	1681	9989.5	1679.6
9993.6	1679.3	10004.3	1678.9	10014.3	1679.5	10021.2	1680	10029.3	1684.4
10029.4	1684.5	10042	1692.4	10044.8	1692.1				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9799.6	.05	9974.2	.04	10029.4	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.2	10029.4	238	210.63	162.54	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9869.44	9904.36	22.62	13.22	23.68	0.51	0.56	1.71
9904.36	9939.28	213.90	59.46	34.95	4.84	1.70	3.60
9939.28	9974.20	472.19	95.64	34.97	10.68	2.74	4.94
LB 9974.20	9985.24	482.79	50.84	11.23	10.92	4.61	9.50
9985.24	9996.28	864.27	71.88	11.14	19.55	6.51	12.02
9996.28	10007.32	1004.58	78.42	11.05	22.73	7.10	12.81
10007.32	10018.36	914.12	74.14	11.06	20.68	6.72	12.33
10018.36	RB 10029.40	440.76	49.78	12.21	9.97	4.53	8.85
10029.40	10034.53	4.77	2.14	3.08	0.11	0.82	2.23

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9869.44	9904.36	27.97	15.24	23.76	0.63	0.64	1.84
9904.36	9939.28	226.87	62.45	34.95	5.13	1.79	3.63
9939.28	9974.20	485.78	98.63	34.97	10.99	2.82	4.93
LB 9974.20	9985.24	482.05	51.79	11.23	10.91	4.69	9.31
9985.24	9996.28	855.27	72.83	11.14	19.35	6.60	11.74
9996.28	10007.32	992.33	79.37	11.05	22.45	7.19	12.50
10007.32	10018.36	904.01	75.08	11.06	20.45	6.80	12.04
10018.36	RB 10029.40	440.37	50.72	12.21	9.96	4.59	8.68
10029.40	10034.53	5.35	2.36	3.17	0.12	0.90	2.27

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.600

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9891	1708.9	9917.4	1705.3	9919.5	1704.9	9922.1	1704.5	9932.9	1702.5
9938.3	1701.7	9939.1	1701.6	9941.1	1701.3	9947.5	1700	9948.1	1699.9
9957.5	1695.7	9959.4	1695.1	9969.4	1693.5	9975.4	1690.3	9977.3	1688.4
9981.2	1685.7	9983	1684.7	9984.3	1681.3	9985.2	1678.8	9987.4	1678.4
9991.5	1677.1	9999.5	1673.5	10007.9	1674.5	10016.3	1675.6	10017.2	1675.6
10019.4	1675.9	10021.1	1676.4	10027.9	1678	10028.7	1678.1	10045.2	1679.9
10064.4	1681.9	10076.3	1682.1	10084.1	1682.2	10094.3	1682.8	10110.4	1683.1
10111.3	1683.2	10111.5	1683.2	10113.3	1683.1	10129.7	1683.9	10137.1	1684.2
10169.2	1686.3	10172.9	1686.5	10201.1	1695.6				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9891	.05	9984.3	.04	10028.7	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.3	10028.7	496.61	514.86	537.67	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.20	9984.30	0.47	0.39	1.53	0.01	0.72	1.21
LB 9984.30	9993.18	370.84	42.01	11.04	8.39	4.73	8.83
9993.18	10002.06	1019.00	72.59	9.51	23.05	8.17	14.04
10002.06	10010.94	1108.59	74.52	8.95	25.08	8.39	14.88
10010.94	10019.82	875.33	64.71	8.96	19.80	7.29	13.53
10019.82	RB 10028.70	556.91	49.69	9.13	12.60	5.60	11.21
10028.70	10063.18	461.11	95.60	34.67	10.43	2.77	4.82
10063.18	10097.66	27.74	16.70	29.96	0.63	0.56	1.66

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates

that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.20	9984.30	0.68	0.55	1.81	0.02	0.99	1.24
LB 9984.30	9993.18	374.51	44.52	11.04	8.47	5.01	8.41
9993.18	10002.06	988.71	75.09	9.51	22.37	8.46	13.17
10002.06	10010.94	1074.09	77.02	8.95	24.30	8.67	13.94
10010.94	10019.82	855.07	67.22	8.96	19.35	7.57	12.72
10019.82	RB 10028.70	554.28	52.20	9.13	12.54	5.88	10.62
10028.70	10063.18	520.28	105.33	34.67	11.77	3.05	4.94
10063.18	10097.66	52.37	25.15	30.24	1.18	0.84	2.08

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.502

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9918.4	1678.1	9927.4	1677.4	9941	1676.3	9945.2	1674.9	9959.1	1671.2
9965.9	1669.2	9966.1	1669.2	9973.4	1669.2	9979	1669.5	9979.1	1669.5
9989.3	1668.2	9996.8	1667.1	10013.4	1667.2	10022.8	1667.3	10029	1668.3
10034	1668.8	10036.2	1669.3	10038	1669.8	10039	1670	10043.2	1670.8
10045.7	1671.1	10049.4	1671.9	10053	1672.3	10056.6	1672.7	10063.4	1677.2
10067.2	1678.9	10086.8	1688.7	10087.9	1689.2	10088.1	1689.3	10089.9	1690
10090.9	1690.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9918.4	.065	9979.1	.05	10039	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.1	10039	316	378.26	399.37	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9948.75	9963.92	102.01	29.48	15.35	2.31	1.99	3.46
9963.92	9979.10	424.54	69.20	15.27	9.60	4.56	6.14
LB 9979.10	9991.08	571.10	61.35	12.08	12.92	5.12	9.31
9991.08	10003.06	861.42	78.41	12.04	19.49	6.55	10.99
10003.06	10015.04	894.51	80.04	11.98	20.24	6.68	11.18
10015.04	10027.02	843.57	77.41	12.03	19.09	6.46	10.90
10027.02	RB 10039.00	549.25	60.12	12.18	12.43	5.02	9.14
10039.00	10051.97	155.00	35.16	13.17	3.51	2.71	4.41
10051.97	10064.95	18.60	7.54	6.75	0.42	1.18	2.47

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9979.10	9991.08	583.53	61.14	16.42	13.20	5.10	9.54
9991.08	10003.06	1081.25	78.19	12.04	24.46	6.53	13.83
10003.06	10015.04	1122.90	79.83	11.98	25.40	6.66	14.07
10015.04	10027.02	1058.79	77.20	12.03	23.95	6.44	13.72
10027.02	RB 10039.00	573.53	59.91	16.01	12.98	5.00	9.57

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 2
REACH: Reach 1 RS: 4.430

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

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: Unnamed Wash 3
Project File : Un3_FpFw.prj
Run Date and Time: 5/23/01 12:20:44 PM

Project in English units

Project Description:
North Peoria Area Drainage Master Plan, FCD 99-45
Unnamed Wash 3 Floodplain
Delineation Study
Study Contractors: Stantec Consulting, Inc.
P82000146

Geometry Based on Aerial photography, Flight Date 2-18-00
Flow by
Cooper Aerial

Peak discharges are from 100-year, 6-hour HEC-1 model
dated
???, *prepared by Stantec*

PLAN DATA

Plan Title: 100-yr Existing Conditions Fp/Fw
Plan File : p:\82000146\Calcs\HEC-RAS\FEMA\Unnamed_Wash3\Un3_FpFw.p01

Geometry Title: Existing Conditions
Geometry File : p:\82000146\Calcs\HEC-RAS\FEMA\Unnamed_Wash3\Un3_FpFw.g01

Flow Title : 100-yr Existing Conditions
Flow File : p:\82000146\Calcs\HEC-RAS\FEMA\Unnamed_Wash3\Un3_FpFw.f01

Plan Summary Information:
Number of: Cross Sections = 94 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 0

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

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

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

River = Unnamed Wash 3 Reach = 1

RS	Profile	Method	Value1	Value2
4.540	Method 1	1	9976.76	10025.52
4.464	Method 1	1	9979.44	10019.7
4.428	Method 1	1	9960	10024.21
4.417	Method 1	1	9945	10014.49
4.399	Method 1	1	9940	10014.87
4.379	Method 1	1	9976.07	10022.86
4.338	Method 1	1	9978.61	10031.46
4.289	Method 1	1	9980.08	10023.62
4.229	Method 1	1	9984.4	10025.2
4.197	Method 1	1	9971.9	10032.6
4.177	Method 1	1	9981.35	10027.5
4.145	Method 1	1	9972.32	10016.79
4.110	Method 1	1	9972.76	10019.71
4.013	Method 1	1	9972.1	10035.9

3.921	Method 1	1	9982.4710023.35	
3.826	Method 1	1	9991.63	10040
3.731	Method 1	1	9982.2	10028
3.649	Method 1	1	9981.1	10032.2
3.561	Method 1	1	9975	10045
3.520	Method 1	1	9970	10065
3.509	Method 1	1	9976.5	10060
3.497	Method 1	1	9987.8	10058
3.487	Method 1	1	9978.5	10025.6
3.460	Method 1	1	9986.5710035.84	
3.426	Method 1	1	9959.0210040.54	
3.412	Method 1	1	9955	10017.8
3.370	Method 1	1	986010022.33	
3.351	Method 1	1	9942.4710051.96	
3.319	Method 1	1	9990.0510093.71	
3.309	Method 1	1	998510054.49	
3.257	Method 1	1	9970	10016.4
3.168	Method 1	1	9973.22	10090
3.144	Method 1	1	9981.76	10125
3.114	Method 1	1	9954.85	10022.7
3.061	Method 1	1	9900	10015.9
3.042	Method 1	1	9870	10027.5
3.015	Method 1	1	9870	10011.2
2.984	Method 1	1	9975.6410027.54	
2.916	Method 1	1	9982.16	10070
2.850	Method 1	1	9950	10015.3
2.779	Method 1	1	9928.6610046.09	
2.677	Method 1	1	9975.5	10030.2
2.581	Method 1	1	9970.2	10019.4
2.522	Method 1	1	9973.96	10053.8
2.471	Method 1	1	988010012.67	
2.421	Method 1	1	995510039.96	
2.315	Method 1	1	9981.51	10022.9
2.233	Method 1	1	9956.510019.77	
2.118	Method 1	1	9984.09	10029.3
2.050	Method 1	1	9955	10025
2.011	Method 1	1	9937.0410029.94	
1.973	Method 1	1	9980.8610078.04	
1.944	Method 1	1	9979.0110041.18	
1.872	Method 1	1	9962.7710029.96	
1.784	Method 1	1	9960.3810021.16	
1.690	Method 1	1	9954.6710015.86	
1.641	Method 1	1	992210022.09	
1.600	Method 1	1	9925.8	10017.2
1.563	Method 1	1	995010037.06	
1.537	Method 1	1	9977.910038.37	
1.519	Method 1	1	9984.7810028.96	
1.497	Method 1	1	9977.2810029.03	
1.481	Method 1	1	9962.9610011.19	
1.425	Method 1	1	9977.8310026.28	
1.385	Method 1	1	9988.9310032.57	
1.356	Method 1	1	9973.7210047.24	
1.331	Method 1	1	9941.9710019.18	
1.304	Method 1	1	9982.08	10032.9
1.259	Method 1	1	9978.5610028.72	
1.222	Method 1	1	9975.2710016.89	
1.171	Method 1	1	9966.7110034.85	
1.152	Method 1	1	9971.5910015.18	
1.088	Method 1	1	9985.7810040.17	
1.008	Method 1	1	9983.7910027.71	
0.986	Method 1	1	9973.7110030.22	
0.960	Method 1	1	9950.5510009.81	
0.928	Method 1	1	9983.0910046.65	
0.852	Method 1	1	9972.2810025.96	
0.761	Method 1	1	991810018.14	
0.734	Method 1	1	996010024.62	
0.716	Method 1	1	9957.0710029.25	
0.695	Method 1	1	9977.51	10015.2
0.658	Method 1	1	9952.5210009.85	
0.625	Method 1	1	9941.3210018.14	
0.598	Method 1	1	9967.9110033.02	
0.583	Method 1	1	9974.9510050.81	
0.565	Method 1	1	9980.9510034.04	
0.520	Method 1	1	9971.4910027.68	
0.481	Method 1	1	9973.7810039.71	
0.386	Method 1	1	9978.92	10025.4
0.306	Method 1	1	993510025.23	
0.240	Method 1	1	9860	10060
0.185	Method 1	1	9968.0410044.19	
0.144	Method 1	1	9982.87	10041.5

River = Unnamed Wash 3 Reach = 1

RS	Profile	Method	Value1	Value2
4.540	PF 3	1	9976.7610025.52	
4.464	PF 3	1	9979.44	10019.7
4.428	PF 3	1	996010024.21	
4.417	PF 3	1	994510014.49	
4.399	PF 3	1	994010014.87	
4.379	PF 3	1	9976.0710022.86	
4.338	PF 3	1	9978.6110031.46	
4.289	PF 3	1	9980.0810023.62	
4.229	PF 3	1	9984.4	10025.2
4.197	PF 3	1	9971.9	10032.6
4.177	PF 3	1	9981.35	10027.5
4.145	PF 3	1	9972.3210016.79	

```
4.110   PF 3                    1 9972.7610019.71
4.013   PF 3                    1  9972.1 10035.9
3.921   PF 3                    1 9982.4710023.35
3.826   PF 3                    1 9991.63   10040
3.731   PF 3                    1  9982.2   10028
3.649   PF 3                    1  9981.1 10032.2
3.561   PF 3                    1    9975   10045
3.520   PF 3                    1    9970   10065
3.509   PF 3                    1  9976.5   10060
3.497   PF 3                    1  9987.8   10058
3.487   PF 3                    1  9978.5 10025.6
3.460   PF 3                    1 9986.5710035.84
3.426   PF 3                    1 9959.0210040.54
3.412   PF 3                    1    9955 10017.8
3.370   PF 3                    1    986010022.33
3.351   PF 3                    1 9942.4710051.96
3.319   PF 3                    1 9990.0510093.71
3.309   PF 3                    1    998510054.49
3.257   PF 3                    1    9970 10016.4
3.168   PF 3                    1 9973.22   10090
3.144   PF 3                    1 9981.76   10125
3.114   PF 3                    1 9954.85 10022.7
3.061   PF 3                    1    9900 10015.9
3.042   PF 3                    1    9870 10027.5
3.015   PF 3                    1    9870 10011.2
2.984   PF 3                    1 9975.6410027.54
2.916   PF 3                    1 9982.16   10070
2.850   PF 3                    1    9950 10015.3
2.779   PF 3                    1 9928.6610046.09
2.677   PF 3                    1  9975.5 10030.2
2.581   PF 3                    1  9970.2 10019.4
2.522   PF 3                    1 9973.96 10053.8
2.471   PF 3                    1    988010012.67
2.421   PF 3                    1    995510039.96
2.315   PF 3                    1 9981.51 10022.9
2.233   PF 3                    1  9956.510019.77
2.118   PF 3                    1 9984.09 10029.3
2.050   PF 3                    1    9955   10025
2.011   PF 3                    1 9937.0410029.94
1.973   PF 3                    1 9980.8610078.04
1.944   PF 3                    1 9979.0110041.18
1.872   PF 3                    1 9962.7710029.96
1.784   PF 3                    1 9960.3810021.16
1.690   PF 3                    1 9954.6710015.86
1.641   PF 3                    1    992210022.09
1.600   PF 3                    1  9925.8 10017.2
1.563   PF 3                    1    995010037.06
1.537   PF 3                    1  9977.910038.37
1.519   PF 3                    1 9984.7810028.96
1.497   PF 3                    1 9977.2810029.03
1.481   PF 3                    1 9962.9610011.19
1.425   PF 3                    1 9977.8310026.28
1.385   PF 3                    1 9988.9310032.57
1.356   PF 3                    1 9973.7210047.24
1.331   PF 3                    1 9941.9710019.18
1.304   PF 3                    1 9982.08 10032.9
1.259   PF 3                    1 9978.5610028.72
1.222   PF 3                    1 9975.2710016.89
1.171   PF 3                    1 9966.7110034.85
1.152   PF 3                    1 9971.5910015.18
1.088   PF 3                    1 9985.7810040.17
1.008   PF 3                    1 9983.7910027.71
0.986   PF 3                    1 9973.7110030.22
0.960   PF 3                    1 9950.5510009.81
0.928   PF 3                    1 9983.0910046.65
0.852   PF 3                    1 9972.2810025.96
0.761   PF 3                    1    991810018.14
0.734   PF 3                    1    996010024.62
0.716   PF 3                    1 9957.0710029.25
0.695   PF 3                    1 9977.51 10015.2
0.658   PF 3                    1 9952.5210009.85
0.625   PF 3                    1 9941.3210018.14
0.598   PF 3                    1 9967.9110033.02
0.583   PF 3                    1 9974.9510050.81
0.565   PF 3                    1 9980.9510034.04
0.520   PF 3                    1 9971.4910027.68
0.481   PF 3                    1 9973.7810039.71
0.386   PF 3                    1 9978.92 10025.4
0.306   PF 3                    1    993510025.23
0.240   PF 3                    1    9860   10060
0.185   PF 3                    1 9968.0410044.19
0.144   PF 3                    1 9982.87 10041.5
```

FLOW DATA

Flow Title: 100-yr Existing Conditions
Flow File : p:\82000146\Calcs\HEC-RAS\FEMA\Unnamed_Wash3\Un3_FpFw.f01

Flow Data (cfs)

River	Reach	RS	Floodplain	Method 1
Unnamed Wash 3	1	4.540	1220	1220

Unnamed Wash 3	1	4.197	1990	1990
Unnamed Wash 3	1	3.168	2220	2220
Unnamed Wash 3	1	1.641	2570	2570

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Unnamed Wash 3	1	Floodplain		Normal S = .0134
Unnamed Wash 3	1	Method 1		Normal S = .0134

GEOMETRY DATA

Geometry Title: Existing Conditions
Geometry File : p:\82000146\Calcs\HEC-RAS\FEMA\Unnamed_Wash3\Un3_FpFw.g01

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 4.540

INPUT
Description: Upstream study limits.
100-year, 6-hour Peak Discharge of 1220
cfs from HEC-1 model at station S301.
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9895.2	1658.8	9902.8	1657.4	9904.7	1657	9905.9	1656.8	9909.2	1656.1
9918.6	1652.9	9919.9	1652.7	9920.4	1652.6	9923.1	1652.4	9955.7	1647.8
9959.2	1647.3	9963.5	1645.9	9968.4	1644	9979.6	1640.1	9981.5	1639.4
9983.3	1638.8	9991.5	1637	9993.1	1637	9997	1636.8	9999.2	1636.8
10002.7	1636.7	10005.2	1636.7	10013.7	1637.5	10020.9	1639.7	10043.5	1646.5
10044	1646.6	10044.1	1646.6	10044.2	1646.6	10053.6	1647.3	10058	1647.8
10079.3	1651.3	10111.1	1658	10118.5	1659.2				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9895.2	.05	9979.6	.045	10020.9	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.6	10020.9	408.34	403.08	393.77	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9937.40	9979.60	2.87	1.41	3.01	0.23	0.49	2.04
LB 9979.60	9987.86	115.35	18.85	8.59	9.45	2.28	6.12
9987.86	9996.12	292.34	32.57	8.35	23.96	3.94	8.98
9996.12	10004.38	344.09	35.76	8.26	28.20	4.33	9.62
10004.38	10012.64	310.32	33.66	8.29	25.44	4.07	9.22
10012.64	RB 10020.90	146.77	21.79	8.59	12.03	2.64	6.74
10020.90	10069.70	8.28	3.21	4.82	0.68	0.69	2.58

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9937.40	9979.60	4.68	2.09	3.25	0.38	0.74	2.24
LB 9979.60	9987.86	121.80	20.83	8.59	9.98	2.52	5.85
9987.86	9996.12	288.39	34.54	8.35	23.64	4.18	8.35
9996.12	10004.38	336.55	37.74	8.26	27.59	4.57	8.92
10004.38	10012.64	305.19	35.64	8.29	25.02	4.31	8.56
10012.64	RB 10020.90	151.69	23.76	8.59	12.43	2.88	6.38
10020.90	10069.70	11.69	4.32	5.06	0.96	0.93	2.71

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 4.464

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9924.9	1651.2	9925	1651.2	9928.7	1650.8	9938.6	1649.6	9947.5	1648.3
9957.1	1645.1	9963.2	1644	9968.5	1641.5	9980.3	1636.2	9989.2	1632.2
9989.9	1631.9	9990.7	1631.9	10000.9	1632.3	10005.6	1632.5	10006	1632.5
10006.4	1632.6	10019.6	1634.2	10019.7	1634.2	10061.3	1637	10069.4	1637.6
10069.9	1637.7	10075.7	1639.6	10114.3	1652.2	10116.2	1652.9	10122	1654.4
10134.3	1657	10136.4	1657.5	10137	1657.6				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9924.9	.05	9980.3	.045	10019.7	.05

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

9980.3 10019.7 177.57 190.3 196.89 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.22	9980.30	0.16	0.17	0.94	0.01	0.19	0.96
LB 9980.30	9988.18	86.68	16.99	8.64	7.10	2.16	5.10
9988.18	9996.06	313.53	35.71	8.04	25.70	4.53	8.78
9996.06	10003.94	293.20	34.03	7.89	24.03	4.32	8.61
10003.94	10011.82	235.47	29.91	7.93	19.30	3.80	7.87
10011.82	RB 10019.70	146.10	22.46	7.94	11.98	2.85	6.50
10019.70	10078.35	144.87	42.27	35.52	11.87	1.19	3.43

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.22	9980.30	0.60	0.39	1.21	0.05	0.46	1.52
LB 9980.30	9988.18	108.98	19.09	8.64	8.93	2.42	5.71
9988.18	9996.06	357.09	37.81	8.04	29.27	4.80	9.44
9996.06	10003.94	335.46	36.13	7.89	27.50	4.58	9.28
10003.94	10011.82	273.01	32.01	7.93	22.38	4.06	8.53
10011.82	RB 10019.70	144.87	24.56	10.59	11.87	3.12	5.90

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 4.428

INPUT
Description:
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9911.2	1640.3	9914.4	1640	9917.1	1639.3	9942.1	1632.7	9951.8	1633.3
9958.4	1633.8	9966.1	1633.6	9967.9	1633.6	9969.2	1633.3	9984.5	1630.7
9997.6	1630.8	10003.4	1630.8	10013.4	1632.8	10020.8	1634.3	10023.2	1634.8
10027	1636.7	10033.9	1640.1	10063.4	1655.9				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9911.2	.06	9969.2	.05	10023.2	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969.2	10023.2	53.35	59.8	61.25	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9922.80	9934.40	0.52	0.62	2.24	0.04	0.29	0.84
9934.40	9946.00	65.10	21.92	11.87	5.34	1.89	2.97
9946.00	9957.60	71.62	23.02	11.63	5.87	1.98	3.11
9957.60	9969.20	52.27	19.06	11.64	4.28	1.64	2.74
LB 9969.20	9980.00	147.45	31.56	10.95	12.09	2.92	4.67
9980.00	9990.80	296.76	47.86	10.86	24.32	4.43	6.20
9990.80	10001.60	308.08	48.83	10.80	25.25	4.52	6.31
10001.60	10012.40	223.58	40.55	10.98	18.33	3.75	5.51
10012.40	RB 10023.20	54.43	17.40	11.02	4.46	1.61	3.13
10023.20	10043.30	0.19	0.25	1.13	0.02	0.25	0.75

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.60	9969.20	50.77	18.20	11.09	4.16	1.98	2.79
LB 9969.20	9980.00	172.83	34.85	10.95	14.17	3.23	4.96
9980.00	9990.80	329.40	51.15	10.86	27.00	4.74	6.44
9990.80	10001.60	341.24	52.12	10.80	27.97	4.83	6.55
10001.60	10012.40	252.98	43.84	10.98	20.74	4.06	5.77
10012.40	RB 10023.20	72.17	20.69	11.02	5.92	1.92	3.49
10023.20	10043.30	0.60	0.56	1.43	0.05	0.56	1.07

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 4.417

INPUT
Description:
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9895.8	1638.8	9902	1638.3	9917.5	1634.4	9926.7	1631.8	9934	1632.6
9947.4	1633.7	9953.7	1633.7	9958.6	1633.6	9974.7	1632.9	9977.6	1632.8
9987.5	1631.2	9995	1629.8	9999.8	1629.6	10006.5	1629.3	10013.1	1633.3
10020.4	1637.7	10042.6	1651	10052.4	1655.8				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9895.8	.06	9974.7	.05	10013.1	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.7	10013.1	58.11	95.09	108.36	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9911.58	9927.36	38.56	11.18	9.26	3.16	1.25	3.45
9927.36	9943.14	91.20	23.25	15.85	7.48	1.47	3.92
9943.14	9958.92	16.10	8.20	15.80	1.32	0.52	1.96
9958.92	9974.70	43.49	14.89	15.79	3.57	0.94	2.92
LB 9974.70	9982.38	58.75	11.97	7.74	4.82	1.56	4.91
9982.38	9990.06	149.90	21.05	7.79	12.29	2.74	7.12
9990.06	9997.74	289.23	31.19	7.77	23.71	4.06	9.27
9997.74	10005.42	360.74	35.46	7.69	29.57	4.62	10.17
10005.42	RB 10013.10	171.07	23.92	8.80	14.02	3.12	7.15
10013.10	10032.75	0.96	0.58	1.62	0.08	0.42	1.65

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9943.14	9958.92	18.88	8.38	14.67	1.55	0.60	2.25
9958.92	9974.70	56.09	16.59	15.79	4.60	1.05	3.38
LB 9974.70	9982.38	69.32	12.80	7.74	5.68	1.67	5.42
9982.38	9990.06	168.71	21.88	7.79	13.83	2.85	7.71
9990.06	9997.74	318.87	32.02	7.77	26.14	4.17	9.96
9997.74	10005.42	395.64	36.29	7.69	32.43	4.73	10.90
10005.42	RB 10013.10	191.07	24.75	8.80	15.66	3.22	7.72
10013.10	10032.75	1.41	0.73	1.73	0.12	0.53	1.93

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 4.399

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9900.2	1638.6	9908.8	1637.9	9912.5	1637.6	9931.1	1632.2	9938.1	1630
9956.1	1632.3	9957.1	1632.5	9957.8	1632.4	9958.9	1632.3	9974	1631.1
9979.4	1630.2	9994.3	1627.5	10000.7	1627.1	10007.3	1626.7	10010.9	1629
10014	1631.2	10017.7	1633.9	10025.6	1639.3	10040.9	1650	10046.4	1654.7
10047.6	1655.6								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9900.2	.06	9974	.05	10014	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974	10014	88.85	100.95	108.28	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9929.72	9944.48	50.56	14.50	12.56	4.14	1.19	3.49
9944.48	9959.24	8.24	4.09	8.06	0.68	0.51	2.02
9959.24	9974.00	5.57	3.42	9.31	0.46	0.37	1.63
LB 9974.00	9982.00	52.80	11.28	8.12	4.33	1.41	4.68
9982.00	9990.00	168.71	22.67	8.13	13.83	2.83	7.44

9990.00	9998.00	324.13	33.45	8.08	26.57	4.18	9.69
9998.00	10006.00	412.22	38.52	8.02	33.79	4.82	10.70
10006.00	RB 10014.00	197.40	26.37	9.38	16.18	3.30	7.49
10014.00	10030.80	0.38	0.28	1.08	0.03	0.32	1.36

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9929.72	9944.48	18.31	5.67	6.07	1.50	1.27	3.23
9944.48	9959.24	7.83	3.75	7.72	0.64	0.49	2.09
9959.24	9974.00	5.06	3.03	8.77	0.41	0.35	1.67
LB 9974.00	9982.00	52.62	10.94	8.12	4.31	1.37	4.81
9982.00	9990.00	172.60	22.32	8.13	14.15	2.79	7.73
9990.00	9998.00	334.36	33.11	8.08	27.41	4.14	10.10
9998.00	10006.00	426.20	38.18	8.02	34.93	4.77	11.16
10006.00	RB 10014.00	202.69	26.03	9.38	16.61	3.25	7.79
10014.00	10030.80	0.33	0.24	1.01	0.03	0.30	1.37

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 4.379

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9931.3	1638.7	9931.9	1638.7	9940.2	1637.8	9950.8	1636.4	9970.5	1631.1
9977	1629.4	9977	1629.3	9977.8	1629.1	9990.9	1626	9998.5	1625.9
10005.2	1625.7	10014.5	1626.6	10017.5	1626.8	10021.8	1629.1	10033.3	1635
10050.2	1643.7	10056.6	1646.8	10060.6	1648.3	10062.7	1649.5	10063.2	1649.6

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9931.3	.05	9977	.045	10021.8	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977	10021.8	227.3	216.77	209.09	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9954.15	9977.00	0.12	0.11	0.97	0.01	0.12	1.01
LB 9977.00	9985.96	68.63	12.68	9.31	5.63	1.41	5.41
9985.96	9994.92	290.83	29.87	9.10	23.84	3.33	9.74
9994.92	10003.88	362.60	33.90	8.96	29.72	3.78	10.70
10003.88	10012.84	337.05	32.49	9.00	27.63	3.63	10.37
10012.84	RB 10021.80	160.30	21.31	9.55	13.14	2.38	7.52
10021.80	10042.50	0.47	0.29	1.19	0.04	0.27	1.63

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9954.15	9977.00	0.12	0.12	0.97	0.01	0.13	1.04
LB 9977.00	9985.96	68.89	12.73	9.31	5.65	1.42	5.41
9985.96	9994.92	290.76	29.93	9.10	23.83	3.34	9.72
9994.92	10003.88	362.39	33.95	8.96	29.70	3.79	10.67
10003.88	10012.84	336.89	32.55	9.00	27.61	3.63	10.35
10012.84	RB 10021.80	160.46	21.36	9.55	13.15	2.38	7.51
10021.80	10042.50	0.49	0.30	1.20	0.04	0.28	1.65

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 4.338

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9955	1638.6	9960.5	1635.9	9979.6	1625.6	9984.3	1623	9988.1	1622.6
9988.3	1622.6	9989.2	1622.4	10000.8	1621.4	10001.3	1621.5	10021.1	1624.6
10021.2	1624.6	10043.3	1627.9	10044.3	1628	10047.5	1628.9	10084.6	1638.6
10088.8	1639.6	10098.3	1642.7	10102.2	1644.3	10106.8	1645.9		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9955	.05	9979.6	.045	10021.2	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9979.6 10021.2 271.97 262.62 247.96 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9967.30	9979.60	0.35	0.26	1.12	0.03	0.27	1.36
LB 9979.60	9987.92	136.28	20.63	9.01	11.17	2.48	6.60
9987.92	9996.24	313.38	33.01	8.37	25.69	3.97	9.49
9996.24	10004.56	383.26	37.28	8.39	31.41	4.48	10.28
10004.56	10012.88	249.53	28.87	8.42	20.45	3.47	8.64
10012.88	RB 10021.20	113.89	18.03	8.42	9.34	2.17	6.32
10021.20	10064.00	23.30	7.85	10.37	1.91	0.77	2.97

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9967.30	9979.60	0.34	0.25	1.10	0.03	0.26	1.35
LB 9979.60	9987.92	136.09	20.56	9.01	11.15	2.47	6.62
9987.92	9996.24	313.59	32.95	8.37	25.70	3.96	9.52
9996.24	10004.56	383.68	37.21	8.39	31.45	4.47	10.31
10004.56	10012.88	249.58	28.80	8.42	20.46	3.46	8.67
10012.88	RB 10021.20	113.64	17.96	8.42	9.31	2.16	6.33
10021.20	10064.00	23.07	7.77	10.31	1.89	0.76	2.97

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 4.289

INPUT
Description:
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9920.3	1634.4	9942.1	1631	9949.4	1629.8	9964.8	1626.2	9978.9	1623
9981.9	1621.6	9991.8	1617.7	10011.4	1618.5	10013.8	1618.6	10018.4	1620.6
10018.5	1620.6	10042.6	1629.3	10051.2	1633.3	10056.4	1634.4	10072.4	1638.7

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9920.3	.05	9981.9	.045	10018.4	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9981.9 10018.4 306.45 313.66 311.67 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9951.10	9981.90	1.39	0.77	2.01	0.11	0.42	1.80
LB 9981.90	9989.20	100.97	16.69	7.85	8.28	2.29	6.05
9989.20	9996.50	322.19	32.88	7.50	26.41	4.50	9.80
9996.50	10003.80	316.21	32.18	7.31	25.92	4.41	9.83
10003.80	10011.10	281.36	30.00	7.31	23.06	4.11	9.38
10011.10	RB 10018.40	182.41	23.64	7.72	14.95	3.24	7.71
10018.40	10045.40	15.47	4.92	5.54	1.27	0.94	3.15

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9951.10	9981.90	1.44	0.79	2.02	0.12	0.43	1.82
LB 9981.90	9989.20	101.27	16.77	7.85	8.30	2.30	6.04
9989.20	9996.50	321.91	32.96	7.50	26.39	4.52	9.77
9996.50	10003.80	315.96	32.26	7.31	25.90	4.42	9.79
10003.80	10011.10	281.22	30.08	7.31	23.05	4.12	9.35
10011.10	RB 10018.40	182.53	23.72	7.72	14.96	3.25	7.69
10018.40	10045.40	15.67	4.97	5.55	1.28	0.95	3.15

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 4.229

INPUT
Description:
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9934.4	1629.8	9958.3	1628.2	9977.7	1619.1	9984.4	1616.1	9993.5	1613.9
10000.2	1613.2	10001.1	1613.1	10001.8	1613.1	10025.2	1617.1	10025.9	1617.2

10049.4 1618 10056.6 1618.3 10058.4 1618.4 10073.8 1619.4 10076.2 1619.4
10083.3 1619.9

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9934.4	.06	9984.4	.05	10025.2	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.4	10025.2	188.63	169.51	127.27	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9967.73	9984.40	15.21	5.15	5.26	1.25	1.07	2.95
LB 9984.40	9992.56	183.43	25.57	8.40	15.04	3.13	7.17
9992.56	10000.72	361.23	38.10	8.23	29.61	4.67	9.48
10000.72	10008.88	354.07	37.71	8.26	29.02	4.62	9.39
10008.88	10017.04	195.70	26.44	8.28	16.04	3.24	7.40
10017.04	RB 10025.20	76.57	15.06	8.28	6.28	1.85	5.09
10025.20	10039.72	27.92	12.00	14.54	2.29	0.83	2.33
10039.72	10054.25	5.86	4.70	14.54	0.48	0.32	1.25
10054.25	10068.78	0.01	0.02	1.09	0.00	0.02	0.21

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9984.40	9992.56	170.83	28.79	10.94	14.00	3.53	5.93
9992.56	10000.72	377.03	41.31	8.23	30.90	5.06	9.13
10000.72	10008.88	370.04	40.92	8.26	30.33	5.02	9.04
10008.88	10017.04	216.08	29.65	8.28	17.71	3.63	7.29
10017.04	RB 10025.20	86.03	18.27	9.82	7.05	2.24	4.71

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 4.197

INPUT
Description: 100-year, 6-hour Peak Discharge of 1990 cfs from HEC-1 model at station C301.

Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9935.2	1621.1	9948.7	1619.2	9962.5	1617.3	9971.7	1615.3	9971.9	1615.3
9986.4	1611.7	9987	1611.5	9988.7	1611.5	10013.7	1611.3	10017.3	1612
10030.1	1614.3	10032.6	1614.8	10047.6	1615.4	10054.8	1615.7	10063.9	1615.9
10078.6	1616.6	10085.8	1617.1	10096.6	1617.7	10125.7	1618.7	10125.9	1618.7
10127	1618.8	10133.6	1620.2						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9935.2	.06	9971.9	.05	10032.6	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.9	10032.6	110.53	106.77	95.7	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9959.67	9971.90	9.55	5.24	7.11	0.48	0.75	1.82
LB 9971.90	9984.04	188.99	36.10	12.51	9.50	2.97	5.23
9984.04	9996.18	484.09	62.94	12.24	24.33	5.18	7.69
9996.18	10008.32	517.11	65.26	12.14	25.99	5.38	7.92
10008.32	10020.46	470.25	61.88	12.26	23.63	5.10	7.60
10020.46	RB 10032.60	204.68	37.67	12.34	10.29	3.10	5.43
10032.60	10057.85	96.36	36.92	25.27	4.84	1.46	2.61
10057.85	10083.10	18.97	13.45	23.18	0.95	0.58	1.41

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9971.90	9984.04	209.17	45.10	14.72	10.51	3.72	4.64
9984.04	9996.18	514.86	71.94	12.24	25.87	5.93	7.16
9996.18	10008.32	545.91	74.26	12.14	27.43	6.12	7.35
10008.32	10020.46	501.93	70.88	12.26	25.22	5.84	7.08
10020.46	RB 10032.60	218.13	46.67	15.05	10.96	3.84	4.67

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 4.177

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9963	1621.7	9967.1	1621.5	9978.8	1616.8	9985.6	1614	9996.5	1609.5
10002.1	1609.3	10005.1	1609.3	10008.1	1609.8	10011	1610.3	10026	1611.9
10027.5	1612	10028.4	1612.1	10034.2	1612.4	10047.2	1613.5	10050.8	1613.8
10053.9	1613.9	10062.2	1616.5	10082.7	1623.3	10083.1	1623.1	10096.4	1618.8
10100.6	1617.2	10103.7	1616.7	10107.3	1616.5	10124.8	1615.7	10129.9	1615.4
10140.8	1614.8	10151.4	1618.9	10155	1620.1				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9963	.06	9985.6	.05	10027.5	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.6	10027.5	164.5	170.2	145.4	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10082.7	10155	1623.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9978.07	9985.60	7.42	3.72	4.60	0.37	0.88	2.00
LB 9985.60	9993.98	170.23	29.16	9.07	8.55	3.48	5.84
9993.98	10002.36	457.95	51.67	8.59	23.01	6.17	8.86
10002.36	10010.74	458.26	51.38	8.46	23.03	6.13	8.92
10010.74	10019.12	330.34	42.16	8.43	16.60	5.03	7.84
10019.12	RB 10027.50	239.07	34.71	8.42	12.01	4.14	6.89
10027.50	10041.30	212.85	45.28	13.84	10.70	3.28	4.70
10041.30	10055.10	108.03	30.19	13.89	5.43	2.19	3.58
10055.10	10068.90	5.85	3.47	4.93	0.29	0.74	1.69
10068.90	10118.85						
10118.85	10130.90	0.00	1.42	7.20	0.00	0.20	0.00
10130.90	10142.95	0.00	7.85	12.22	0.00	0.65	0.00
10142.95	10155.00	0.00	0.02	0.33	0.00	0.06	0.00

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9978.07	9985.60	10.06	3.93	4.65	0.51	0.92	2.56
LB 9985.60	9993.98	211.87	29.58	9.07	10.65	3.53	7.16
9993.98	10002.36	564.12	52.09	8.59	28.35	6.22	10.83
10002.36	10010.74	564.55	51.80	8.46	28.37	6.18	10.90
10010.74	10019.12	408.15	42.58	8.43	20.51	5.08	9.59
10019.12	RB 10027.50	231.26	35.13	12.22	11.62	4.19	6.58

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 4.145

INPUT
Description:
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9951.3	1619.7	9954.1	1619.5	9957.9	1618.8	9973.8	1611.7	9973.8	1611.6
9983.6	1607.4	10000.6	1606.3	10001.5	1606.3	10015.4	1611.8	10032	1618.5
10046.7	1623.5								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9951.3	.05	9973.8	.045	10015.4	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9973.8	10015.4	179.55	182.46	183.66	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9962.55	9973.80	0.91	0.49	1.62	0.05	0.33	1.86
LB 9973.80	9982.12	156.55	21.17	9.15	7.87	2.54	7.39
9982.12	9990.44	523.19	42.33	8.46	26.29	5.09	12.36
9990.44	9998.76	633.76	47.20	8.34	31.85	5.67	13.43
9998.76	10007.08	549.52	44.17	8.75	27.61	5.31	12.44
10007.08	RB 10015.40	125.42	18.37	8.95	6.30	2.21	6.83
10015.40	10031.05	0.66	0.39	1.50	0.03	0.28	1.68

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9962.55	9973.80	0.98	0.52	1.64	0.05	0.35	1.89
LB 9973.80	9982.12	157.31	21.32	9.15	7.90	2.56	7.38
9982.12	9990.44	522.81	42.47	8.46	26.27	5.10	12.31
9990.44	9998.76	632.94	47.34	8.34	31.81	5.69	13.37
9998.76	10007.08	549.00	44.31	8.75	27.59	5.33	12.39
10007.08	RB 10015.40	126.24	18.51	8.95	6.34	2.22	6.82
10015.40	10031.05	0.71	0.41	1.52	0.04	0.30	1.72

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 4.110

INPUT
Description:
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9963.5	1615.8	9968.3	1611.6	9974.1	1607.1	9979.1	1603.3	9996.3	1602.6
9998.6	1602.6	10001.6	1602.4	10007.1	1604.3	10016	1607	10051.8	1618
10069.3	1619.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9963.5	.05	9974.1	.045	10016	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.1	10016	512.17	510.52	514.71	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.80	9974.10	1.47	0.70	1.70	0.07	0.52	2.10
LB 9974.10	9982.48	275.72	31.30	9.66	13.86	3.73	8.81
9982.48	9990.86	517.44	43.15	8.39	26.00	5.15	11.99
9990.86	9999.24	572.56	45.85	8.39	28.77	5.47	12.49
9999.24	10007.62	475.41	41.67	8.73	23.89	4.97	11.41
10007.62	RB 10016.00	142.05	20.21	8.76	7.14	2.41	7.03
10016.00	10042.65	5.37	2.12	3.88	0.27	0.57	2.53

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.80	9974.10	1.42	0.68	1.67	0.07	0.51	2.09
LB 9974.10	9982.48	275.42	31.18	9.66	13.84	3.72	8.83
9982.48	9990.86	517.80	43.03	8.39	26.02	5.13	12.03
9990.86	9999.24	573.11	45.73	8.39	28.80	5.46	12.53
9999.24	10007.62	475.65	41.55	8.73	23.90	4.96	11.45
10007.62	RB 10016.00	141.39	20.09	8.76	7.11	2.40	7.04
10016.00	10042.65	5.22	2.06	3.84	0.26	0.56	2.53

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3

REACH: 1 RS: 4.013

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9932.4	1610.4	9939.3	1608.8	9945.3	1607.2	9957.6	1603.5	9975	1598.4
9975	1598.3	9991.8	1596.2	9996.3	1595.6	9996.7	1595.6	9999.9	1594.8
10009.2	1594.8	10023.4	1595	10032.1	1597.4	10032.5	1597.6	10032.6	1597.6
10036.4	1599.5	10053.4	1608.8	10056	1609.4	10057.4	1609.8	10068.4	1613.7
10073.1	1614								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9932.4	.05	9975	.045	10032.5	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9975 10032.5 481.7 486.09 518.09 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.70	9975.00	2.81	1.24	3.03	0.14	0.43	2.27
LB 9975.00	9986.50	116.53	19.21	11.69	5.86	1.67	6.07
9986.50	9998.00	332.05	35.92	11.62	16.69	3.12	9.24
9998.00	10009.50	592.67	50.74	11.56	29.78	4.41	11.68
10009.50	10021.00	584.37	50.21	11.50	29.37	4.37	11.64
10021.00	RB 10032.50	351.60	37.49	11.87	17.67	3.26	9.38
10032.50	10052.80	9.97	2.89	3.79	0.50	0.85	3.45

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.70	9975.00	2.95	1.28	3.04	0.15	0.44	2.30
LB 9975.00	9986.50	117.43	19.38	11.69	5.90	1.69	6.06
9986.50	9998.00	332.33	36.09	11.62	16.70	3.14	9.21
9998.00	10009.50	591.81	50.91	11.56	29.74	4.43	11.62
10009.50	10021.00	583.55	50.38	11.50	29.32	4.38	11.58
10021.00	RB 10032.50	351.78	37.66	11.87	17.68	3.28	9.34
10032.50	10052.80	10.16	2.94	3.81	0.51	0.87	3.45

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.921

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9921.8	1607	9941.1	1605.6	9946.1	1603.4	9952.2	1601.5	9955.9	1600.4
9958.8	1599.1	9969.1	1596.1	9971.7	1595	9980.2	1593	9983.8	1590
9987.9	1586.5	9990	1585.2	9993.7	1585.2	10011.1	1585.1	10020.5	1589.7
10027.4	1593.1	10035.1	1596.7	10035.7	1597.1	10037.2	1598	10040.5	1599.6
10048.6	1603.5	10059.1	1608.2	10059.2	1608.1				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9921.8	.05	9983.8	.045	10020.5	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9983.8 10020.5 494.14 502.61 500.07 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9952.80	9983.80	1.45	0.73	1.73	0.07	0.55	1.98
LB 9983.80	9991.14	241.08	29.47	9.00	12.11	4.02	8.18
9991.14	9998.48	526.63	43.41	7.34	26.46	5.91	12.13
9998.48	10005.82	532.59	43.71	7.34	26.76	5.95	12.19
10005.82	10013.16	506.86	42.96	7.57	25.47	5.85	11.80
10013.16	RB 10020.50	176.23	23.49	8.17	8.86	3.20	7.50
10020.50	10039.85	5.16	2.00	3.18	0.26	0.70	2.58

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross

section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9952.80	9983.80	2.28	1.07	1.98	0.11	0.80	2.14
LB 9983.80	9991.14	246.22	31.32	9.00	12.37	4.27	7.86
9991.14	9998.48	521.01	45.25	7.34	26.18	6.17	11.51
9998.48	10005.82	526.67	45.55	7.34	26.47	6.21	11.56
10005.82	10013.16	501.80	44.80	7.57	25.22	6.10	11.20
10013.16	RB 10020.50	184.51	25.34	8.17	9.27	3.45	7.28
10020.50	10039.85	7.51	2.72	3.43	0.38	0.95	2.76

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.826

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9953.7	1602.3	9958.3	1602	9966.4	1598.3	9980.1	1591.2	9985.5	1588.6
9992.3	1584.9	10002.2	1579.5	10013.6	1580.8	10014.2	1580.9	10014.4	1580.9
10023	1581.4	10028.1	1581.5	10040	1582.134	10060	1583.2	10062.2	1583.5
10069.4	1584.1	10079.8	1585.1	10084.7	1586.8	10088.1	1588	10114.5	1595.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9953.7	.05	9992.3	.045	10040	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9992.3	10040	508.81	500.95	474.83	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9979.43	9992.30	0.11	0.12	0.76	0.01	0.18	0.94
LB 9992.30	10001.84	185.31	28.28	10.87	9.31	2.96	6.55
10001.84	10011.38	520.90	50.13	9.65	26.18	5.26	10.39
10011.38	10020.92	373.22	40.92	9.57	18.75	4.29	9.12
10020.92	10030.46	306.76	36.33	9.55	15.42	3.81	8.44
10030.46	RB 10040.00	251.63	32.27	9.55	12.64	3.38	7.80
10040.00	10049.31	154.32	26.82	9.33	7.75	2.88	5.75
10049.31	10058.63	112.59	22.20	9.33	5.66	2.38	5.07
10058.63	10067.94	63.98	15.83	9.35	3.21	1.70	4.04
10067.94	10077.25	20.30	7.95	9.35	1.02	0.85	2.55
10077.25	10086.56	0.86	0.76	3.06	0.04	0.25	1.13

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9979.43	9992.30	1.06	0.62	1.51	0.05	0.93	1.70
LB 9992.30	10001.84	255.19	35.40	10.87	12.82	3.71	7.21
10001.84	10011.38	615.58	57.25	9.65	30.93	6.00	10.75
10011.38	10020.92	461.85	48.04	9.57	23.21	5.04	9.61
10020.92	10030.46	391.51	43.46	9.55	19.67	4.56	9.01
10030.46	RB 10040.00	264.80	39.39	13.43	13.31	4.13	6.72

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.731

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9918.7	1594.8	9939.9	1588	9964.5	1578.9	9974.1	1577.8	9982.2	1576.7
9988.9	1574.8	9991.3	1574.1	9998.7	1574	10009.9	1573.7	10017	1575.7
10021.9	1577	10023.9	1577.4	10024	1577.5	10033.8	1578	10036.2	1578.1
10039.3	1577.8	10046	1576.8	10054	1577.7	10057.8	1578	10076.2	1578.2
10079.4	1578.2	10079.6	1578.2	10080	1578.2	10099.7	1578.6	10104.9	1578.7
10123.2	1579.2	10159.2	1579.2	10159.4	1579.2	10159.5	1579.2	10159.8	1579.2
10167.7	1580.8	10168.8	1581.2	10172	1581.6	10175.2	1581.9	10186.4	1582.7
10187.7	1582.9	10197.4	1585.5	10201.1	1586.5				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9918.7	.05	9982.2	.045	10024	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.2	10024	432.61	436.4	445.33	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9961.03	9982.20	74.01	20.37	18.12	3.72	1.13	3.63
LB 9982.20	9990.56	235.22	29.12	8.69	11.82	3.48	8.08
9990.56	9998.92	430.20	41.24	8.39	21.62	4.93	10.43
9998.92	10007.28	457.83	42.76	8.36	23.01	5.11	10.71
10007.28	10015.64	395.02	39.54	8.58	19.85	4.73	9.99
10015.64	RB 10024.00	141.75	21.46	8.66	7.12	2.57	6.61
10024.00	10046.14	105.57	29.40	22.24	5.31	1.33	3.59
10046.14	10068.28	96.70	27.87	22.20	4.86	1.26	3.47
10068.28	10090.41	41.97	16.87	22.14	2.11	0.76	2.49
10090.41	10112.55	11.67	7.83	22.14	0.59	0.35	1.49
10112.55	10134.69	0.05	0.14	3.20	0.00	0.04	0.37

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9982.20	9990.56	245.80	32.29	11.37	12.35	3.86	7.61
9990.56	9998.92	512.01	44.41	8.39	25.73	5.31	11.53
9998.92	10007.28	542.61	45.93	8.36	27.27	5.49	11.81
10007.28	10015.64	472.54	42.71	8.58	23.75	5.11	11.06
10015.64	RB 10024.00	187.61	24.63	8.66	9.43	2.95	7.62
10024.00	10046.14	29.43	7.09	5.68	1.48	1.77	4.15

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.649

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9913.3	1587.3	9934.6	1581	9954	1574.9	9977.7	1572.3	9980.6	1572
9981.1	1571.9	9987.8	1570.6	9992.3	1569.7	10010.1	1569.5	10011.6	1569.5
10011.8	1569.5	10012.5	1569.6	10021.2	1570.8	10023.5	1571.3	10032.2	1572.3
10038.6	1572.6	10049.6	1572.6	10061.3	1572.7	10071.1	1575	10075.6	1576.4
10094.4	1581.3	10105.2	1583.7	10114.2	1587.6	10115.9	1588.2		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9913.3	.05	9981.1	.045	10032.2	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.1	10032.2	465.68	461.55	451.4	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9947.20	9964.15	6.18	4.61	9.22	0.31	0.50	1.34
9964.15	9981.10	107.86	32.78	17.06	5.42	1.93	3.29
LB 9981.10	9991.32	254.72	39.73	10.41	12.80	3.89	6.41
9991.32	10001.54	409.02	52.43	10.24	20.55	5.13	7.80
10001.54	10011.76	425.88	53.67	10.22	21.40	5.25	7.93
10011.76	10021.98	337.57	46.88	10.33	16.96	4.59	7.20
10021.98	RB 10032.20	174.99	31.59	10.31	8.79	3.09	5.54
10032.20	10048.94	148.79	37.66	16.75	7.48	2.25	3.95
10048.94	10065.68	121.42	33.42	16.86	6.10	2.00	3.63
10065.68	10082.42	3.58	2.41	4.66	0.18	0.53	1.48

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9981.10	9991.32	282.57	46.54	13.97	14.20	4.55	6.07
9991.32	10001.54	519.75	59.24	10.24	26.12	5.80	8.77
10001.54	10011.76	538.77	60.49	10.22	27.07	5.92	8.91
10011.76	10021.98	438.72	53.70	10.33	22.05	5.25	8.17
10021.98	RB 10032.20	210.19	38.40	13.47	10.56	3.76	5.47

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.561

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9896.3	1582.1	9898.3	1581.5	9903.6	1579.7	9918.9	1575.1	9932.3	1570.8
9932.7	1570.7	9951.5	1569.3	9952.6	1569.4	9953.2	1569.3	9955.6	1569.3
9966.3	1569.3	9971.8	1569.3	9975.1	1569.1	9975.7	1569.3	9980.6	1569.1
9980.9	1569	9985.7	1568.6	9985.8	1568.6	9990.3	1567.2	9996.6	1565.2
10001.3	1565.3	10010.5	1565.3	10024.2	1568.6	10025.1	1568.8	10025.2	1568.8
10027.8	1568.8	10067.1	1568.5	10074.9	1570.6	10097.8	1578.4		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9896.3	.05	9985.8	.045	10025.1	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.8	10025.1	221.16	216.34	209.79	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9926.13	9941.05	0.93	0.93	5.02	0.05	0.19	0.99
9941.05	9955.97	36.14	13.02	14.96	1.82	0.87	2.78
9955.97	9970.88	57.42	17.17	14.92	2.89	1.15	3.34
9970.88	9985.80	77.49	20.60	14.99	3.89	1.38	3.76
LB 9985.80	9993.66	172.01	24.20	8.24	8.64	3.08	7.11
9993.66	10001.52	399.18	39.64	8.01	20.06	5.04	10.07
10001.52	10009.38	418.55	40.49	7.86	21.03	5.15	10.34
10009.38	10017.24	323.31	35.01	8.05	16.25	4.46	9.23
10017.24	RB 10025.10	129.97	20.30	8.08	6.53	2.58	6.40
10025.10	10039.64	110.09	24.54	14.54	5.53	1.69	4.49
10039.64	10054.18	122.21	26.13	14.54	6.14	1.80	4.68
10054.18	10068.72	131.76	27.38	14.60	6.62	1.88	4.81
10068.72	10083.26	10.95	4.26	5.83	0.55	0.76	2.57

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9970.88	9985.80	90.06	20.61	12.68	4.53	1.91	4.37
LB 9985.80	9993.66	213.73	27.89	8.24	10.74	3.55	7.66
9993.66	10001.52	454.14	43.33	8.01	22.82	5.51	10.48
10001.52	10009.38	474.78	44.18	7.86	23.86	5.62	10.75
10009.38	10017.24	374.75	38.70	8.05	18.83	4.92	9.68
10017.24	RB 10025.10	168.40	23.98	8.08	8.46	3.05	7.02
10025.10	10039.64	163.63	31.36	14.54	8.22	2.16	5.22
10039.64	10054.18	50.51	11.96	7.61	2.54	2.23	4.22

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.520

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9889.2	1577.1	9900.8	1573.3	9909	1570.7	9915.4	1568.5	9951.9	1567.8
9979.1	1567.3	9979.2	1567.3	9987.7	1565.4	9996.4	1562.9	9996.6	1562.8
9998.4	1562.8	10007.8	1563	10016.8	1565.1	10026.1	1566.9	10026.2	1566.9
10027.7	1566.9	10030.8	1567	10034.3	1567.1	10036.5	1567.2	10040.9	1567.1
10061.2	1566.4	10064.9	1566.2	10070.4	1565.1	10075.8	1564.1	10082.4	1567.4
10099.2	1574	10113	1579.3						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

9889.2 .065 9979.2 .05 10026.2 .065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.2	10026.2		76.16	58.86	41.79	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9904.20	9919.20	4.65	4.01	6.21	0.23	0.66	1.16
9919.20	9934.20	23.29	15.00	15.00	1.17	1.00	1.55
9934.20	9949.20	35.50	19.31	15.00	1.78	1.29	1.84
9949.20	9964.20	49.47	23.57	15.00	2.49	1.57	2.10
9964.20	9979.20	64.78	27.70	15.00	3.26	1.85	2.34
LB 9979.20	9988.60	118.64	28.54	9.65	5.96	3.04	4.16
9988.60	9998.00	314.29	51.41	9.74	15.79	5.47	6.11
9998.00	10007.40	417.23	60.08	9.40	20.97	6.39	6.94
10007.40	10016.80	298.18	49.61	9.64	14.98	5.28	6.01
10016.80	RB 10026.20	135.16	30.77	9.57	6.79	3.27	4.39
10026.20	10043.56	102.16	38.63	17.37	5.13	2.23	2.64
10043.56	10060.92	130.20	44.68	17.37	6.54	2.57	2.91
10060.92	10078.28	260.05	68.43	17.86	13.07	3.94	3.80
10078.28	10095.64	36.41	16.52	9.76	1.83	1.85	2.20

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9964.20	9979.20	58.52	23.18	11.64	2.94	2.52	2.52
LB 9979.20	9988.60	160.49	34.37	9.65	8.06	3.66	4.67
9988.60	9998.00	373.11	57.23	9.74	18.75	6.09	6.52
9998.00	10007.40	483.26	65.90	9.40	24.28	7.01	7.33
10007.40	10016.80	356.17	55.43	9.64	17.90	5.90	6.43
10016.80	RB 10026.20	179.12	36.59	9.57	9.00	3.89	4.89
10026.20	10043.56	155.59	49.38	17.37	7.82	2.84	3.15
10043.56	10060.92	188.64	55.44	17.37	9.48	3.19	3.40
10060.92	10078.28	35.10	14.68	7.81	1.76	3.60	2.39

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.509

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9859.2	1580.5	9876	1575.2	9900.3	1567.5	9925.7	1567.4	9929.7	1567.4
9941.3	1567.3	9943.1	1567.3	9945.4	1567.2	9949.4	1567.2	9951.4	1567.2
9958.2	1567.3	9976.4	1567.3	9976.5	1567.3	9983.1	1565.9	9995	1563.3
9997.9	1562.5	9998.5	1562.4	10001.9	1562.2	10007.6	1562	10012.7	1562.9
10021.9	1564.5	10025.8	1565	10037.5	1566.6	10054.8	1566.3	10060.4	1566.1
10066.1	1564.6	10070.3	1563.2	10070.3	1563.1	10070.4	1563.1	10074.7	1565.2
10075.2	1565.4	10075.4	1565.4	10087.1	1566.9	10092.7	1568.8	10097.8	1570
10112.7	1577.7	10114.7	1578.7						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9859.2	.065	9976.5	.05	10037.5	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.5	10037.5		104.94	63.79	34.34	.6	.8

Ineffective Flow num= 1

Sta L	Sta R	Elev
9859.2	9976.5	1575

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9878.75	9898.30	0.00	1.42	3.14	0.00	0.47	0.00
9898.30	9917.85	0.00	30.92	19.65	0.00	1.58	0.00
9917.85	9937.40	0.00	33.04	19.55	0.00	1.69	0.00
9937.40	9956.95	0.00	35.84	19.55	0.00	1.83	0.00
9956.95	9976.50	0.00	34.87	19.55	0.00	1.78	0.00
LB 9976.50	9988.70	135.89	37.64	12.48	6.83	3.09	3.61
9988.70	10000.90	384.34	70.22	12.47	19.31	5.76	5.47
10000.90	10013.10	512.22	82.94	12.29	25.74	6.80	6.18
10013.10	10025.30	313.40	61.91	12.36	15.75	5.07	5.06
10025.30	RB 10037.50	154.71	40.47	12.31	7.77	3.32	3.82
10037.50	10052.94	102.36	40.41	15.44	5.14	2.62	2.53
10052.94	10068.38	162.00	53.66	15.76	8.14	3.48	3.02
10068.38	10083.82	199.84	61.59	16.24	10.04	3.99	3.24
10083.82	10099.26	25.24	14.92	10.46	1.27	1.48	1.69

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9976.50	9988.70	162.98	45.57	14.91	8.19	3.73	3.58
9988.70	10000.90	451.17	78.14	12.47	22.67	6.41	5.77
10000.90	10013.10	585.77	90.86	12.29	29.44	7.45	6.45
10013.10	10025.30	376.28	69.83	12.36	18.91	5.72	5.39
10025.30	RB 10037.50	204.73	48.40	12.31	10.29	3.97	4.23
10037.50	10052.94	150.56	50.44	15.44	7.57	3.27	2.99
10052.94	10068.38	58.52	24.69	10.68	2.94	3.50	2.37

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.497

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9969	1574.2	9975.8	1573.6	9982.7	1573.4	9983.5	1573.3	9985	1571.4
9990.6	1563.8	9992.5	1561.2	9997.9	1561.2	10002.3	1561.3	10010.5	1562.4
10020	1564.6	10022.4	1565.3	10023.8	1565.3	10047.8	1566.4	10051.2	1566.6
10052.2	1566.1	10060.4	1562.4	10061.9	1563	10067.6	1565.3	10071.3	1566
10084.6	1568.6	10086	1568.8	10086.5	1568.9	10087.2	1569.1	10098.7	1571.5
10105.6	1575.1								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9969	.065	9990.6	.05	10022.4	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9990.6	10022.4	38.64	55.48	105.72	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9983.40	9990.60	14.09	5.31	4.71	0.71	1.90	2.65
LB 9990.60	9996.96	345.31	38.21	7.68	17.35	6.01	9.04
9996.96	10003.32	427.26	40.28	6.37	21.47	6.33	10.61
10003.32	10009.68	359.95	36.45	6.42	18.09	5.73	9.87
10009.68	10016.04	250.94	29.54	6.51	12.61	4.64	8.50
10016.04	RB 10022.40	130.65	20.03	6.57	6.57	3.15	6.52
10022.40	10034.29	91.04	24.76	11.90	4.58	2.08	3.68
10034.29	10046.17	55.15	18.33	11.90	2.77	1.54	3.01
10046.17	10058.06	80.26	23.48	12.58	4.03	1.98	3.42
10058.06	10069.94	216.56	42.77	12.72	10.88	3.60	5.06
10069.94	10081.83	18.78	8.85	9.70	0.94	0.93	2.12

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9983.40	9990.60	15.83	5.22	4.68	0.80	1.88	3.03
LB 9990.60	9996.96	392.92	38.02	7.68	19.74	5.98	10.33
9996.96	10003.32	486.37	40.10	6.37	24.44	6.30	12.13
10003.32	10009.68	409.41	36.26	6.42	20.57	5.70	11.29
10009.68	10016.04	284.85	29.35	6.51	14.31	4.61	9.71
10016.04	RB 10022.40	147.55	19.84	6.57	7.41	3.12	7.44
10022.40	10034.29	109.07	24.41	11.90	5.48	2.05	4.47
10034.29	10046.17	65.52	17.98	11.90	3.29	1.51	3.64
10046.17	10058.06	78.47	22.89	16.60	3.94	1.94	3.43

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.487

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9945	1574.8	9948.6	1574.3	9973.2	1565.1	9978.5	1562.4	9981.9	1562.3
9998	1561.1	10005.7	1560.4	10008	1560.2	10012.8	1560.1	10017.5	1561
10023.9	1563.5	10024.3	1563.6	10025.5	1564	10025.6	1564	10034.5	1565.5

```
 10037.5  1566.1 10040.8  1566.8 10043.9  1566.7 10047.5  1566.6 10058.9  1566.6
   10072  1566.4 10079.7  1566.3   10097  1567.2 10102.4  1567.5   10105  1567.5
 10107.4  1574.4   10111  1579.4 10111.8  1579.3 10112.6  1581.2 10112.9  1581.5
 10115.4    1583 10117.1  1584.1 10117.3  1584.3 10119.7  1586.1 10120.7  1586.2
 10124.6  1587.3 10127.5    1588   10129  1588.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9945    .065  9978.5     .05 10025.6    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9978.5 10025.6            114.49  139.74  166.73             .6       .8
Ineffective Flow     num=       1
   Sta L   Sta R    Elev
 10040.8   10129    1575
```

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9956.17	9967.33	0.00	0.01	0.26	0.00	0.05	0.18
9967.33	9978.50	66.52	26.23	12.21	3.34	2.35	2.54
LB 9978.50	9987.92	292.14	49.07	9.44	14.68	5.21	5.95
9987.92	9997.34	357.66	55.43	9.45	17.97	5.88	6.45
9997.34	10006.76	438.51	62.67	9.46	22.04	6.65	7.00
10006.76	10016.18	490.32	67.09	9.49	24.64	7.12	7.31
10016.18	RB 10025.60	267.57	47.63	9.99	13.45	5.06	5.62
10025.60	10040.80	77.27	31.28	15.46	3.88	2.06	2.47
10040.80	10055.50	0.00	10.89	14.70	0.00	0.74	0.00
10055.50	10070.20	0.00	12.51	14.70	0.00	0.85	0.00
10070.20	10084.90	0.00	14.65	14.71	0.00	1.00	0.00
10084.90	10099.60	0.00	6.33	14.72	0.00	0.43	0.00
10099.60	10114.30	0.00	0.01	0.72	0.00	0.02	0.00

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9978.50	9987.92	253.70	48.95	14.41	12.75	5.20	5.18
9987.92	9997.34	412.01	55.31	9.45	20.70	5.87	7.45
9997.34	10006.76	505.35	62.55	9.46	25.39	6.64	8.08
10006.76	10016.18	565.18	66.97	9.49	28.40	7.11	8.44
10016.18	RB 10025.60	253.77	47.51	13.36	12.75	5.04	5.34

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

```
CROSS SECTION          RIVER: Unnamed Wash 3
REACH: 1                  RS: 3.460

INPUT
Description:
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9966.9  1576.5  9967.1  1576.5  9976.2  1576.2  9985.1  1566.5    9987  1564.5
  9992.2  1559.1  9996.9  1559.5 10004.8  1559.9 10017.5  1560.8 10018.2  1560.9
 10018.6  1560.9 10029.8  1561.5 10035.4  1564.7   10048  1571.9 10050.5  1573.3
 10051.8  1573.5 10054.5  1573.6 10071.6  1574.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9966.9     .05    9987     .04 10035.4     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          9987 10035.4            172.73  177.76  178.28             .1       .3
```

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9976.95	9987.00	0.09	0.10	0.63	0.00	0.23	0.94
LB 9987.00	9996.68	374.49	41.77	11.99	18.82	4.31	8.97
9996.68	10006.36	592.27	50.51	9.70	29.76	5.22	11.73
10006.36	10016.04	479.80	44.53	9.70	24.11	4.60	10.78
10016.04	10025.72	370.73	38.14	9.70	18.63	3.94	9.72
10025.72	RB 10035.40	172.58	24.91	10.54	8.67	2.57	6.93
10035.40	10053.50	0.04	0.06	0.51	0.00	0.13	0.74

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for

additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9976.95	9987.00	0.10	0.10	0.63	0.00	0.24	0.95
LB 9987.00	9996.68	374.48	41.84	11.99	18.82	4.32	8.95
9996.68	10006.36	591.93	50.58	9.70	29.75	5.23	11.70
10006.36	10016.04	479.69	44.60	9.70	24.11	4.61	10.75
10016.04	10025.72	370.83	38.22	9.70	18.63	3.95	9.70
10025.72	RB 10035.40	172.94	24.99	10.54	8.69	2.58	6.92
10035.40	10053.50	0.05	0.06	0.52	0.00	0.14	0.77

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.426

INPUT
Description:
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9942.7	1567.6	9943.1	1567.5	9963.8	1562.8	9976.5	1560.1	9988.5	1558.6
9993.7	1558.5	9999.7	1558.4	10007.6	1558.3	10013	1559.4	10021.5	1561.1
10031.4	1562.8	10035.5	1563.3	10049.3	1564.9	10051.1	1565.2	10051.5	1565.2
10060.8	1567.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9942.7	.05	9963.8	.04	10035.5	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9963.8	10035.5	73.18	76.71	82.91	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.25	9963.80	4.15	2.59	4.90	0.21	0.54	1.60
LB 9963.80	9978.14	196.33	37.30	14.64	9.87	2.60	5.26
9978.14	9992.48	555.82	69.23	14.42	27.93	4.83	8.03
9992.48	10006.82	688.46	78.54	14.34	34.60	5.48	8.77
10006.82	10021.16	452.03	61.48	14.61	22.72	4.29	7.35
10021.16	RB 10035.50	91.63	23.54	14.52	4.60	1.64	3.89
10035.50	10048.15	1.58	1.48	5.08	0.08	0.29	1.07

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.25	9963.80	8.76	4.71	5.34	0.44	0.99	1.86
LB 9963.80	9978.14	214.38	43.65	14.64	10.77	3.04	4.91
9978.14	9992.48	540.56	75.58	14.42	27.16	5.27	7.15
9992.48	10006.82	658.49	84.89	14.34	33.09	5.92	7.76
10006.82	10021.16	447.42	67.83	14.61	22.48	4.73	6.60
10021.16	RB 10035.50	114.64	29.89	14.52	5.76	2.08	3.84
10035.50	10048.15	5.76	3.71	5.52	0.29	0.74	1.55

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.412

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9894.9	1565.8	9895.8	1565.8	9901.6	1565.7	9911.9	1565.4	9913.8	1565.3
9917.2	1564.7	9937.2	1561.4	9945.3	1561.2	9959.4	1560.8	9968.5	1560.5
9978.3	1559.3	9984.2	1558.6	9988.6	1558.3	10002.2	1557.8	10012	1560
10017.8	1561.2	10021.3	1561.2	10027.2	1561.7	10032.7	1563.2	10036.6	1564.5
10038.4	1565.7	10047.2	1569.4						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9894.9	.06	9968.5	.045	10017.8	.06

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

9968.5 10017.8	207.83	223.65	246	.3	.5	

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9924.34	9939.06	17.03	7.08	9.53	0.86	0.75	2.40
9939.06	9953.78	83.29	21.85	14.73	4.19	1.48	3.81
9953.78	9968.50	126.77	28.12	14.73	6.37	1.91	4.51
LB 9968.50	9978.36	211.48	27.13	9.93	10.63	2.75	7.79
9978.36	9988.22	378.55	38.44	9.91	19.02	3.90	9.85
9988.22	9998.08	484.90	44.52	9.87	24.37	4.51	10.89
9998.08	10007.94	467.38	43.79	10.01	23.49	4.44	10.67
10007.94	RB 10017.80	176.40	24.48	10.08	8.86	2.48	7.21
10017.80	10027.60	42.17	12.49	9.84	2.12	1.27	3.38
10027.60	10037.40	2.03	1.29	3.19	0.10	0.42	1.57

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.78	9968.50	126.94	26.02	15.23	6.38	1.93	4.88
LB 9968.50	9978.36	231.23	27.12	9.93	11.62	2.75	8.53
9978.36	9988.22	413.98	38.43	9.91	20.80	3.90	10.77
9988.22	9998.08	530.32	44.51	9.87	26.65	4.51	11.92
9998.08	10007.94	511.15	43.78	10.01	25.69	4.44	11.68
10007.94	RB 10017.80	176.37	24.47	11.53	8.86	2.48	7.21

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.370

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9832.9	1567.3	9839.6	1563.7	9850.5	1559	9853.5	1558.6	9859.2	1557.7
9862.3	1557.1	9863.6	1556.8	9870.4	1557.7	9873.6	1558.2	9880.4	1558.3
9885.8	1558.5	9892.8	1558.7	9898	1558.7	9930	1559.1	9935.1	1559.3
9937.8	1559.3	9940.6	1559.3	9940.7	1559.3	9950.8	1558.3	9962.1	1557.3
9966.1	1557	9977.8	1556	9981.9	1555.3	10002.7	1554.7	10013.7	1554.2
10019.8	1557.9	10030.3	1564.2	10036.4	1567.3	10057.4	1577.3	10058.4	1577.7
10061	1577.7	10062	1577.7						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9832.9	.06	9940.6	.045	10019.8	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940.6	10019.8	106.44	99.43	88.46	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9832.90	9854.44	4.22	2.91	5.04	0.21	0.59	1.45
9854.44	9875.98	116.39	38.21	21.79	5.85	1.77	3.05
9875.98	9897.52	39.06	19.76	21.55	1.96	0.92	1.98
9897.52	9919.06	18.84	12.75	21.54	0.95	0.59	1.48
9919.06	9940.60	5.43	6.05	21.54	0.27	0.28	0.90
LB 9940.60	9956.44	39.20	14.01	15.91	1.97	0.88	2.80
9956.44	9972.28	191.40	36.26	15.90	9.62	2.29	5.28
9972.28	9988.12	433.16	59.23	15.92	21.77	3.74	7.31
9988.12	10003.96	598.08	71.75	15.85	30.05	4.53	8.34
10003.96	RB 10019.80	540.55	69.26	16.88	27.16	4.37	7.81
10019.80	10033.87	3.67	1.93	2.96	0.18	0.76	1.90

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9854.44	9875.98	90.93	30.05	18.01	4.57	1.88	3.03
9875.98	9897.52	38.67	19.33	21.55	1.94	0.90	2.00
9897.52	9919.06	18.28	12.33	21.54	0.92	0.57	1.48
9919.06	9940.60	4.94	5.62	21.54	0.25	0.26	0.88
LB 9940.60	9956.44	38.76	13.70	15.91	1.95	0.86	2.83
9956.44	9972.28	193.68	35.95	15.90	9.73	2.27	5.39
9972.28	9988.12	440.78	58.92	15.92	22.15	3.72	7.48
9988.12	10003.96	609.55	71.43	15.85	30.63	4.51	8.53
10003.96	RB 10019.80	550.77	68.94	16.88	27.68	4.35	7.99
10019.80	10033.87	3.64	1.88	2.92	0.18	0.75	1.94

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.351

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9913.2	1576.7	9914.6	1576	9919.1	1573.3	9940.9	1561	9945.7	1555.2
9953.1	1553.7	9953.9	1553.8	9957.8	1555.7	9959.6	1556.7	9968.1	1556.3
9969.4	1556.2	9973.5	1555.8	9980.2	1555.5	9985.1	1555.2	9985.2	1555.2
9989.9	1554.5	9998.2	1553.2	9999.9	1553.2	10001.9	1553.2	10013.1	1553.6
10022.7	1553.5	10025.7	1553.8	10038.7	1555.1	10038.8	1555.1	10059.2	1561.3
10062.6	1561.9	10077.5	1563.2						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9913.2	.06	9985.2	.045	10038.7	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.2	10038.7	191.05	166.22	65.92	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9942.00	9956.40	174.32	56.71	16.20	8.76	4.07	3.07
9956.40	9970.80	105.10	40.42	14.84	5.28	2.81	2.60
9970.80	9985.20	154.87	50.44	14.43	7.78	3.50	3.07
LB 9985.20	9995.90	250.13	50.40	10.83	12.57	4.71	4.96
9995.90	10006.60	358.47	62.32	10.73	18.01	5.82	5.75
10006.60	10017.30	334.18	59.69	10.70	16.79	5.58	5.60
10017.30	10028.00	321.42	58.37	10.73	16.15	5.45	5.51
10028.00	RB 10038.70	235.90	48.53	10.75	11.85	4.54	4.86
10038.70	10051.63	55.58	26.71	13.51	2.79	2.06	2.08
10051.63	10064.57	0.00	0.02	0.34	0.00	0.05	0.17

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9942.00	9956.40	174.32	56.59	16.19	8.76	4.07	3.08
9956.40	9970.80	104.88	40.29	14.84	5.27	2.80	2.60
9970.80	9985.20	154.70	50.31	14.43	7.77	3.49	3.07
LB 9985.20	9995.90	250.14	50.30	10.83	12.57	4.70	4.97
9995.90	10006.60	358.70	62.23	10.73	18.03	5.82	5.76
10006.60	10017.30	334.36	59.60	10.70	16.80	5.57	5.61
10017.30	10028.00	321.57	58.27	10.73	16.16	5.45	5.52
10028.00	RB 10038.70	235.88	48.43	10.75	11.85	4.53	4.87
10038.70	10051.63	55.44	26.59	13.51	2.79	2.06	2.08
10051.63	10064.57	0.00	0.01	0.31	0.00	0.05	0.16

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.319

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9970.6	1587.9	9986.4	1566.5	9988.1	1564.2	9990.5	1556.8	9990.6	1556.6
9993.3	1550.8	10001.3	1551.4	10012.3	1552.1	10028.2	1554.3	10034.6	1555.3
10036.8	1555.3	10039.5	1555.4	10041.4	1555.5	10045.6	1555.6	10048.6	1555.8
10053.1	1555.9	10057.6	1555.9	10080.4	1556.6	10085.1	1556.8	10098.1	1558.9
10118.8	1562.5								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9970.6	.06	9990.6	.045	10034.6	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9990.6	10034.6	56.28	54.85	46.62	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta	Right Sta	Flow	Area	W.P.	% Conv.	Hydr D.	Velocity

(ft)	(ft)	(cfs)	(sq ft)	(ft)		(ft)	(ft/s)
9980.60	9990.60	0.35	0.46	1.69	0.02	0.84	0.75
LB 9990.60	9999.40	348.79	55.81	12.51	17.53	6.34	6.25
9999.40	10008.20	474.71	58.38	8.82	23.86	6.63	8.13
10008.20	10017.00	398.10	52.61	8.85	20.01	5.98	7.57
10017.00	10025.80	278.52	42.52	8.88	14.00	4.83	6.55
10025.80	RB 10034.60	168.18	31.44	8.90	8.45	3.57	5.35
10034.60	10051.44	142.01	44.50	16.85	7.14	2.64	3.19
10051.44	10068.28	103.75	36.86	16.85	5.21	2.19	2.81
10068.28	10085.12	67.86	28.57	16.85	3.41	1.70	2.38
10085.12	10101.96	7.73	5.96	8.70	0.39	0.69	1.30

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9980.60	9990.60	0.34	0.45	1.66	0.02	0.83	0.75
LB 9990.60	9999.40	349.75	55.60	12.51	17.58	6.32	6.29
9999.40	10008.20	476.16	58.16	8.82	23.93	6.61	8.19
10008.20	10017.00	399.04	52.40	8.85	20.05	5.95	7.62
10017.00	10025.80	278.72	42.30	8.88	14.01	4.81	6.59
10025.80	RB 10034.60	167.79	31.22	8.90	8.43	3.55	5.37
10034.60	10051.44	141.13	44.09	16.85	7.09	2.62	3.20
10051.44	10068.28	102.78	36.44	16.85	5.16	2.16	2.82
10068.28	10085.12	66.86	28.16	16.85	3.36	1.67	2.37
10085.12	10101.96	7.44	5.75	8.55	0.37	0.68	1.29

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.309

INPUT
Description:
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9967.8	1568.1	9972.1	1565	9973.1	1564.6	9983.6	1557.4	9985.7	1556.1
9985.8	1556.1	9987.5	1552.1	9992.7	1551.4	10001.8	1551.5	10011.7	1551.2
10023.4	1554	10029.9	1555.7	10030	1555.7	10056.5	1556.6	10060.5	1556.7
10066.1	1557.7	10068.4	1558.2	10081.7	1560.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9967.8	.05	9985.7	.04	10030	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.7	10030	270.9	271.68	267.41	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9976.75	9985.70	0.17	0.15	0.82	0.01	0.22	1.13
LB 9985.70	9994.56	356.34	38.57	11.55	17.91	4.35	9.24
9994.56	10003.42	547.99	44.91	8.86	27.54	5.07	12.20
10003.42	10012.28	572.91	46.16	8.88	28.79	5.21	12.41
10012.28	10021.14	382.82	36.61	9.11	19.24	4.13	10.46
10021.14	RB 10030.00	109.98	17.35	9.14	5.53	1.96	6.34
10030.00	10040.34	15.38	6.78	10.35	0.77	0.66	2.27
10040.34	10050.68	4.29	3.15	10.35	0.22	0.30	1.36
10050.68	10061.02	0.12	0.25	3.81	0.01	0.06	0.48

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9976.75	9985.70	0.25	0.20	0.90	0.01	0.29	1.25
LB 9985.70	9994.56	355.43	39.24	11.55	17.86	4.43	9.06
9994.56	10003.42	544.39	45.57	8.86	27.36	5.14	11.95
10003.42	10012.28	568.78	46.83	8.88	28.58	5.29	12.15
10012.28	10021.14	382.41	37.28	9.11	19.22	4.21	10.26
10021.14	RB 10030.00	113.52	18.02	9.14	5.70	2.03	6.30
10030.00	10040.34	18.54	7.56	10.35	0.93	0.73	2.45
10040.34	10050.68	6.23	3.93	10.35	0.31	0.38	1.59

10050.68	10061.02	0.43	0.53	3.89	0.02	0.14	0.80

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.257

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9874.7	1568	9906.7	1551.6	9918.6	1551.8	9933.2	1552.1	9935.4	1552.2
9936.9	1552.2	9973.2	1550.4	9974	1550.3	9974.3	1550.3	9974.4	1550.3
9975.5	1550.1	9994	1547.9	9998.4	1547.8	10006	1547.5	10016.4	1550.5
10025.6	1553.2	10038.4	1557.1	10042.4	1558.4	10080.6	1569.2	10080.9	1569.2
10081.1	1569.2	10081.5	1569.2						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9874.7	.05	9974.4	.04	10016.4	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.4	10016.4	495.12	470.73	450.92	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9894.64	9914.58	35.99	13.02	11.07	1.81	1.21	2.76
9914.58	9934.52	60.74	22.55	19.95	3.05	1.13	2.69
9934.52	9954.46	70.78	24.73	19.96	3.56	1.24	2.86
9954.46	9974.40	187.23	44.33	19.97	9.41	2.22	4.22
LB 9974.40	9982.80	198.13	27.89	8.47	9.96	3.32	7.10
9982.80	9991.20	307.89	36.31	8.46	15.47	4.32	8.48
9991.20	9999.60	412.61	43.21	8.42	20.73	5.14	9.55
9999.60	10008.00	443.79	45.28	8.49	22.30	5.39	9.80
10008.00	RB 10016.40	239.47	31.65	8.74	12.03	3.77	7.57
10016.40	10048.95	33.36	11.13	9.08	1.68	1.28	3.00

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9954.46	9974.40	57.92	14.27	7.53	2.91	3.24	4.06
LB 9974.40	9982.80	263.97	33.16	8.47	13.27	3.95	7.96
9982.80	9991.20	385.32	41.58	8.46	19.36	4.95	9.27
9991.20	9999.60	499.10	48.48	8.42	25.08	5.77	10.29
9999.60	10008.00	532.38	50.55	8.49	26.75	6.02	10.53
10008.00	RB 10016.40	251.31	36.91	11.93	12.63	4.39	6.81

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.168

INPUT
Description: 100-year, 6-hour Peak Discharge of 2200 cfs from HEC-1 model at station C302.
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9919.8	1569	9920.8	1568.8	9931.4	1562.6	9937.9	1559.7	9974.6	1548
9974.7	1547.9	9979.9	1546.4	9983.2	1545.9	9988	1544.9	9990.2	1544.4
9991.2	1544.1	9996.7	1544.3	10011.4	1544.2	10015.7	1544.9	10028.8	1546.7
10038.6	1547.1	10040.8	1547.2	10041.6	1547.2	10047.8	1547.4	10055.3	1547.4
10066.3	1547.2	10075.2	1547	10076.5	1546.8	10077.1	1547	10079.3	1547.2
10082.9	1546.9	10085.1	1546.8	10087.8	1546.5	10097.6	1546.3	10110	1546.3
10110.2	1546.3	10110.6	1546.3	10116.7	1545.4	10121.3	1546	10127.6	1546.2
10131.4	1546.4	10134.1	1547	10139.1	1548.3	10140.3	1548.7	10142	1548.8
10144.1	1549.9	10149.3	1551.3	10157.6	1553.9	10162.6	1556.2	10169	1557.9
10172.7	1558.8	10176.5	1559.6	10181.9	1561.5				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9919.8	.06	9974.6	.045	10028.8	.06

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

9974.6 10028.8 139.5 129.56 97.8 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9947.20	9974.60	0.31	0.30	1.45	0.01	0.22	1.01
LB 9974.60	9985.44	111.80	20.53	11.18	5.04	1.89	5.45
9985.44	9996.28	379.87	42.49	11.00	17.11	3.92	8.94
9996.28	10007.12	426.09	45.26	10.84	19.19	4.18	9.41
10007.12	10017.96	381.39	42.47	10.92	17.18	3.92	8.98
10017.96	RB 10028.80	178.38	26.94	10.94	8.03	2.49	6.62
10028.80	10044.11	75.44	21.94	15.32	3.40	1.43	3.44
10044.11	10059.42	46.02	16.31	15.31	2.07	1.07	2.82
10059.42	10074.73	61.27	19.36	15.31	2.76	1.26	3.16
10074.73	10090.04	89.06	24.29	15.40	4.01	1.59	3.67
10090.04	10105.35	142.94	32.19	15.31	6.44	2.10	4.44
10105.35	10120.66	188.18	38.06	15.41	8.48	2.49	4.94
10120.66	10135.97	136.38	31.41	15.45	6.14	2.05	4.34
10135.97	10151.28	2.87	1.74	3.68	0.13	0.49	1.64

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9947.20	9974.60	1.23	0.74	1.76	0.06	0.53	1.67
LB 9974.60	9985.44	152.71	23.93	11.18	6.88	2.21	6.38
9985.44	9996.28	456.96	45.89	11.00	20.58	4.23	9.96
9996.28	10007.12	508.69	48.66	10.84	22.91	4.49	10.45
10007.12	10017.96	458.82	45.87	10.92	20.67	4.23	10.00
10017.96	RB 10028.80	230.07	30.34	10.94	10.36	2.80	7.58
10028.80	10044.11	115.59	26.74	15.32	5.21	1.75	4.32
10044.11	10059.42	77.94	21.11	15.31	3.51	1.38	3.69
10059.42	10074.73	97.65	24.16	15.31	4.40	1.58	4.04
10074.73	10090.04	120.34	29.00	17.66	5.42	1.90	4.15

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.144

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9969.3	1557.9	9974.5	1554.3	9981.3	1547.9	9983.2	1546.1	9984.3	1545.1
9985.2	1544	9988.5	1541.7	9994.6	1541.8	10002	1541.8	10006.5	1542.6
10012.7	1543.7	10018.3	1544.8	10020.2	1544.5	10035.4	1544.5	10037.7	1544.7
10044.9	1544.2	10047.6	1544	10057.8	1546.6	10057.9	1546.7	10058	1546.7
10058.1	1546.7	10059.1	1546.6	10071.4	1546.1	10076.1	1545	10077.8	1544.7
10082.5	1545.3	10086.2	1545.8	10094	1546.1	10109.4	1546.7	10116.5	1546.5
10132.4	1545.8	10133.8	1545.9	10135.3	1545.8	10141.2	1545	10146.5	1544.4
10149.2	1544.9	10150.9	1545.3	10158.9	1545	10164.1	1545	10171.5	1548
10178.2	1550.3	10182.9	1551.7	10201.5	1557.9				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9969.3	.06	9983.2	.045	10018.3	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.2	10018.3	150.57	159	103.09	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9976.25	9983.20	1.30	0.99	1.99	0.06	0.68	1.32
LB 9983.20	9990.22	185.94	29.80	8.65	8.38	4.25	6.24
9990.22	9997.24	348.07	39.93	7.02	15.68	5.69	8.72
9997.24	10004.26	338.07	39.32	7.05	15.23	5.60	8.60
10004.26	10011.28	245.40	32.58	7.13	11.05	4.64	7.53
10011.28	RB 10018.30	142.46	23.53	7.15	6.42	3.35	6.05
10018.30	10036.62	216.78	53.99	18.35	9.76	2.95	4.02
10036.62	10054.94	204.61	52.41	18.58	9.22	2.86	3.90
10054.94	10073.26	45.52	21.24	18.52	2.05	1.16	2.14
10073.26	10091.58	117.94	37.59	18.50	5.31	2.05	3.14
10091.58	10109.90	42.21	20.22	18.33	1.90	1.10	2.09
10109.90	10128.22	41.81	20.10	18.33	1.88	1.10	2.08
10128.22	10146.54	121.67	38.24	18.42	5.48	2.09	3.18
10146.54	10164.86	157.00	44.61	18.48	7.07	2.44	3.52
10164.86	10183.18	11.23	5.74	5.74	0.51	1.08	1.96

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross

section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9976.25	9983.20	1.44	0.93	1.93	0.06	0.66	1.55
LB 9983.20	9990.22	218.32	29.53	8.65	9.83	4.21	7.39
9990.22	9997.24	410.26	39.66	7.02	18.48	5.65	10.34
9997.24	10004.26	398.40	39.05	7.05	17.95	5.56	10.20
10004.26	10011.28	288.51	32.31	7.13	13.00	4.60	8.93
10011.28	RB 10018.30	166.59	23.26	7.15	7.50	3.31	7.16
10018.30	10036.62	245.28	53.28	18.35	11.05	2.91	4.60
10036.62	10054.94	231.36	51.71	18.58	10.42	2.82	4.47
10054.94	10073.26	49.77	20.54	18.52	2.24	1.12	2.42
10073.26	10091.58	132.17	36.89	18.50	5.95	2.01	3.58
10091.58	10109.90	46.02	19.52	18.33	2.07	1.07	2.36
10109.90	10128.22	31.88	14.98	16.41	1.44	0.99	2.13

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.114

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9919.5	1558.3	9925.1	1556.2	9953.8	1545.7	9958.2	1543.5	9965.5	1542.9
9993.3	1540.5	9997.3	1540.2	10001.4	1540	10002.8	1540	10006.3	1540
10007.2	1540.1	10009.4	1540.9	10014.3	1542.3	10016.9	1543	10022.7	1544.5
10022.7	1544.6	10024.6	1544.6	10025	1544.7	10026.1	1544.7	10035	1544.3
10055.2	1543.8	10056.5	1544	10057.5	1544	10060.7	1544.8	10062	1545.1
10073.4	1549.9	10082.2	1552.5	10089.7	1556.4	10091.3	1557.3	10094.5	1558.8
10099.3	1560.5								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9919.5	.05	9958.2	.04	10022.7	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9958.2	10022.7	240.73	278.7	300.45	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9938.85	9958.20	7.64	2.80	3.74	0.34	0.84	2.73
LB 9958.20	9971.10	188.41	28.49	12.95	8.49	2.21	6.61
9971.10	9984.00	370.44	42.74	12.95	16.69	3.31	8.67
9984.00	9996.90	599.28	57.04	12.95	26.99	4.42	10.51
9996.90	10009.80	734.86	64.71	13.07	33.10	5.02	11.36
10009.80	RB 10022.70	207.20	30.64	13.46	9.33	2.37	6.76
10022.70	10038.02	26.55	10.56	15.34	1.20	0.69	2.51
10038.02	10053.34	61.22	17.42	15.32	2.76	1.14	3.51
10053.34	10068.66	24.41	8.11	9.00	1.10	0.92	3.01

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9938.85	9958.20	12.61	4.32	4.20	0.57	1.29	2.92
LB 9958.20	9971.10	224.05	34.34	12.95	10.09	2.66	6.53
9971.10	9984.00	399.60	48.59	12.95	18.00	3.77	8.22
9984.00	9996.90	614.29	62.89	12.95	27.67	4.87	9.77
9996.90	10009.80	739.48	70.55	13.07	33.31	5.47	10.48
10009.80	RB 10022.70	229.97	36.49	14.49	10.36	2.83	6.30

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.061

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

9849	1548.5	9857.1	1545.2	9868.6	1540.2	9878.6	1540.3	9880.6	1540.3
9889	1540.7	9900.9	1541.5	9905.7	1541.5	9913.9	1541.5	9935.6	1541.6
9948.9	1541.6	9949	1541.6	9969.2	1539.8	9969.5	1539.8	9970.5	1539.8
9979.9	1538.9	9994.7	1538.3	10005.6	1537.6	10015.2	1540.9	10015.7	1541.1
10015.9	1541.1	10017	1541.2	10033	1542.7	10052.2	1545.2	10074.9	1547
10076.5	1547.3	10080.4	1548.3						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9849	.065	9949	.05	10015.9	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9949	10015.9	67.94	99.79	103.3	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9849.00	9869.00	30.77	13.11	8.44	1.39	1.69	2.35
9869.00	9889.00	223.91	60.92	20.01	10.09	3.05	3.68
9889.00	9909.00	124.74	42.90	20.03	5.62	2.15	2.91
9909.00	9929.00	100.28	37.62	20.00	4.52	1.88	2.67
9929.00	9949.00	94.25	36.24	20.00	4.25	1.81	2.60
LB 9949.00	9962.38	130.57	32.16	13.43	5.88	2.40	4.06
9962.38	9975.76	250.32	47.51	13.43	11.28	3.55	5.27
9975.76	9989.14	382.34	61.22	13.41	17.22	4.58	6.25
9989.14	10002.52	474.45	69.67	13.40	21.37	5.21	6.81
10002.52	RB 10015.90	351.21	59.15	13.98	15.82	4.42	5.94
10015.90	10048.15	57.15	27.72	22.65	2.57	1.23	2.06

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9889.00	9909.00	53.04	17.97	11.06	2.39	2.00	2.95
9909.00	9929.00	131.90	39.35	20.00	5.94	1.97	3.35
9929.00	9949.00	124.32	37.97	20.00	5.60	1.90	3.27
LB 9949.00	9962.38	164.60	33.31	13.43	7.41	2.49	4.94
9962.38	9975.76	309.69	48.67	13.43	13.95	3.64	6.36
9975.76	9989.14	468.83	62.38	13.41	21.12	4.66	7.52
9989.14	10002.52	579.61	70.83	13.40	26.11	5.29	8.18
10002.52	RB 10015.90	388.00	60.31	16.37	17.48	4.51	6.43

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.042

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9833.9	1546.8	9841.9	1545.8	9859.4	1540.1	9861.7	1539.3	9864.2	1538.3
9867.2	1538.8	9876.3	1540.1	9898.3	1540.6	9898.7	1540.6	9898.8	1540.6
9912.6	1540.7	9916.9	1540.9	9926.4	1541.4	9926.5	1541.4	9945.2	1540.7
9970.2	1539.1	9973.7	1538.9	9983.2	1538.6	9991.9	1537.6	9997	1537
9998.9	1537	10008.8	1537.1	10011.3	1539.8	10012.3	1540.9	10013	1541.6
10013.1	1541.6	10021.7	1542.4	10047.7	1544.9	10056.4	1545.6	10057.2	1545.8
10060.9	1546.7	10064.8	1548.5						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9833.9	.065	9926.5	.05	10013.1	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9926.5	10013.1	56.38	140.45	173.46	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9833.90	9852.42	0.36	0.52	1.89	0.02	0.29	0.68
9852.42	9870.94	191.59	57.67	19.29	8.63	3.11	3.32
9870.94	9889.46	170.68	53.01	18.58	7.69	2.86	3.22
9889.46	9907.98	126.56	44.25	18.52	5.70	2.39	2.86
9907.98	9926.50	94.36	37.11	18.54	4.25	2.00	2.54
LB 9926.50	9943.82	100.24	32.59	17.33	4.52	1.88	3.08
9943.82	9961.14	185.63	47.20	17.35	8.36	2.73	3.93
9961.14	9978.46	323.46	65.85	17.35	14.57	3.80	4.91
9978.46	9995.78	486.46	84.23	17.41	21.91	4.86	5.78
9995.78	RB 10013.10	528.15	92.20	19.29	23.79	5.32	5.73
10013.10	10038.95	12.53	9.85	14.46	0.56	0.68	1.27

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9852.42	9870.94	4.86	3.53	4.77	0.22	3.75	1.38
9870.94	9889.46	185.87	54.09	18.58	8.37	2.92	3.44
9889.46	9907.98	138.74	45.34	18.52	6.25	2.45	3.06

9907.98	9926.50	104.24	38.20	18.54	4.70	2.06	2.73
LB 9926.50	9943.82	112.31	33.61	17.33	5.06	1.94	3.34
9943.82	9961.14	204.74	48.21	17.35	9.22	2.78	4.25
9961.14	9978.46	353.21	66.87	17.35	15.91	3.86	5.28
9978.46	9995.78	528.27	85.25	17.41	23.80	4.92	6.20
9995.78	RB 10013.10	572.56	93.21	19.29	25.79	5.38	6.14
10013.10	10038.95	15.23	10.70	14.52	0.69	0.74	1.42

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 3.015

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9824.1	1547.7	9844.1	1545.2	9845	1545	9846.3	1544.8	9852	1543
9866.1	1538	9867.5	1538.2	9876	1539.4	9894.6	1539.5	9896.9	1539.5
9911.7	1540.4	9915.8	1540.6	9922.8	1540.3	9927.1	1540.1	9936.8	1539.3
9950.2	1537.4	9950.4	1537.4	9950.8	1537.4	9967.2	1536.6	9969.1	1536.9
9976.2	1537.5	9979.3	1537.3	9992	1536	9995.4	1535.8	10001.3	1535.3
10008.9	1538.3	10011.2	1539.4	10011.2	1539.5	10013.5	1539.5	10021.3	1539.5
10027.5	1539.5	10029.5	1539.5	10032.8	1538.9	10043	1537.4	10049.7	1537.1
10054.4	1537.9	10056	1538	10057.7	1539.3	10062	1542.3	10064.7	1542.3
10068.8	1542.3	10073.8	1542.3	10075.3	1542.3	10086.6	1542.4	10088.6	1542.5
10089.5	1542.5	10108.3	1543	10111.7	1543.3	10122.2	1543.2	10127.1	1544.7
10136.5	1547.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9824.1	.065	9976.2	.05	10011.2	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.2	10011.2	135.02	167	183.72	.6	.8

Ineffective Flow num= 1

Sta L	Sta R	Elev
10011.2	10136.5	1546

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9839.31	9854.52	0.19	0.43	1.65	0.01	0.28	0.44
9854.52	9869.73	101.47	46.13	15.95	4.57	3.03	2.20
9869.73	9884.94	128.00	52.11	15.27	5.77	3.43	2.46
9884.94	9900.15	111.74	47.96	15.22	5.03	3.15	2.33
9900.15	9915.36	75.97	38.07	15.24	3.42	2.50	2.00
9915.36	9930.57	70.20	36.30	15.23	3.16	2.39	1.93
9930.57	9945.78	140.54	55.19	15.32	6.33	3.63	2.55
9945.78	9960.99	267.69	81.12	15.27	12.06	5.33	3.30
9960.99	9976.20	298.82	86.65	15.27	13.46	5.70	3.45
LB 9976.20	9983.20	172.75	37.97	7.03	7.78	5.42	4.55
9983.20	9990.20	210.75	42.81	7.04	9.49	6.12	4.92
9990.20	9997.20	249.03	47.27	7.02	11.22	6.75	5.27
9997.20	10004.20	260.35	49.13	7.23	11.73	7.02	5.30
10004.20	RB 10011.20	132.52	33.60	7.70	5.97	4.80	3.94
10011.20	10029.10	0.00	56.52	17.90	0.00	3.16	0.00
10029.10	10047.00	0.00	80.04	18.07	0.00	4.47	0.00
10047.00	10064.90	0.00	62.45	19.36	0.00	3.49	0.00
10064.90	10082.80	0.00	6.15	17.90	0.00	0.34	0.00
10082.80	10100.70	0.00	2.07	12.63	0.00	0.16	0.00

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9869.73	9884.94	115.73	51.16	19.12	5.21	3.42	2.26
9884.94	9900.15	121.70	48.13	15.22	5.48	3.16	2.53
9900.15	9915.36	82.87	38.24	15.24	3.73	2.51	2.17
9915.36	9930.57	76.61	36.48	15.23	3.45	2.40	2.10
9930.57	9945.78	152.95	55.36	15.32	6.89	3.64	2.76
9945.78	9960.99	290.84	81.29	15.27	13.10	5.34	3.58
9960.99	9976.20	324.59	86.82	15.27	14.62	5.71	3.74
LB 9976.20	9983.20	182.61	38.05	7.03	8.23	5.44	4.80
9983.20	9990.20	222.68	42.89	7.04	10.03	6.13	5.19
9990.20	9997.20	263.05	47.35	7.02	11.85	6.76	5.55
9997.20	10004.20	274.99	49.21	7.23	12.39	7.03	5.59
10004.20	RB 10011.20	111.38	33.68	10.87	5.02	4.81	3.31

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 2.984

INPUT
Description:
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9964.7	1548.1	9974.8	1540	9976	1538.7	9979.7	1536.2	9981	1535.9
9983.7	1535.5	9990.3	1534.3	9992.2	1534.3	9996.5	1534.3	10011.3	1534.6
10014.8	1534.6	10018.9	1534.7	10026.4	1538.5	10028.9	1539.8	10031	1543.7
10032.6	1546.3	10039.1	1558.8	10045.1	1564				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9964.7	.05	9976	.04	10026.4	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976	10026.4	366.88	356.38	343.69	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9970.35	9976.00	0.07	0.07	0.54	0.00	0.20	0.96
LB 9976.00	9986.08	236.80	28.26	10.95	10.67	2.80	8.38
9986.08	9996.16	575.10	46.69	10.15	25.91	4.63	12.32
9996.16	10006.24	591.27	47.35	10.08	26.63	4.70	12.49
10006.24	10016.32	553.68	45.52	10.08	24.94	4.52	12.16
10016.32	RB 10026.40	262.56	30.11	10.99	11.83	2.99	8.72
10026.40	10035.75	0.51	0.34	1.29	0.02	0.30	1.52

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9970.35	9976.00	0.10	0.09	0.60	0.00	0.26	1.05
LB 9976.00	9986.08	239.61	28.92	10.95	10.79	2.87	8.28
9986.08	9996.16	573.22	47.35	10.15	25.82	4.70	12.10
9996.16	10006.24	589.15	48.01	10.08	26.54	4.76	12.27
10006.24	10016.32	552.20	46.18	10.08	24.87	4.58	11.96
10016.32	RB 10026.40	265.05	30.77	10.99	11.94	3.05	8.61
10026.40	10035.75	0.67	0.41	1.35	0.03	0.36	1.63

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 2.916

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9965.2	1550.5	9971.1	1547.5	9973.5	1546.3	9981	1536.6	9981.9	1535.4
9982.8	1534.5	9985.3	1531.9	9986.1	1531.3	9987.8	1530.5	9995.2	1530.8
10004.4	1531.2	10011.6	1531.5	10014.3	1531.9	10021.3	1532.8	10025.8	1533.4
10026.1	1533.4	10032.3	1533.5	10039	1533.6	10048.8	1533.1	10052.6	1532.8
10057.9	1532.6	10093.3	1533.3	10109.2	1533.7	10117.5	1533.9	10121.2	1534
10135.5	1534.3	10138.7	1534.3	10140.1	1534.3	10141	1534.3	10153	1533.4
10154.6	1533.3	10155.2	1533.4	10156.9	1533.5	10166	1534.3	10168.2	1534.5
10171.2	1534.3	10172.2	1534.3	10177.9	1534.5	10194.4	1535.3	10198.4	1535.9
10209.9	1539.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9965.2	.05	9982.8	.04	10026.1	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.8	10026.1	343.88	351.81	322.51	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9974.00	9982.80	0.23	0.21	0.91	0.01	0.32	1.11
LB 9982.80	9991.46	244.79	31.61	10.15	11.03	3.65	7.74
9991.46	10000.12	359.14	37.35	8.67	16.18	4.31	9.62

10000.12	10008.78	308.96	34.12	8.67	13.92	3.94	9.05
10008.78	10017.44	238.27	29.26	8.72	10.73	3.38	8.14
10017.44	RB 10026.10	123.05	19.70	8.73	5.54	2.27	6.25
10026.10	10044.48	116.19	30.35	18.39	5.23	1.65	3.83
10044.48	10062.86	199.26	41.96	18.40	8.98	2.28	4.75
10062.86	10081.24	196.23	41.56	18.38	8.84	2.26	4.72
10081.24	10099.62	145.75	34.77	18.38	6.57	1.89	4.19
10099.62	10118.00	93.87	26.70	18.39	4.23	1.45	3.52
10118.00	10136.38	51.82	18.69	18.38	2.33	1.02	2.77
10136.38	10154.76	70.63	22.53	18.42	3.18	1.23	3.14
10154.76	10173.14	59.88	20.41	18.44	2.70	1.11	2.93
10173.14	10191.52	11.93	7.68	17.99	0.54	0.43	1.55

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9974.00	9982.80	1.07	0.73	1.72	0.05	1.13	1.48
LB 9982.80	9991.46	304.13	38.66	10.15	13.70	4.46	7.87
9991.46	10000.12	425.55	44.40	8.67	19.17	5.13	9.58
10000.12	10008.78	375.29	41.17	8.67	16.90	4.75	9.12
10008.78	10017.44	303.26	36.31	8.72	13.66	4.19	8.35
10017.44	RB 10026.10	181.99	26.75	8.73	8.20	3.09	6.80
10026.10	10044.48	214.58	45.31	18.39	9.67	2.47	4.74
10044.48	10062.86	313.69	56.92	18.40	14.13	3.10	5.51
10062.86	10081.24	100.45	22.75	10.26	4.52	3.19	4.42

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 2.850

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9882.7	1548.1	9885.2	1547.9	9888.3	1547.2	9891.3	1545.7	9892.1	1545.3
9912.9	1537.7	9934.2	1529.1	9944.8	1529.5	9946.6	1529.5	9950.8	1529.5
9974.7	1529.4	9975	1529.4	9978.5	1529	9984.6	1528.3	9987.1	1528.2
9994.6	1527.7	10008.3	1527	10010.8	1528.1	10015.3	1529.5	10021.7	1529.6
10023.3	1529.6	10030.8	1531.1	10052.6	1538	10065.2	1541.6	10069.8	1542.5
10079.5	1545.3	10083.7	1546.2	10084.6	1546.2				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9882.7	.05	9975	.04	10015.3	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975	10015.3	373.3	372.73	359.17	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9919.62	9938.08	103.44	27.55	13.04	4.66	2.23	3.75
9938.08	9956.54	273.80	56.80	18.46	12.33	3.08	4.82
9956.54	9975.00	275.74	57.03	18.46	12.42	3.09	4.83
LB 9975.00	9983.06	192.86	28.92	8.11	8.69	3.59	6.67
9983.06	9991.12	265.78	35.00	8.08	11.97	4.34	7.59
9991.12	9999.18	318.99	39.04	8.07	14.37	4.84	8.17
9999.18	10007.24	366.97	42.45	8.07	16.53	5.27	8.64
10007.24	RB 10015.30	257.37	35.04	8.50	11.59	4.35	7.34
10015.30	10029.16	153.45	37.45	13.98	6.91	2.70	4.10
10029.16	10043.02	11.62	5.82	6.40	0.52	0.95	1.99

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9938.08	9956.54	97.61	20.69	9.69	4.40	3.16	4.72
9956.54	9975.00	368.05	59.37	18.46	16.58	3.22	6.20
LB 9975.00	9983.06	253.02	29.94	8.11	11.40	3.71	8.45
9983.06	9991.12	345.26	36.02	8.08	15.55	4.47	9.58
9991.12	9999.18	412.37	40.06	8.07	18.58	4.97	10.29
9999.18	10007.24	472.76	43.47	8.07	21.30	5.39	10.87
10007.24	RB 10015.30	270.92	36.06	11.66	12.20	4.47	7.51

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross

section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 2.779

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9899.6	1538.6	9907.6	1536.5	9909.8	1535.8	9927.3	1529.3	9931.4	1528.7
9945.6	1528.3	9964.4	1527.5	9971.5	1527.2	9975.1	1526.3	9988.8	1522.9
9999.4	1522.8	10003.2	1522.7	10005	1523.4	10015.2	1527.8	10015.3	1527.8
10041.4	1528.4	10042.9	1528.4	10043.5	1528.4	10075.2	1537	10076.3	1537.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9899.6	.05	9971.5	.04	10015.3	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.5	10015.3	552.93	540.36	529.03	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9928.36	9942.74	10.97	6.92	14.12	0.49	0.49	1.59
9942.74	9957.12	36.06	14.23	14.39	1.62	0.99	2.53
9957.12	9971.50	80.03	22.97	14.39	3.60	1.60	3.48
LB 9971.50	9980.26	178.62	26.23	9.03	8.05	2.99	6.81
9980.26	9989.02	444.04	45.27	9.02	20.00	5.17	9.81
9989.02	9997.78	620.65	54.71	8.76	27.96	6.24	11.34
9997.78	10006.54	585.88	53.49	9.03	26.39	6.11	10.95
10006.54	RB 10015.30	187.32	27.58	9.53	8.44	3.15	6.79
10015.30	10027.50	42.79	14.17	12.20	1.93	1.16	3.02
10027.50	10039.70	26.99	10.75	12.20	1.22	0.88	2.51
10039.70	10051.90	6.67	3.61	6.48	0.30	0.56	1.85

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9928.36	9942.74	12.07	7.38	14.15	0.54	0.52	1.64
9942.74	9957.12	37.69	14.70	14.39	1.70	1.02	2.56
9957.12	9971.50	81.97	23.44	14.39	3.69	1.63	3.50
LB 9971.50	9980.26	179.23	26.51	9.03	8.07	3.03	6.76
9980.26	9989.02	442.17	45.56	9.02	19.92	5.20	9.71
9989.02	9997.78	616.91	55.00	8.76	27.79	6.28	11.22
9997.78	10006.54	582.47	53.78	9.03	26.24	6.14	10.83
10006.54	RB 10015.30	187.79	27.86	9.53	8.46	3.18	6.74
10015.30	10027.50	44.20	14.57	12.20	1.99	1.19	3.03
10027.50	10039.70	28.29	11.15	12.20	1.27	0.91	2.54
10039.70	10051.90	7.20	3.81	6.52	0.32	0.60	1.89

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 2.677

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9885.8	1528.3	9888.9	1527.1	9892	1526.5	9899.4	1524.8	9900	1524.6
9900.1	1524.6	9900.3	1524.6	9900.6	1524.6	9922.6	1524	9928.6	1523.6
9931.6	1523.5	9937.8	1523.3	9944	1523.1	9950.4	1522.9	9962.3	1522.3
9970.8	1522.2	9975.4	1522.1	9975.5	1522.1	9983.6	1519.5	9986.8	1517.8
9988.3	1517.6	9989.4	1517.6	9989.5	1517.6	9990	1517.6	9993.9	1517.6
10006.5	1517.9	10028.7	1522.8	10030.2	1523.1	10030.3	1523.2	10032.5	1523.2
10045.6	1523.3	10074.2	1523.5	10104.1	1523.2	10120.2	1523.2	10132.1	1524.9
10142	1527	10151.2	1529.5						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9885.8	.05	9975.5	.04	10030.2	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975.5	10030.2	489.85	503.68	530.4	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9921.68	9939.62	3.60	3.64	13.09	0.16	0.28	0.99
9939.62	9957.56	29.15	14.48	17.95	1.31	0.81	2.01
9957.56	9975.50	79.06	26.35	17.95	3.56	1.47	3.00
LB 9975.50	9986.44	257.13	37.97	11.72	11.58	3.47	6.77
9986.44	9997.38	686.72	66.73	11.00	30.93	6.10	10.29
9997.38	10008.32	649.11	64.48	10.99	29.24	5.89	10.07
10008.32	10019.26	368.25	46.25	11.20	16.59	4.23	7.96
10019.26	RB 10030.20	90.03	19.86	11.20	4.06	1.82	4.53
10030.20	10054.40	17.62	11.19	24.24	0.79	0.46	1.57
10054.40	10078.60	8.46	7.20	24.20	0.38	0.30	1.17
10078.60	10102.80	13.99	9.74	24.20	0.63	0.40	1.44
10102.80	10127.00	16.89	10.34	21.20	0.76	0.49	1.63

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9975.50	9986.44	270.67	45.35	14.04	12.19	4.15	5.97
9986.44	9997.38	721.93	74.12	11.00	32.52	6.78	9.74
9997.38	10008.32	686.36	71.87	10.99	30.92	6.57	9.55
10008.32	10019.26	416.02	53.64	11.20	18.74	4.90	7.76
10019.26	RB 10030.20	125.01	27.25	12.51	5.63	2.49	4.59

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 2.581

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9836.8	1536.9	9867.8	1522.8	9874.1	1519.3	9876.6	1519.3	9879.6	1519.2
9897.6	1518.6	9922.4	1518.3	9923.8	1518.2	9924.8	1518.1	9933.3	1517.4
9934.6	1517.3	9934.9	1517.3	9935.3	1517.3	9940.8	1517.6	9942.7	1517.7
9953.1	1517.6	9960.5	1517.5	9965.2	1517.5	9970.2	1517.3	9970.4	1517.2
9984	1514.8	9984.8	1514.6	9985	1514.6	9990.4	1514.3	10006.9	1513.6
10012.2	1513.3	10014.9	1515.4	10018.6	1518.7	10019.4	1518.7	10022.7	1518.8
10077.3	1519.4	10085.1	1519.5	10088.6	1519.5	10105.6	1519.6	10111.6	1519.7
10125.2	1520	10134.1	1520.2	10144.7	1524.3	10150	1526.2	10156	1528.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9836.8	.05	9970.2	.04	10019.4	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970.2	10019.4	339.76	312.29	300.58	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9863.48	9890.16	0.77	1.12	8.21	0.03	0.14	0.68
9890.16	9916.84	26.99	15.23	26.69	1.22	0.57	1.77
9916.84	9943.52	107.72	34.96	26.73	4.85	1.31	3.08
9943.52	9970.20	146.35	41.99	26.68	6.59	1.57	3.49
LB 9970.20	9980.04	184.45	27.09	10.01	8.31	2.75	6.81
9980.04	9989.88	398.75	42.89	9.93	17.96	4.36	9.30
9989.88	9999.72	505.35	49.28	9.85	22.76	5.01	10.25
9999.72	10009.56	578.32	53.44	9.85	26.05	5.43	10.82
10009.56	RB 10019.40	265.77	36.05	11.82	11.97	3.66	7.37
10019.40	10064.93	5.54	5.92	32.54	0.25	0.18	0.94

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross

section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9970.20	9980.04	192.25	27.14	11.84	8.66	2.76	7.08
9980.04	9989.88	464.23	42.94	9.93	20.91	4.36	10.81
9989.88	9999.72	588.19	49.33	9.85	26.50	5.01	11.92
9999.72	10009.56	673.04	53.48	9.85	30.32	5.44	12.58
10009.56	RB 10019.40	302.29	36.10	12.25	13.62	3.67	8.37

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 2.522

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9941.1	1519.9	9943.8	1519.9	9946.6	1519.8	9958	1519	9968.2	1518.3
9976.7	1515.5	9982.3	1513.7	9988.7	1511.4	9993.5	1511.2	10004.8	1510.9
10013.3	1512.2	10015.2	1512.5	10016.3	1512.5	10022.2	1512.4	10026.3	1512.8
10031.9	1513.2	10051.6	1515	10052.1	1515.1	10052.5	1515.1	10053.8	1515.1
10069	1515.4	10095.2	1515.9	10132.9	1516.6	10135.8	1516.8	10143.8	1520.4
10162.6	1530.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9941.1	.05	9976.7	.04	10053.8	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.7	10053.8	237.55	269.05	271.63	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9964.83	9976.70	1.84	1.24	2.88	0.08	0.45	1.49
LB 9976.70	9992.12	352.56	52.10	16.11	15.88	3.38	6.77
9992.12	10007.54	773.57	82.12	15.46	34.85	5.33	9.42
10007.54	10022.96	523.49	65.07	15.51	23.58	4.22	8.05
10022.96	10038.38	343.27	50.46	15.48	15.46	3.27	6.80
10038.38	RB 10053.80	139.58	29.42	15.48	6.29	1.91	4.75
10053.80	10075.56	55.72	23.68	21.76	2.51	1.09	2.35
10075.56	10097.32	24.80	14.57	21.76	1.12	0.67	1.70
10097.32	10119.08	5.16	5.68	21.76	0.23	0.26	0.91
10119.08	10140.84	0.02	0.09	3.18	0.00	0.03	0.21

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9964.83	9976.70	2.10	1.32	2.91	0.09	0.48	1.60
LB 9976.70	9992.12	368.66	52.56	16.11	16.61	3.41	7.01
9992.12	10007.54	804.62	82.58	15.46	36.24	5.36	9.74
10007.54	10022.96	545.82	65.52	15.51	24.59	4.25	8.33
10022.96	10038.38	359.11	50.92	15.48	16.18	3.30	7.05
10038.38	RB 10053.80	139.68	29.87	16.82	6.29	1.94	4.68

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 2.471

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9773.9	1515.9	9776.9	1515.8	9778.8	1515.8	9780.1	1515.7	9795.2	1514.4
9810.7	1513.9	9817.6	1513.8	9830.5	1514.1	9832.7	1514.2	9857.6	1513.6
9898.6	1512.9	9945.8	1511.9	9946.2	1511.9	9948.4	1511.9	9956.3	1511.4
9963.7	1510.9	9967.5	1510.7	9985.1	1509.6	9988.5	1509.2	9990.8	1508.9
9999.9	1508.6	10004.2	1508.3	10011.1	1512.6	10027	1523.4	10027.9	1524.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9773.9	.05	9948.4	.04	10011.1	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9948.4	10011.1	245.42	266.83	265.48	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9843.70	9878.60	5.07	5.23	23.73	0.23	0.22	0.97
9878.60	9913.50	55.49	25.65	34.91	2.50	0.74	2.16
9913.50	9948.40	171.95	50.56	34.91	7.75	1.45	3.40
LB 9948.40	9960.94	171.93	27.16	12.57	7.74	2.17	6.33
9960.94	9973.48	289.35	37.12	12.56	13.03	2.96	7.80
9973.48	9986.02	425.84	46.81	12.57	19.18	3.73	9.10
9986.02	9998.56	631.22	59.30	12.58	28.43	4.73	10.64
9998.56	RB 10011.10	467.63	51.37	13.78	21.06	4.10	9.10
10011.10	10019.50	1.52	0.84	1.90	0.07	0.53	1.81

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9878.60	9913.50	54.84	23.38	33.90	2.47	0.70	2.35
9913.50	9948.40	183.53	48.84	34.91	8.27	1.40	3.76
LB 9948.40	9960.94	168.71	26.54	12.57	7.60	2.12	6.36
9960.94	9973.48	286.91	36.50	12.56	12.92	2.91	7.86
9973.48	9986.02	424.74	46.19	12.57	19.13	3.68	9.20
9986.02	9998.56	632.56	58.68	12.58	28.49	4.68	10.78
9998.56	RB 10011.10	467.35	50.75	13.78	21.05	4.05	9.21
10011.10	10019.50	1.36	0.76	1.81	0.06	0.51	1.79

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 2.421

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9828	1528.3	9830.2	1528.1	9835.8	1527.4	9836.6	1527.1	9838.3	1526.9
9844.1	1526.6	9848.2	1526.1	9849.2	1525.8	9859.3	1522.1	9862.4	1520.9
9867.6	1521.5	9875.9	1522	9876.2	1521.6	9876.6	1521.4	9880.1	1517.4
9882.9	1514.2	9887.8	1512.8	9899.6	1510.4	9904.3	1510.3	9936.9	1509.4
9943.9	1509	9947.5	1508.9	9961.2	1508.6	9965.1	1508.5	9965.2	1508.5
9979.7	1506.7	9983.1	1506.3	9983.6	1506.3	9989	1506.2	9995.3	1506.1
9995.7	1506.1	9997.5	1506	10005.7	1505.8	10007.7	1506.2	10028.2	1508.5
10030.8	1508.6	10030.9	1508.6	10045.8	1512.4	10048.4	1513.2	10055.7	1513.7
10060	1513.8	10061.1	1513.9	10065.6	1514.3	10066.1	1514.3	10066.2	1514.3
10066.3	1514.3	10066.4	1514.4	10066.5	1514.4	10066.6	1514.4	10087.3	1524.5

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9828	.05	9965.2	.04	10030.8	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.2	10030.8	580.62	555.18	525.18	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9882.88	9910.32	10.78	7.44	13.28	0.49	0.56	1.45
9910.32	9937.76	74.38	31.70	27.45	3.35	1.16	2.35
9937.76	9965.20	196.27	56.74	27.46	8.84	2.07	3.46
LB 9965.20	9978.32	262.64	42.30	13.22	11.83	3.22	6.21
9978.32	9991.44	467.82	59.69	13.16	21.07	4.55	7.84
9991.44	10004.56	531.54	64.39	13.12	23.94	4.91	8.26
10004.56	10017.68	432.30	57.05	13.22	19.47	4.35	7.58
10017.68	RB 10030.80	217.10	37.70	13.19	9.78	2.87	5.76
10030.80	10059.05	27.16	10.69	9.45	1.22	1.17	2.54

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9937.76	9965.20	104.75	31.35	13.16	4.72	3.07	3.34
LB 9965.20	9978.32	304.50	52.59	13.22	13.72	4.01	5.79
9978.32	9991.44	491.82	69.98	13.16	22.15	5.33	7.03
9991.44	10004.56	548.86	74.68	13.12	24.72	5.69	7.35
10004.56	10017.68	459.67	67.34	13.22	20.71	5.13	6.83
10017.68	RB 10030.80	261.80	47.99	13.19	11.79	3.66	5.46
10030.80	10059.05	48.59	17.88	10.23	2.19	1.95	2.72

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 2.315

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9945	1527.8	9959.6	1521.8	9964.2	1519.4	9981.7	1505.9	9982.4	1505.4
9990.2	1500.5	9991.1	1499.8	9996.1	1500.1	10001.8	1500.4	10006.7	1500.5
10019.5	1502.8	10022.9	1503.4	10023	1503.4	10029.5	1503.7	10032.2	1503.9
10053.1	1504.6	10087.7	1505.3	10109.5	1505	10129.8	1504.9	10132.8	1504.5
10138.2	1503.7	10143.4	1504.5	10146.2	1505.3	10155.6	1505.7	10156.9	1505.7
10178.3	1506.4	10190.9	1510.1	10212	1516.2				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9945	.05	9982.4	.04	10022.9	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.4	10022.9	422.21	433.8	428.7	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev
10087.7	10212	1510

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9963.70	9982.40	0.35	0.29	1.10	0.02	0.33	1.21
LB 9982.40	9990.50	175.43	25.86	9.59	7.90	3.19	6.78
9990.50	9998.60	558.07	48.80	8.27	25.14	6.02	11.44
9998.60	10006.70	508.31	45.76	8.11	22.90	5.65	11.11
10006.70	10014.80	386.07	39.04	8.23	17.39	4.82	9.89
10014.80	RB 10022.90	212.28	27.27	8.23	9.56	3.37	7.79
10022.90	10044.50	214.66	46.44	21.62	9.67	2.15	4.62
10044.50	10066.10	108.25	30.79	21.61	4.88	1.43	3.52
10066.10	10087.70	56.58	20.86	21.60	2.55	0.97	2.71
10087.70	10105.46	0.00	15.44	17.76	0.00	0.87	0.00
10105.46	10123.21	0.00	18.95	17.76	0.00	1.07	0.00
10123.21	10140.97	0.00	27.92	17.88	0.00	1.57	0.00
10140.97	10158.73	0.00	13.60	17.91	0.00	0.77	0.00
10158.73	10176.49	0.00	1.26	8.79	0.00	0.14	0.00

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9963.70	9982.40	0.35	0.24	1.01	0.02	0.30	1.46
LB 9982.40	9990.50	213.48	25.39	9.59	9.62	3.13	8.41
9990.50	9998.60	688.98	48.33	8.27	31.04	5.97	14.25
9998.60	10006.70	626.88	45.30	8.11	28.24	5.59	13.84
10006.70	10014.80	474.70	38.57	8.23	21.38	4.76	12.31
10014.80	RB 10022.90	215.60	26.80	10.82	9.71	3.31	8.05

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross

section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 2.233

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9706.8	1510.8	9709.9	1510.6	9711	1510.5	9724.4	1509.5	9726.1	1509
9727.3	1508.8	9730.3	1508.2	9733.7	1507.6	9739.7	1507.1	9741.4	1507
9742.8	1507.7	9747.8	1507.2	9748.5	1507.2	9806.3	1503.3	9814.3	1503.1
9825	1502.8	9868.8	1501.7	9906.2	1500.8	9928.8	1500.6	9952.4	1500
9956.5	1500	9956.7	1500	9979.8	1497.2	9983.1	1496.8	9985.2	1496.5
9991.8	1496.1	10005.6	1495.4	10008.6	1496.1	10019.1	1500.9	10034.5	1508.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9706.8	.05	9956.5	.04	10019.1	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9956.5	10019.1	614.99	606.28	562.41	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9856.62	9906.56	3.64	3.72	17.59	0.16	0.21	0.98
9906.56	9956.50	87.42	38.04	49.95	3.94	0.76	2.30
LB 9956.50	9969.02	133.32	24.40	12.61	6.01	1.95	5.46
9969.02	9981.54	348.04	43.41	12.61	15.68	3.47	8.02
9981.54	9994.06	605.88	60.45	12.57	27.29	4.83	10.02
9994.06	10006.58	761.31	69.31	12.56	34.29	5.54	10.98
10006.58	RB 10019.10	280.30	39.31	13.62	12.63	3.14	7.13
10019.10	10026.80	0.09	0.11	0.74	0.00	0.16	0.82

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9956.50	9969.02	144.45	27.72	14.09	6.51	2.21	5.21
9969.02	9981.54	371.23	46.72	12.61	16.72	3.73	7.95
9981.54	9994.06	624.84	63.76	12.57	28.15	5.09	9.80
9994.06	10006.58	776.46	72.63	12.56	34.98	5.80	10.69
10006.58	RB 10019.10	302.67	42.62	13.62	13.63	3.40	7.10
10019.10	10026.80	0.35	0.28	1.01	0.02	0.42	1.22

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 2.118

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9924.8	1508.5	9931.3	1507.4	9941.3	1505.6	9948.2	1504.4	9955.9	1503.2
9960.4	1503	9971.8	1502.6	9979.1	1502.4	9984.8	1494.3	9984.9	1494.2
9988.8	1488.6	9997.8	1489	10006.1	1489.3	10010.6	1490.1	10029.2	1493.5
10029.3	1493.6	10045.3	1494.1	10068.7	1494.9	10069.5	1495	10069.7	1495
10070	1495	10087.1	1494.5	10119.7	1494.6	10125.9	1494.7	10133.4	1494.3
10136.3	1494.1	10137.6	1494	10139.3	1494	10157.7	1493.4	10159.4	1493.8
10195.4	1506.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9924.8	.06	9984.9	.045	10029.3	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.9	10029.3	332.45	358.9	377.71	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9954.85	9984.90	0.54	0.46	1.37	0.02	0.57	1.18
LB 9984.90	9993.78	381.12	48.06	11.81	17.17	5.41	7.93
9993.78	10002.66	592.76	55.91	8.89	26.70	6.30	10.60
10002.66	10011.54	503.74	50.89	8.97	22.69	5.73	9.90
10011.54	10020.42	301.17	37.48	9.03	13.57	4.22	8.04
10020.42	RB 10029.30	133.66	23.06	9.07	6.02	2.60	5.80
10029.30	10045.91	68.94	23.99	16.62	3.11	1.44	2.87
10045.91	10062.52	31.28	14.93	16.62	1.41	0.90	2.09
10062.52	10079.13	10.09	7.58	16.62	0.45	0.46	1.33

10079.13	10095.74	22.67	12.31	16.61	1.02	0.74	1.84
10095.74	10112.35	23.23	12.49	16.61	1.05	0.75	1.86
10112.35	10128.96	19.97	11.41	16.62	0.90	0.69	1.75
10128.96	10145.57	50.02	19.80	16.63	2.25	1.19	2.53
10145.57	10162.18	80.41	26.44	16.82	3.62	1.59	3.04
10162.18	10178.79	0.39	0.43	1.68	0.02	0.27	0.91

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9954.85	9984.90	1.57	1.08	2.13	0.07	1.33	1.46
LB 9984.90	9993.78	441.73	54.80	11.81	19.90	6.17	8.06
9993.78	10002.66	667.36	62.65	8.89	30.06	7.06	10.65
10002.66	10011.54	577.21	57.64	8.97	26.00	6.49	10.01
10011.54	10020.42	369.52	44.22	9.03	16.64	4.98	8.36
10020.42	RB 10029.30	162.61	29.80	11.53	7.32	3.36	5.46

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 2.050

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9860.2	1496.2	9860.4	1496.2	9867.5	1495.1	9878.9	1493	9880.4	1493
9897	1492.4	9914.6	1491.9	9917	1491.5	9931.2	1489.5	9936.5	1489.3
9957.4	1489.3	9962.4	1489.2	9962.6	1489.2	9975.2	1487.9	9977.5	1487.7
9992.9	1487.3	10003.7	1487.1	10005.3	1487.4	10007.7	1487.8	10011.6	1488.6
10019	1490	10040.5	1490.3	10044.8	1490.4	10048.9	1490.5	10050.4	1490.5
10055.5	1490.2	10064.8	1489.5	10068.2	1489.2	10069.5	1489.2	10076	1489.6
10087.8	1490.3	10094	1493	10110.1	1499.3	10111.4	1500.3		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9860.2	.06	9962.4	.045	10019	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9962.4	10019	134.46	208.41	213.85	.3	.5

Ineffective Flow num= 1

Sta L	Sta R	Elev
10050.4	10111.4	1494

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9901.08	9921.52	4.08	2.96	6.28	0.18	0.48	1.38
9921.52	9941.96	152.57	41.68	20.54	6.87	2.04	3.66
9941.96	9962.40	214.22	51.00	20.44	9.65	2.49	4.20
LB 9962.40	9973.72	241.85	35.62	11.38	10.89	3.15	6.79
9973.72	9985.04	375.54	46.31	11.34	16.92	4.09	8.11
9985.04	9996.36	427.81	50.05	11.32	19.27	4.42	8.55
9996.36	10007.68	441.04	51.08	11.38	19.87	4.51	8.63
10007.68	RB 10019.00	204.97	32.43	11.53	9.23	2.86	6.32
10019.00	10034.70	89.43	26.27	15.70	4.03	1.67	3.40
10034.70	10050.40	68.48	22.38	15.70	3.08	1.43	3.06
10050.40	10070.73	0.00	40.05	20.38	0.00	1.97	0.00
10070.73	10091.07	0.00	36.49	20.66	0.00	1.79	0.00
10091.07	10111.40	0.00	0.00	0.15	0.00	0.03	0.00

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9941.96	9962.40	84.22	17.96	9.79	3.79	2.43	4.69
LB 9962.40	9973.72	297.33	34.60	11.38	13.39	3.06	8.59
9973.72	9985.04	466.95	45.29	11.34	21.03	4.00	10.31
9985.04	9996.36	533.44	49.03	11.32	24.03	4.33	10.88
9996.36	10007.68	550.32	50.06	11.38	24.79	4.42	10.99
10007.68	RB 10019.00	250.77	31.40	11.53	11.30	2.77	7.99
10019.00	10034.70	36.97	9.90	7.61	1.67	1.65	3.73

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross

section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 2.011

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9911.7	1492.2	9913.4	1492.2	9924.4	1492.1	9943.1	1487.3	9947.7	1486.2
9948.3	1486.1	9960.2	1487.7	9963.9	1488	9968.6	1488.6	9970.6	1488.5
9972.6	1488.4	9979.1	1488	9988	1484.7	9992.1	1482.5	9996.2	1482.8
9999.6	1483	10010.9	1483.9	10018.2	1484.6	10019.3	1484.7	10019.9	1485.3
10028.5	1487.3	10030.9	1489.9	10032.4	1490.6	10035	1491.8	10037.3	1493.7
10045.3	1496.9	10047.5	1497.8	10048.1	1497.8				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9911.7	.06	9979.1	.045	10028.5	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.1	10028.5	224.53	202.84	151.3	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9925.18	9938.66	0.29	0.34	1.68	0.01	0.21	0.85
9938.66	9952.14	93.65	25.29	13.80	4.22	1.88	3.70
9952.14	9965.62	57.23	18.70	13.58	2.58	1.39	3.06
9965.62	9979.10	11.23	7.03	13.52	0.51	0.52	1.60
LB 9979.10	9988.98	172.51	26.64	10.60	7.77	2.70	6.48
9988.98	9998.86	653.17	58.57	10.32	29.42	5.93	11.15
9998.86	10008.74	596.02	54.56	9.91	26.85	5.52	10.92
10008.74	10018.62	453.06	46.30	9.92	20.41	4.69	9.79
10018.62	RB 10028.50	180.82	27.15	10.36	8.14	2.75	6.66
10028.50	10038.30	2.04	1.12	2.12	0.09	0.78	1.82

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9925.18	9938.66	0.29	0.34	1.68	0.01	0.21	0.86
9938.66	9952.14	93.76	25.32	13.80	4.22	1.88	3.70
9952.14	9965.62	57.33	18.73	13.58	2.58	1.39	3.06
9965.62	9979.10	11.29	7.05	13.52	0.51	0.52	1.60
LB 9979.10	9988.98	172.57	26.66	10.60	7.77	2.70	6.47
9988.98	9998.86	652.97	58.59	10.32	29.41	5.93	11.14
9998.86	10008.74	595.87	54.58	9.91	26.84	5.52	10.92
10008.74	10018.62	452.99	46.32	9.92	20.40	4.69	9.78
10018.62	RB 10028.50	180.88	27.17	10.36	8.15	2.75	6.66
10028.50	10038.30	2.04	1.12	2.12	0.09	0.78	1.82

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.973

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9972.7	1497.1	9973.2	1496.7	9981.3	1486.7	9981.4	1486.7	9981.8	1486.2
9989.7	1480.4	9989.9	1480.3	9991.7	1480.4	10013.4	1482.3	10021.5	1483
10022.5	1483.2	10035.5	1484.9	10035.6	1484.9	10043.7	1485.1	10057.5	1485.5
10074	1486.2	10081	1488	10093.3	1491	10120.7	1497.4		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9972.7	.06	9981.3	.045	10035.5	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.3	10035.5	162.7	149.61	116.02	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9977.00	9981.30	0.08	0.12	0.69	0.00	0.27	0.66
LB 9981.30	9992.14	320.81	48.25	13.01	14.45	4.45	6.65
9992.14	10002.98	648.97	68.56	10.88	29.23	6.32	9.47
10002.98	10013.82	494.96	58.28	10.88	22.30	5.38	8.49
10013.82	10024.66	353.33	47.65	10.91	15.92	4.40	7.42
10024.66	RB 10035.50	191.49	33.02	10.93	8.63	3.05	5.80
10035.50	10052.54	122.64	36.13	17.05	5.52	2.12	3.39

10052.54	10069.58	74.88	26.87	17.05	3.37	1.58	2.79
10069.58	10086.62	12.85	7.10	8.59	0.58	0.84	1.81

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less *than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.*
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9977.00	9981.30	0.07	0.11	0.68	0.00	0.26	0.66
LB 9981.30	9992.14	320.87	48.16	13.01	14.45	4.44	6.66
9992.14	10002.98	649.69	68.47	10.88	29.27	6.32	9.49
10002.98	10013.82	495.31	58.19	10.88	22.31	5.37	8.51
10013.82	10024.66	353.38	47.56	10.91	15.92	4.39	7.43
10024.66	RB 10035.50	191.25	32.93	10.93	8.61	3.04	5.81
10035.50	10052.54	122.24	35.98	17.05	5.51	2.11	3.40
10052.54	10069.58	74.47	26.73	17.05	3.35	1.57	2.79
10069.58	10086.62	12.72	7.03	8.56	0.57	0.83	1.81

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.944

INPUT
Description:
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9953.2	1506.5	9959	1503.3	9960.7	1502.3	9963.7	1499.5	9967.9	1495.5
9979.6	1484.2	9982.3	1481.6	9985.8	1481.2	10013.6	1480	10015.7	1480
10025.6	1481.3	10027.8	1481.6	10028.3	1481.7	10037.4	1484	10052.6	1487.1
10099.3	1497.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9953.2	.05	9979.6	.04	10037.4	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.6	10037.4	387.27	379.74	373.76	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9966.40	9979.60	0.21	0.17	0.82	0.01	0.29	1.27
LB 9979.60	9991.16	326.48	36.62	12.64	14.71	3.17	8.92
9991.16	10002.72	521.94	46.85	11.57	23.51	4.05	11.14
10002.72	10014.28	633.27	52.61	11.57	28.53	4.55	12.04
10014.28	10025.84	548.84	48.41	11.65	24.72	4.19	11.34
10025.84	RB 10037.40	186.49	25.53	11.87	8.40	2.21	7.31
10037.40	10068.35	2.77	1.46	3.86	0.12	0.39	1.90

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9966.40	9979.60	0.23	0.18	0.84	0.01	0.30	1.29
LB 9979.60	9991.16	326.87	36.79	12.64	14.72	3.18	8.88
9991.16	10002.72	521.66	47.02	11.57	23.50	4.07	11.09
10002.72	10014.28	632.50	52.78	11.57	28.49	4.57	11.98
10014.28	10025.84	548.44	48.58	11.65	24.70	4.20	11.29
10025.84	RB 10037.40	187.36	25.70	11.87	8.44	2.22	7.29
10037.40	10068.35	2.93	1.52	3.87	0.13	0.40	1.93

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.872

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9913.4	1497.9	9959.2	1482.1	9963.4	1480.7	9969.5	1478.6	9976.4	1477.7
9982.1	1477	9984.2	1476.6	9988	1475.7	10007.9	1475.7	10014.6	1475.7

10017	1476.3	10025.3	1478.4	10029.2	1480.5	10038.6	1485.6	10045.3	1488.2
10047.2	1489.1	10048.2	1489.6	10061.4	1494.2	10062.4	1494.6	10062.9	1494.7
10065	1494.9	10093.6	1498.8	10097.5	1499.5				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9913.4	.05	9963.4	.04	10029.2	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9963.4	10029.2	470.43	467.66	470.55	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9938.40	9963.40	0.04	0.07	0.67	0.00	0.11	0.60
LB 9963.40	9976.56	142.29	27.27	13.57	6.41	2.07	5.22
9976.56	9989.72	470.08	55.48	13.34	21.17	4.22	8.47
9989.72	10002.88	675.56	68.58	13.16	30.43	5.21	9.85
10002.88	10016.04	669.86	68.33	13.20	30.17	5.19	9.80
10016.04	RB 10029.20	262.02	39.81	13.98	11.80	3.02	6.58
10029.20	10063.35	0.14	0.16	0.86	0.01	0.21	0.89

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9938.40	9963.40	0.03	0.05	0.60	0.00	0.10	0.57
LB 9963.40	9976.56	141.07	26.99	13.57	6.35	2.05	5.23
9976.56	9989.72	470.08	55.21	13.34	21.17	4.19	8.52
9989.72	10002.88	676.64	68.31	13.16	30.48	5.19	9.91
10002.88	10016.04	670.90	68.05	13.20	30.22	5.17	9.86
10016.04	RB 10029.20	261.16	39.53	13.98	11.76	3.00	6.61
10029.20	10063.35	0.12	0.14	0.82	0.01	0.20	0.87

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.784

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9905	1488.6	9909.5	1487.1	9926.3	1481.8	9926.7	1481.7	9928.9	1481.6
9950.8	1479.8	9960.9	1475.7	9966.6	1473.2	9967.6	1473	9969.7	1472.6
9978.7	1470.8	9980.8	1470.7	10001.5	1471.1	10013.3	1472.8	10014.6	1472.9
10020.7	1475.7	10057.4	1492.7	10086.2	1499.5	10086.4	1499.5		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9905	.05	9960.9	.04	10020.7	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960.9	10020.7	493.73	496.9	499.61	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9932.95	9960.90	0.04	0.06	0.56	0.00	0.11	0.68
LB 9960.90	9972.86	191.38	29.14	12.60	8.62	2.44	6.57
9972.86	9984.82	621.34	58.08	12.08	27.99	4.86	10.70
9984.82	9996.78	660.66	60.02	11.96	29.76	5.02	11.01
9996.78	10008.74	551.46	53.99	12.04	24.84	4.51	10.21
10008.74	RB 10020.70	195.09	29.50	12.62	8.79	2.47	6.61
10020.70	10053.55	0.03	0.05	0.50	0.00	0.11	0.67

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9932.95	9960.90	0.05	0.07	0.59	0.00	0.14	0.76
LB 9960.90	9972.86	192.93	29.49	12.60	8.69	2.47	6.54
9972.86	9984.82	620.22	58.43	12.08	27.94	4.89	10.62
9984.82	9996.78	659.26	60.37	11.96	29.70	5.05	10.92
9996.78	10008.74	550.88	54.34	12.04	24.81	4.54	10.14
10008.74	RB 10020.70	196.62	29.85	12.62	8.86	2.50	6.59
10020.70	10053.55	0.05	0.06	0.53	0.00	0.13	0.75

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3

REACH: 1 RS: 1.690

INPUT
Description:
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9920.2	1478.6	9922.4	1478.5	9935.1	1477.7	9943.9	1475.7	9949.9	1474.3
9956.6	1471.6	9961.8	1470.6	9970.6	1467.7	9975.5	1466.5	9977.9	1466.1
9991.2	1466	10003.6	1466.1	10004.2	1466	10004.6	1465.9	10010.5	1468.8
10014.1	1471.3	10014.1	1471.4	10040.1	1485.8				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9920.2	.05	9956.6	.04	10014.1	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9956.6	10014.1	250.6	257.37	261.1	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9938.40	9956.60	0.85	0.75	2.08	0.04	0.39	1.13
LB 9956.60	9968.10	102.52	24.37	11.93	4.62	2.12	4.21
9968.10	9979.60	486.47	61.78	11.81	21.91	5.37	7.87
9979.60	9991.10	651.32	72.82	11.50	29.34	6.33	8.94
9991.10	10002.60	651.04	72.81	11.50	29.33	6.33	8.94
10002.60	RB 10014.10	326.71	50.68	13.08	14.72	4.41	6.45
10014.10	10027.10	1.09	0.86	2.02	0.05	0.49	1.27

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9938.40	9956.60	0.69	0.63	1.90	0.03	0.36	1.09
LB 9956.60	9968.10	99.40	23.63	11.93	4.48	2.05	4.21
9968.10	9979.60	486.67	61.04	11.81	21.92	5.31	7.97
9979.60	9991.10	653.60	72.08	11.50	29.44	6.27	9.07
9991.10	10002.60	653.31	72.06	11.50	29.43	6.27	9.07
10002.60	RB 10014.10	325.40	49.94	13.08	14.66	4.34	6.52
10014.10	10027.10	0.93	0.75	1.88	0.04	0.46	1.24

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.641

INPUT
Description: 100-year , 6-hour Peak Discharge of 2570 cfs from HEC-1 model at station C303.
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9798.5	1473.8	9834.5	1472.9	9893.9	1471.1	9909.1	1469.9	9939.2	1468.4
9945	1468.1	9971.2	1466.8	9976.2	1465.8	9983.3	1464.3	10004.6	1464.8
10009.6	1464.9	10012.6	1465.6	10015.1	1467	10020.7	1469.1	10032.6	1473.7
10042.5	1479.5	10048.7	1481.9						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9798.5	.05	9971.2	.04	10020.7	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.2	10020.7	192.06	214.61	220.91	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9884.85	9928.03	6.63	4.65	13.68	0.26	0.34	1.43
9928.03	9971.20	324.71	76.09	43.23	12.63	1.76	4.27
LB 9971.20	9981.10	359.99	38.03	10.11	14.01	3.84	9.47
9981.10	9991.00	605.54	51.63	9.95	23.56	5.22	11.73
9991.00	10000.90	573.95	49.91	9.90	22.33	5.04	11.50
10000.90	10010.80	527.75	47.51	9.93	20.53	4.80	11.11
10010.80	RB 10020.70	170.94	24.88	10.69	6.65	2.51	6.87
10020.70	10034.70	0.48	0.37	1.49	0.02	0.27	1.29

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9884.85	9928.03	6.84	3.43	6.45	0.27	0.57	2.00
9928.03	9971.20	349.67	77.74	43.23	13.61	1.80	4.50
LB 9971.20	9981.10	356.74	38.41	10.11	13.88	3.88	9.29
9981.10	9991.00	597.48	52.01	9.95	23.25	5.25	11.49
9991.00	10000.90	566.55	50.28	9.90	22.04	5.08	11.27
10000.90	10010.80	521.27	47.89	9.93	20.28	4.84	10.88
10010.80	RB 10020.70	170.87	25.26	10.69	6.65	2.55	6.76
10020.70	10034.70	0.58	0.43	1.53	0.02	0.31	1.35

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.600

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9729.5	1472.6	9735.7	1471.6	9738.4	1471.2	9746.5	1470.7	9748.1	1470.5
9749.6	1470.5	9771.8	1469	9775.4	1469	9781.2	1468.9	9797.3	1468.2
9806.8	1468	9819.7	1468.1	9830.7	1468	9846.1	1468.2	9859.3	1468.3
9863.1	1468	9869.7	1467.1	9883.3	1466.8	9909.3	1466.1	9925	1465.7
9925.8	1465.5	9930	1464.8	9946.7	1463	9947	1463	9947.3	1463
9951.6	1463.4	9955.4	1463.7	9968.3	1463.9	9968.9	1463.9	9970.1	1463.9
9980.4	1464	9986.2	1463.4	10005.4	1463.5	10011	1463.5	10016.8	1467
10020.5	1469.2	10034.8	1477.7						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9729.5	.05	9925.8	.04	10016.8	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9925.8	10016.8	119.2	196.07	218.03	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9847.28	9886.54	6.56	5.54	17.86	0.26	0.31	1.18
9886.54	9925.80	109.93	41.24	39.30	4.28	1.05	2.67
LB 9925.80	9944.00	385.83	53.46	18.34	15.01	2.94	7.22
9944.00	9962.20	587.55	68.67	18.25	22.86	3.77	8.56
9962.20	9980.40	476.82	60.52	18.20	18.55	3.33	7.88
9980.40	9998.60	574.26	67.71	18.23	22.34	3.72	8.48
9998.60	RB 10016.80	429.02	58.00	19.17	16.69	3.19	7.40
10016.80	10025.80	0.03	0.05	0.47	0.00	0.12	0.62

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
LB 9925.80	9944.00	391.95	62.70	20.58	15.25	3.44	6.25
9944.00	9962.20	609.99	77.90	18.25	23.73	4.28	7.83
9962.20	9980.40	508.25	69.75	18.20	19.78	3.83	7.29
9980.40	9998.60	597.85	76.94	18.23	23.26	4.23	7.77
9998.60	RB 10016.80	461.71	67.23	19.17	17.97	3.69	6.87
10016.80	10025.80	0.24	0.25	0.97	0.01	0.63	0.97

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.563

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9789.6	1468.1	9794.9	1467.6	9796.7	1467.3	9819.3	1466.8	9822.6	1466.7
9824.6	1466.6	9831.2	1466.3	9838.4	1465.9	9851.2	1465.5	9855.3	1465.4
9860.9	1464.7	9864.3	1464.4	9869.6	1464.7	9876.1	1465	9887.2	1465
9888.9	1465	9894.2	1465.1	9903.2	1465	9918	1464.3	9930	1462.6
9937.1	1461.2	9943.7	1460.4	9948.6	1459.7	9958.8	1461.8	9960.6	1462.3
9969.5	1463	9975	1463.3	9978.1	1463	9981.4	1462.6	9986.5	1461.6
9992.1	1461.6	9996.5	1461.2	10000	1460.8	10003.4	1460.8	10004.3	1460.8
10006.9	1460.5	10008.2	1460.6	10010.5	1460.9	10015.4	1461.5	10017.3	1461.8
10023.9	1462.1	10024.6	1462.2	10025.7	1462.2	10031.9	1463.4	10043	1465.4
10050.5	1466.1	10055.7	1467.9	10061.5	1471	10062.5	1471.3	10065.8	1472.9
10070.8	1475.1	10071.7	1475.2						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9789.6	.05	9975	.04	10031.9	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975	10031.9	131.38	140.13	122.93	.6	.8

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9900.84	9937.92	166.50	30.41	20.80	6.48	1.48	5.47
9937.92	9975.00	868.27	103.69	37.49	33.78	2.80	8.37
LB 9975.00	9986.38	150.36	19.74	11.51	5.85	1.74	7.62
9986.38	9997.76	347.70	32.53	11.41	13.53	2.86	10.69
9997.76	10009.14	505.09	40.72	11.42	19.65	3.58	12.40
10009.14	10020.52	357.19	33.12	11.45	13.90	2.91	10.79
10020.52	RB 10031.90	168.60	21.14	11.51	6.56	1.86	7.97
10031.90	10051.80	6.29	2.40	5.24	0.24	0.46	2.63

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9937.92	9975.00	520.00	74.48	30.38	20.23	2.98	6.98
LB 9975.00	9986.38	240.89	28.27	11.51	9.37	2.48	8.52
9986.38	9997.76	451.44	41.05	11.41	17.57	3.61	11.00
9997.76	10009.14	610.80	49.25	11.42	23.77	4.33	12.40
10009.14	10020.52	460.94	41.64	11.45	17.94	3.66	11.07
10020.52	RB 10031.90	261.19	29.67	11.51	10.16	2.61	8.80
10031.90	10051.80	24.75	6.26	5.99	0.96	1.21	3.95

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.537

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9932.3	1467.9	9947.6	1465.7	9958.3	1464.1	9974.5	1461.5	9977.6	1460.4
9978.9	1459.9	9994.2	1454.1	9996.1	1453.2	9998.3	1452.9	10000.2	1452.9
10006.6	1452.8	10017.8	1457.1	10018.4	1457.3	10019.1	1457.5	10019.2	1457.5
10021.2	1457.7	10051.1	1462.2	10060.5	1466.2	10067.2	1468.3	10067.4	1468.8
10068.4	1468.8	10072	1469.7	10078.2	1469.9	10080.2	1470.1		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9932.3	.05	9978.9	.04	10019.1	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.9	10019.1	108.63	92.19	78.51	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9955.60	9978.90	0.21	0.19	1.07	0.01	0.19	1.07
LB 9978.90	9986.94	86.97	15.34	8.60	3.38	1.91	5.67
9986.94	9994.98	426.34	39.88	8.63	16.59	4.96	10.69

9994.98	10003.02	835.86	58.46	8.18	32.52	7.27	14.30
10003.02	10011.06	772.71	56.26	8.36	30.07	7.00	13.74
10011.06	RB 10019.10	328.90	34.05	8.58	12.80	4.24	9.66
10019.10	10039.47	119.02	27.84	19.47	4.63	1.44	4.28

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9955.60	9978.90	0.38	0.29	1.17	0.01	0.29	1.29
LB 9978.90	9986.94	91.74	16.17	8.60	3.57	2.01	5.67
9986.94	9994.98	426.45	40.70	8.63	16.59	5.06	10.48
9994.98	10003.02	827.10	59.29	8.18	32.18	7.37	13.95
10003.02	10011.06	765.31	57.08	8.36	29.78	7.10	13.41
10011.06	RB 10019.10	330.89	34.88	8.58	12.88	4.34	9.49
10019.10	10039.47	128.13	29.82	19.58	4.99	1.55	4.30

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.519

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9968.7	1469.5	9969.4	1469.2	9977.4	1462.2	9979.6	1459.8	9979.9	1459.6
9980.1	1459.5	9986.1	1457.2	9987	1456.8	9992.9	1454.3	9993.1	1454.2
9997.9	1451.1	9999.7	1449.9	10006.7	1450.4	10008.3	1450.5	10009.1	1450.6
10010.4	1450.7	10015.1	1451.4	10028.3	1457.4	10046	1465.6	10046.6	1465.8
10049.1	1467	10073.4	1469.8						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9968.7	.05	9986.1	.04	10028.3	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986.1	10028.3	101.14	117.38	143.89	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9977.40	9986.10	0.46	0.33	1.41	0.02	0.25	1.40
LB 9986.10	9994.54	132.52	19.75	9.33	5.16	2.34	6.71
9994.54	10002.98	762.38	56.72	9.45	29.66	6.72	13.44
10002.98	10011.42	931.51	61.24	8.47	36.25	7.26	15.21
10011.42	10019.86	620.88	49.07	8.95	24.16	5.81	12.65
10019.86	RB 10028.30	122.14	18.76	9.27	4.75	2.22	6.51
10028.30	10050.85	0.10	0.10	0.72	0.00	0.15	0.98

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9977.40	9986.10	0.52	0.36	1.43	0.02	0.27	1.45
LB 9986.10	9994.54	133.69	19.93	9.33	5.20	2.36	6.71
9994.54	10002.98	761.54	56.90	9.45	29.63	6.74	13.38
10002.98	10011.42	930.12	61.42	8.47	36.19	7.28	15.14
10011.42	10019.86	620.70	49.25	8.95	24.15	5.84	12.60
10019.86	RB 10028.30	123.31	18.94	9.27	4.80	2.24	6.51
10028.30	10050.85	0.12	0.11	0.75	0.00	0.17	1.04

Warning: The energy equation could not be balanced within the specified number of iterations. The

program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.497

INPUT
Description:
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9923.1	1468	9929.5	1467.2	9962.6	1463.5	9962.8	1463.5	9963.5	1463.4
9964.2	1463.3	9964.4	1463.2	9977.7	1456.2	9990.9	1449.1	9994.7	1449
10003.3	1448.8	10023.9	1454.2	10024.7	1454.4	10039.7	1461.4	10050.9	1467.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9923.1	.05	9977.7	.04	10024.7	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9977.7 10024.7 69.49 82.02 91.23 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9950.40	9977.70	0.03	0.05	0.47	0.00	0.11	0.61
LB 9977.70	9987.10	153.65	25.84	10.67	5.98	2.75	5.95
9987.10	9996.50	757.23	65.34	9.92	29.46	6.95	11.59
9996.50	10005.90	879.14	70.22	9.49	34.21	7.47	12.52
10005.90	10015.30	552.57	53.65	9.72	21.50	5.71	10.30
10015.30	RB 10024.70	215.55	30.49	9.72	8.39	3.24	7.07
10024.70	10037.80	11.83	4.38	4.78	0.46	1.01	2.70

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9950.40	9977.70	0.02	0.04	0.43	0.00	0.10	0.58
LB 9977.70	9987.10	152.74	25.67	10.67	5.94	2.73	5.95
9987.10	9996.50	758.03	65.16	9.92	29.50	6.93	11.63
9996.50	10005.90	880.35	70.04	9.49	34.25	7.45	12.57
10005.90	10015.30	552.60	53.47	9.72	21.50	5.69	10.34
10015.30	RB 10024.70	214.65	30.32	9.72	8.35	3.22	7.08
10024.70	10037.80	11.61	4.29	4.73	0.45	1.00	2.70

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.481

INPUT
Description:
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9940.9	1464.4	9945.4	1463.7	9947.1	1462.7	9950.2	1461.2	9968.9	1451.8
9978.1	1450.6	9982.2	1449.9	9989.2	1448.7	9990.3	1448.5	10000.6	1447.8
10001.7	1447.7	10004.2	1449.7	10010.8	1454.5	10027.5	1466.6	10035.2	1468.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9940.9	.05	9968.9	.04	10010.8	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9968.9 10010.8 304.34 297.11 288.98 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9954.90	9968.90	38.03	8.86	6.64	1.48	1.49	4.29
LB 9968.90	9977.28	285.21	29.59	8.45	11.10	3.53	9.64
9977.28	9985.66	467.85	39.90	8.50	18.20	4.76	11.73
9985.66	9994.04	712.03	51.24	8.46	27.71	6.11	13.90
9994.04	10002.42	840.40	56.98	8.60	32.70	6.80	14.75
10002.42	RB 10010.80	226.43	28.03	10.44	8.81	3.35	8.08
10010.80	10023.00	0.05	0.06	0.48	0.00	0.14	0.84

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9954.90	9968.90	38.75	9.03	6.68	1.51	1.52	4.29
LB 9968.90	9977.28	286.38	29.83	8.45	11.14	3.56	9.60
9977.28	9985.66	468.12	40.15	8.50	18.21	4.79	11.66
9985.66	9994.04	710.84	51.49	8.46	27.66	6.14	13.81
9994.04	10002.42	838.32	57.23	8.60	32.62	6.83	14.65
10002.42	RB 10010.80	227.53	28.28	10.44	8.85	3.37	8.05
10010.80	10023.00	0.06	0.07	0.51	0.00	0.17	0.90

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.425

INPUT
Description:
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9950.9	1467.6	9951.4	1467.2	9961.8	1461.2	9969.2	1454.5	9978.9	1448.4
9986	1443.8	9987.7	1443	9993.7	1441	9994.8	1440.7	9995.3	1440.7
9998.9	1440.9	10010.3	1441.8	10011.6	1441.9	10012.7	1442.5	10024.9	1448.4
10046.4	1458.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9950.9	.07	9978.9	.07	10024.9	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.9	10024.9	203.47	210.84	195.99	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9964.90	9978.90	0.49	0.36	1.26	0.02	0.34	1.37
LB 9978.90	9988.10	202.86	33.21	10.76	7.89	3.61	6.11
9988.10	9997.30	758.63	69.85	9.55	29.52	7.59	10.86
9997.30	10006.50	834.86	72.98	9.23	32.48	7.93	11.44
10006.50	10015.70	626.92	62.70	9.70	24.39	6.82	10.00
10015.70	RB 10024.90	145.57	26.66	10.22	5.66	2.90	5.46
10024.90	10035.65	0.66	0.46	1.53	0.03	0.34	1.42

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9964.90	9978.90	0.40	0.31	1.17	0.02	0.31	1.31
LB 9978.90	9988.10	200.72	32.72	10.76	7.81	3.56	6.13
9988.10	9997.30	760.40	69.36	9.55	29.59	7.54	10.96
9997.30	10006.50	837.23	72.49	9.23	32.58	7.88	11.55
10006.50	10015.70	627.55	62.22	9.70	24.42	6.76	10.09
10015.70	RB 10024.90	143.16	26.17	10.22	5.57	2.84	5.47
10024.90	10035.65	0.54	0.39	1.41	0.02	0.31	1.37

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.385

INPUT
Description:
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9977.8	1450.3	9985.5	1444.9	9991.2	1439.5	9998.1	1433	10003.3	1433.4
10007.7	1433.3	10015.7	1436.8	10018	1438.1	10021.5	1439.4	10023	1439.8
10026.4	1440.6	10027.9	1440.9	10047.2	1444	10050	1444.6	10058.1	1446.8
10066.6	1449								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9977.8	.07	9991.2	.07	10023	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9991.2	10023	172.59	154.51	133.59	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9984.50	9991.20	8.78	2.44	3.13	0.34	1.07	3.60
LB 9991.20	9997.56	308.80	32.73	8.74	12.02	5.15	9.44
9997.56	10003.92	848.86	53.59	6.58	33.03	8.43	15.84
10003.92	10010.28	792.51	51.49	6.60	30.84	8.10	15.39
10010.28	10016.64	439.76	37.02	7.00	17.11	5.82	11.88
10016.64	RB 10023.00	141.33	18.58	6.85	5.50	2.92	7.61
10023.00	10044.80	29.96	8.03	9.75	1.17	0.84	3.73

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9984.50	9991.20	9.48	2.62	3.20	0.37	1.15	3.63
LB 9991.20	9997.56	309.96	33.22	8.74	12.06	5.22	9.33
9997.56	10003.92	843.81	54.08	6.58	32.83	8.50	15.60
10003.92	10010.28	788.29	51.98	6.60	30.67	8.17	15.16
10010.28	10016.64	440.14	37.51	7.00	17.13	5.90	11.73
10016.64	RB 10023.00	144.55	19.07	6.85	5.62	3.00	7.58
10023.00	10044.80	33.76	8.77	9.83	1.31	0.92	3.85

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.356

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9943.9	1457.5	9964.2	1443.5	9966.1	1442.3	9968.9	1440.6	9980.3	1433.3
9994.5	1430.5	9999	1429.8	10014.2	1430.7	10018.6	1431	10023.6	1432
10033.6	1433.7	10034.4	1433.9	10050.4	1438.4	10058.3	1440.2	10067.3	1442.6
10080	1446.5	10085.6	1448.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9943.9	.07	9980.3	.07	10033.6	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980.3	10033.6	145.83	132.08	121.17	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9962.10	9980.30	44.98	13.85	7.81	1.75	2.11	3.25
LB 9980.30	9990.96	365.61	56.11	10.87	14.23	5.26	6.52
9990.96	10001.62	618.90	76.72	10.79	24.08	7.20	8.07
10001.62	10012.28	629.45	77.19	10.68	24.49	7.24	8.15
10012.28	10022.94	518.03	68.88	10.76	20.16	6.46	7.52
10022.94	RB 10033.60	305.71	50.30	10.82	11.90	4.72	6.08

10033.60	10059.60	87.31	26.17	14.17	3.40	1.92	3.34

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9962.10	9980.30	45.00	13.86	7.81	1.75	2.11	3.25
LB 9980.30	9990.96	365.62	56.12	10.87	14.23	5.26	6.52
9990.96	10001.62	618.86	76.73	10.79	24.08	7.20	8.07
10001.62	10012.28	629.41	77.20	10.68	24.49	7.24	8.15
10012.28	10022.94	518.01	68.89	10.76	20.16	6.46	7.52
10022.94	RB 10033.60	305.73	50.32	10.82	11.90	4.72	6.08
10033.60	10059.60	87.37	26.18	14.17	3.40	1.92	3.34

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.331

INPUT
Description:
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9927.9	1445.3	9935.4	1440.1	9947.5	1432.5	9967.4	1432.8	9969.4	1432.8
9995.3	1427.9	9996.7	1427.7	9997.3	1427.7	10007.5	1428.2	10018.5	1435.5
10021.1	1437.3	10031.5	1443.7	10060.8	1444.9	10073	1445.2		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9927.9	.07	9969.4	.07	10018.5	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969.4	10018.5	161.17	142.49	135.88	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9936.20	9944.50	3.52	2.01	2.98	0.14	0.79	1.75
9944.50	9952.80	120.27	25.78	8.84	4.68	3.11	4.67
9952.80	9961.10	140.85	27.63	8.30	5.48	3.33	5.10
9961.10	9969.40	132.39	26.63	8.30	5.15	3.21	4.97
LB 9969.40	9979.22	228.72	40.27	9.99	8.90	4.10	5.68
9979.22	9989.04	426.31	58.51	9.99	16.59	5.96	7.29
9989.04	9998.86	662.34	76.07	9.95	25.77	7.75	8.71
9998.86	10008.68	680.46	77.68	10.07	26.48	7.91	8.76
10008.68	RB 10018.50	175.01	36.63	11.79	6.81	3.73	4.78
10018.50	10045.75	0.13	0.16	0.83	0.01	0.24	0.80

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9936.20	9944.50	3.55	2.02	2.99	0.14	0.80	1.76
9944.50	9952.80	120.44	25.84	8.84	4.69	3.11	4.66
9952.80	9961.10	141.01	27.69	8.30	5.49	3.34	5.09
9961.10	9969.40	132.56	26.68	8.30	5.16	3.21	4.97
LB 9969.40	9979.22	228.88	40.34	9.99	8.91	4.11	5.67
9979.22	9989.04	426.25	58.58	9.99	16.59	5.97	7.28
9989.04	9998.86	661.95	76.14	9.95	25.76	7.75	8.69
9998.86	10008.68	680.04	77.75	10.07	26.46	7.92	8.75
10008.68	RB 10018.50	175.18	36.70	11.79	6.82	3.74	4.77
10018.50	10045.75	0.13	0.17	0.83	0.01	0.24	0.81

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.304

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9954.5	1448.2	9957.5	1446.7	9978.5	1436.2	9982.6	1432.7	9986.2	1429.8
9990.8	1426.2	10004.4	1426.2	10016.5	1426.1	10031.4	1432.5	10044.3	1438
10057	1444.2	10059.4	1444.6	10062.8	1444.8	10066.9	1444.8	10083.5	1447.5
10104.9	1450.9	10123.6	1453.3	10128.3	1453.9	10143.6	1455.4	10154.2	1458

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9954.5	.06	9982.6	.06	10031.4	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.6	10031.4	238.08	239.31	232.98	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.55	9982.60	0.11	0.11	0.68	0.00	0.22	0.99
LB 9982.60	9992.36	284.13	41.27	12.02	11.06	4.23	6.88
9992.36	10002.12	745.67	67.74	9.76	29.01	6.94	11.01
10002.12	10011.88	749.82	67.97	9.76	29.18	6.96	11.03
10011.88	10021.64	640.21	62.95	10.22	24.91	6.45	10.17
10021.64	RB 10031.40	149.37	26.70	10.62	5.81	2.74	5.59
10031.40	10092.80	0.69	0.48	1.63	0.03	0.32	1.44

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.55	9982.60	0.08	0.09	0.59	0.00	0.19	0.92
LB 9982.60	9992.36	282.33	40.72	12.02	10.99	4.17	6.93
9992.36	10002.12	747.55	67.18	9.76	29.09	6.88	11.13
10002.12	10011.88	751.75	67.41	9.76	29.25	6.91	11.15
10011.88	10021.64	641.15	62.40	10.22	24.95	6.39	10.28
10021.64	RB 10031.40	146.59	26.15	10.62	5.70	2.68	5.61
10031.40	10092.80	0.55	0.40	1.49	0.02	0.29	1.38

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.259

INPUT
Description:
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9949	1438.8	9961.1	1434.7	9966.7	1432.9	9972.7	1429.4	9980	1426.2
9988.9	1422.4	9999.9	1417.9	10000.6	1418.2	10004.6	1420	10011.6	1422.7
10011.7	1422.7	10018.8	1423.1	10019.1	1423.2	10019.2	1423.2	10019.4	1423.2
10072.5	1443.9								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9949	.06	9980	.06	10011.6	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980	10011.6	183.23	191.22	189.39	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9964.50	9980.00	0.87	0.46	1.58	0.03	0.32	1.90
LB 9980.00	9986.32	74.57	12.53	6.87	2.90	1.98	5.95
9986.32	9992.64	310.81	29.45	6.85	12.09	4.66	10.55
9992.64	9998.96	651.16	45.85	6.83	25.34	7.26	14.20
9998.96	10005.28	743.78	49.85	6.89	28.94	7.89	14.92
10005.28	RB 10011.60	394.22	33.82	6.77	15.34	5.35	11.66
10011.60	10042.05	394.59	47.46	17.83	15.35	2.77	8.31

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9964.50	9980.00	1.15	0.56	1.65	0.04	0.39	2.06
LB 9980.00	9986.32	77.36	12.98	6.87	3.01	2.05	5.96
9986.32	9992.64	311.67	29.91	6.85	12.13	4.73	10.42
9992.64	9998.96	647.05	46.31	6.83	25.18	7.33	13.97
9998.96	10005.28	738.11	50.30	6.89	28.72	7.96	14.67
10005.28	RB 10011.60	394.02	34.28	6.77	15.33	5.42	11.49
10011.60	10042.05	400.62	48.69	17.90	15.59	2.84	8.23

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.222

INPUT
Description:
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9937.2	1437.9	9951.9	1428.7	9963.3	1422.2	9969.7	1419.8	9979.3	1413.7
9983.7	1413.3	9985.6	1413.3	9987.5	1413.2	9987.5	1413.1	9992.6	1409.2
9997.9	1405.2	10015.9	1415.7	10022.2	1419.3	10049.9	1436.3		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9937.2	.06	9987.5	.06	10015.9	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.5	10015.9	258.66	271.45	280.51	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9962.35	9987.50	212.04	28.68	13.00	8.25	2.34	7.39
LB 9987.50	9993.18	312.29	30.30	7.25	12.15	5.33	10.31
9993.18	9998.86	839.61	54.17	7.03	32.67	9.54	15.50
9998.86	10004.54	774.14	50.25	6.58	30.12	8.85	15.41
10004.54	10010.22	354.18	31.43	6.58	13.78	5.53	11.27
10010.22	RB 10015.90	77.27	12.61	6.58	3.01	2.22	6.13
10015.90	10032.90	0.47	0.28	1.13	0.02	0.28	1.71

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9962.35	9987.50	214.48	29.07	13.03	8.35	2.38	7.38
LB 9987.50	9993.18	312.72	30.48	7.25	12.17	5.37	10.26
9993.18	9998.86	837.10	54.35	7.03	32.57	9.57	15.40
9998.86	10004.54	772.15	50.43	6.58	30.04	8.88	15.31
10004.54	10010.22	354.54	31.61	6.58	13.80	5.57	11.21
10010.22	RB 10015.90	78.46	12.79	6.58	3.05	2.25	6.13
10015.90	10032.90	0.55	0.31	1.17	0.02	0.31	1.78

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.171

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9938.5	1429.6	9941.7	1429.5	9954	1421.4	9967.6	1412.7	9973.3	1409.1
9978.6	1408	9989.5	1406	9992	1405.5	9993.2	1405.4	9995.1	1405.3
10004.1	1404.8	10006.2	1405	10010.9	1405.5	10016.6	1405	10029.4	1409.6
10032.8	1411.9	10035.5	1413.7	10046.8	1419.1	10047.6	1419.6	10057.3	1424.6
10057.7	1425	10067.8	1431.6	10068.5	1432.1	10069.4	1433	10076	1439.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9938.5	.06	9967.6	.06	10032.8	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967.6	10032.8	82.3	99.18	114.62	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.05	9967.60	0.19	0.25	1.06	0.01	0.28	0.73
LB 9967.60	9980.64	204.77	49.65	14.23	7.97	3.81	4.12
9980.64	9993.68	570.00	89.17	13.24	22.18	6.84	6.39
9993.68	10006.72	780.40	107.10	13.07	30.37	8.21	7.29
10006.72	10019.76	728.65	103.46	13.28	28.35	7.93	7.04
10019.76	RB 10032.80	284.16	60.64	14.35	11.06	4.65	4.69
10032.80	10054.40	1.83	1.41	2.47	0.07	0.68	1.30

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9953.05	9967.60	0.19	0.25	1.06	0.01	0.28	0.73
LB 9967.60	9980.64	204.76	49.65	14.23	7.97	3.81	4.12
9980.64	9993.68	570.00	89.17	13.24	22.18	6.84	6.39
9993.68	10006.72	780.41	107.10	13.07	30.37	8.21	7.29
10006.72	10019.76	728.66	103.45	13.28	28.35	7.93	7.04
10019.76	RB 10032.80	284.15	60.64	14.35	11.06	4.65	4.69
10032.80	10054.40	1.83	1.41	2.47	0.07	0.69	1.30

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.152

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9932	1428.1	9936.8	1427.9	9939.1	1427.9	9939.9	1427.9	9940.4	1427.9
9950.2	1422.4	9973.3	1410.5	9987.7	1403.1	9993.4	1402.8	10005.3	1402.7
10008.1	1405	10014	1410.3	10037.4	1431.8	10044.8	1438.3	10048	1439.1
10051	1439.8	10053.3	1439.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9932	.06	9973.3	.06	10014	.06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9973.3	10014	354.14	337.93	314.55	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9952.65	9973.30	1.25	0.76	1.93	0.05	0.44	1.65
LB 9973.30	9981.44	129.69	24.22	9.15	5.05	2.98	5.36
9981.44	9989.58	556.77	57.46	8.92	21.66	7.06	9.69
9989.58	9997.72	813.65	69.56	8.15	31.66	8.55	11.70
9997.72	10005.86	817.76	70.32	8.31	31.82	8.64	11.63
10005.86	RB 10014.00	249.80	38.38	10.83	9.72	4.72	6.51
10014.00	10033.65	1.07	0.64	1.60	0.04	0.54	1.67

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9952.65	9973.30	1.25	0.75	1.92	0.05	0.44	1.65
LB 9973.30	9981.44	129.62	24.20	9.15	5.04	2.97	5.36
9981.44	9989.58	556.78	57.44	8.92	21.66	7.06	9.69
9989.58	9997.72	813.71	69.55	8.15	31.66	8.54	11.70
9997.72	10005.86	817.83	70.31	8.31	31.82	8.64	11.63
10005.86	RB 10014.00	249.76	38.37	10.83	9.72	4.71	6.51
10014.00	10033.65	1.06	0.64	1.60	0.04	0.54	1.67

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3

REACH: 1 *RS: 1.088*

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9971.1	1431.1	9971.4	1431	9973.1	1429.7	9974	1429.9	9976.9	1427.7
9982.5	1414.6	9985.9	1406.9	9987	1404.5	9988.5	1400.5	9991.6	1400.5
10003.9	1400.2	10005.8	1400.7	10019.3	1402.8	10031.6	1404.6	10034.8	1405
10036.2	1405.4	10070.7	1420.8						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9971.1	.055	9985.9	.04	10034.8	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.9	10034.8	419.25	425.27	433.09	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9978.50	9985.90	0.01	0.02	0.30	0.00	0.14	0.39
LB 9985.90	9995.68	503.43	56.74	14.09	19.59	5.80	8.87
9995.68	10005.46	844.95	67.04	9.83	32.88	6.86	12.60
10005.46	10015.24	630.19	56.39	9.91	24.52	5.77	11.18
10015.24	10025.02	380.75	41.65	9.89	14.82	4.26	9.14
10025.02	RB 10034.80	193.00	27.69	9.88	7.51	2.83	6.97
10034.80	10052.75	17.67	6.28	5.80	0.69	1.17	2.81

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9978.50	9985.90	0.01	0.02	0.30	0.00	0.14	0.39
LB 9985.90	9995.68	503.40	56.76	14.09	19.59	5.80	8.87
9995.68	10005.46	844.82	67.06	9.83	32.87	6.86	12.60
10005.46	10015.24	630.15	56.41	9.91	24.52	5.77	11.17
10015.24	10025.02	380.81	41.67	9.89	14.82	4.26	9.14
10025.02	RB 10034.80	193.10	27.71	9.88	7.51	2.83	6.97
10034.80	10052.75	17.70	6.29	5.81	0.69	1.17	2.81

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 1.008

INPUT
Description:
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9959.3	1421.5	9961.9	1421.3	9962.6	1421.3	9967.4	1416.8	9984.1	1401.1
9989.6	1396	9993.1	1392.7	9999.9	1393.2	10008.1	1393.9	10021.7	1398.8
10026.8	1401	10036.9	1405.4	10045.5	1410.7	10051.4	1415		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9959.3	.065	9984.1	.055	10026.8	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.1	10026.8	99.77	112.77	114.71	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9971.70	9984.10	0.03	0.05	0.43	0.00	0.15	0.70
LB 9984.10	9992.64	253.46	36.40	11.68	9.86	4.26	6.96
9992.64	10001.18	953.01	71.74	8.74	37.08	8.40	13.28
10001.18	10009.72	824.70	65.57	8.67	32.09	7.68	12.58
10009.72	10018.26	440.95	45.88	9.08	17.16	5.37	9.61
10018.26	RB 10026.80	97.67	18.68	9.21	3.80	2.19	5.23
10026.80	10039.10	0.18	0.18	0.99	0.01	0.20	0.99

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9971.70	9984.10	0.03	0.04	0.42	0.00	0.15	0.70
LB 9984.10	9992.64	253.32	36.36	11.68	9.86	4.26	6.97
9992.64	10001.18	953.29	71.71	8.74	37.09	8.40	13.29
10001.18	10009.72	824.87	65.54	8.67	32.10	7.67	12.59
10009.72	10018.26	440.86	45.84	9.08	17.15	5.37	9.62

10018.26	RB 10026.80	97.45	18.64	9.21	3.79	2.18	5.23
10026.80	10039.10	0.17	0.17	0.98	0.01	0.20	0.99

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.986

INPUT
Description:
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9939	1418.8	9941.5	1418.7	9943.2	1417.8	9953.2	1412.3	9974.4	1399.9
9980.9	1396.1	9985.6	1392.6	9998.7	1392.6	10000.7	1392.6	10002.5	1392.6
10002.7	1392.6	10002.9	1392.7	10017.9	1395.9	10018.2	1395.9	10027.2	1397.7
10040.9	1409.5	10048.3	1415.1	10050.8	1416.7				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9939	.065	9974.4	.055	10027.2	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.4	10027.2	108.87	139.97	180.69	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9956.70	9974.40	0.10	0.14	0.80	0.00	0.20	0.74
LB 9974.40	9984.96	208.03	38.19	12.59	8.09	3.62	5.45
9984.96	9995.52	814.55	81.21	10.72	31.69	7.69	10.03
9995.52	10006.08	796.73	79.95	10.65	31.00	7.57	9.96
10006.08	10016.64	506.49	61.25	10.80	19.71	5.80	8.27
10016.64	RB 10027.20	234.90	38.58	10.77	9.14	3.65	6.09
10027.20	10039.00	9.20	3.94	3.99	0.36	1.30	2.34

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9956.70	9974.40	0.09	0.13	0.76	0.00	0.19	0.71
LB 9974.40	9984.96	207.20	37.96	12.59	8.06	3.60	5.46
9984.96	9995.52	815.59	80.99	10.72	31.73	7.67	10.07
9995.52	10006.08	797.69	79.73	10.65	31.04	7.55	10.01
10006.08	10016.64	506.37	61.03	10.80	19.70	5.78	8.30
10016.64	RB 10027.20	234.00	38.36	10.77	9.10	3.63	6.10
10027.20	10039.00	9.06	3.87	3.96	0.35	1.29	2.34

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.960

INPUT
Description:
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9906.6	1418	9909	1417.9	9938.5	1402.5	9940.4	1401.5	9941.3	1401.2
9953.6	1395.9	9954.8	1395.8	9958.3	1395.4	9977.1	1393.4	9988.1	1391.5
9992.9	1390.6	9994.8	1390.6	9998	1390.8	10001.9	1391.2	10007.6	1391.2
10009.2	1395.6	10015.1	1411.3	10021.9	1430.9				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9906.6	.065	9977.1	.055	10009.2	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.1	10009.2	157.45	165.22	153.7	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9941.85	9959.47	43.67	11.51	9.23	1.70	1.29	3.79
9959.47	9977.10	335.04	50.73	17.72	13.04	2.88	6.60
LB 9977.10	9983.52	297.92	28.06	6.51	11.59	4.37	10.62
9983.52	9989.94	434.60	35.20	6.52	16.91	5.48	12.35

9989.94	9996.36	576.31	41.58	6.48	22.42	6.48	13.86
9996.36	10002.78	545.21	40.14	6.44	21.21	6.25	13.58
10002.78	RB 10009.20	336.50	35.10	9.50	13.09	5.47	9.59
10009.20	10015.55	0.74	0.49	1.73	0.03	0.81	1.51

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9941.85	9959.47	45.21	11.86	9.27	1.76	1.33	3.81
9959.47	9977.10	338.39	51.42	17.72	13.17	2.92	6.58
LB 9977.10	9983.52	298.27	28.31	6.51	11.61	4.41	10.54
9983.52	9989.94	433.81	35.45	6.52	16.88	5.52	12.24
9989.94	9996.36	574.22	41.83	6.48	22.34	6.51	13.73
9996.36	10002.78	543.42	40.39	6.44	21.14	6.29	13.45
10002.78	RB 10009.20	335.90	35.35	9.50	13.07	5.51	9.50
10009.20	10015.55	0.78	0.51	1.77	0.03	0.84	1.51

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.928

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9949.2	1418	9955.6	1417.3	9964.6	1416.4	9973.5	1405.4	9983.9	1393.5
9989.1	1387.7	9992.1	1387.4	9996.6	1387.6	10005.6	1388.3	10019.6	1388.6
10027.2	1389.7	10029	1390.1	10038	1390.6	10043.8	1390.8	10045.9	1393.5
10054.8	1404.6	10064.7	1414.4	10070.6	1417.9	10073.2	1419.6		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9949.2	.055	9983.9	.04	10045.9	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.9	10045.9	401.51	402.26	405.3	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9966.55	9983.90	0.34	0.38	1.24	0.01	0.47	0.90
LB 9983.90	9996.30	515.34	69.72	15.01	20.05	5.62	7.39
9996.30	10008.70	724.19	79.29	12.43	28.18	6.40	9.13
10008.70	10021.10	637.49	73.43	12.42	24.80	5.92	8.68
10021.10	10033.50	436.04	58.65	12.51	16.97	4.73	7.44
10033.50	RB 10045.90	256.29	44.25	13.73	9.97	3.57	5.79
10045.90	10059.55	0.30	0.35	1.19	0.01	0.47	0.87

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9966.55	9983.90	0.33	0.37	1.22	0.01	0.46	0.90
LB 9983.90	9996.30	515.43	69.55	15.01	20.06	5.61	7.41
9996.30	10008.70	724.68	79.12	12.43	28.20	6.38	9.16
10008.70	10021.10	637.74	73.26	12.42	24.81	5.91	8.70
10021.10	10033.50	435.79	58.48	12.51	16.96	4.72	7.45

10033.50	RB 10045.90	255.74	44.08	13.73	9.95	3.55	5.80
10045.90	10059.55	0.29	0.34	1.18	0.01	0.46	0.87

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.852

INPUT
Description:
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9940.5	1407.8	9949.1	1403.2	9952.4	1401.5	9961.2	1395.7	9961.6	1395.5
9961.8	1395.4	9972.8	1389.5	9976.5	1387.6	9980.7	1387	9980.9	1387
9988.3	1385.3	9990.6	1384.8	9997.7	1384.5	10015.9	1383.9	10024.8	1389.1
10058.3	1408.7								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9940.5	.055	9972.8	.04	10024.8	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972.8	10024.8	456.51	481.23	489.86	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9956.65	9972.80	0.06	0.07	0.59	0.00	0.14	0.83
LB 9972.80	9983.20	157.07	22.54	10.96	6.11	2.17	6.97
9983.20	9993.60	525.60	45.88	10.59	20.45	4.41	11.46
9993.60	10004.00	724.22	55.22	10.41	28.18	5.31	13.11
10004.00	10014.40	805.60	58.86	10.41	31.35	5.66	13.69
10014.40	RB 10024.80	356.87	37.99	11.81	13.89	3.65	9.39
10024.80	10041.55	0.58	0.40	1.35	0.02	0.34	1.47

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9956.65	9972.80	0.08	0.09	0.62	0.00	0.17	0.89
LB 9972.80	9983.20	158.66	22.80	10.96	6.17	2.19	6.96
9983.20	9993.60	525.71	46.14	10.59	20.46	4.44	11.39
9993.60	10004.00	723.19	55.49	10.41	28.14	5.34	13.03
10004.00	10014.40	804.06	59.13	10.41	31.29	5.69	13.60
10014.40	RB 10024.80	357.66	38.25	11.81	13.92	3.68	9.35
10024.80	10041.55	0.64	0.43	1.37	0.03	0.37	1.51

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.761

INPUT
Description:
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9878.9	1400.2	9884.3	1397.5	9914.2	1383.4	9917	1382.4	9927.8	1382.6
9931.4	1382.6	9942.1	1382.6	9966.7	1382.7	9967.4	1382.5	9991.2	1378.4
9991.5	1378.4	9991.7	1378.4	9992.2	1378.4	10011.6	1379.3	10017.6	1384.3
10035.1	1399.1								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9878.9	.065	9966.7	.045	10017.6	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9966.7	10017.6	83.62	145.33	167.66	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9903.99	9916.53	14.09	6.09	5.66	0.55	1.17	2.31
9916.53	9929.07	106.42	28.22	12.57	4.14	2.25	3.77
9929.07	9941.61	99.56	27.09	12.54	3.87	2.16	3.68
9941.61	9954.16	97.76	26.79	12.54	3.80	2.14	3.65
9954.16	9966.70	93.90	26.15	12.54	3.65	2.09	3.59
LB 9966.70	9976.88	195.83	30.67	10.35	7.62	3.01	6.38
9976.88	9987.06	421.52	48.55	10.33	16.40	4.77	8.68
9987.06	9997.24	648.63	62.68	10.25	25.24	6.16	10.35
9997.24	10007.42	604.55	59.95	10.19	23.52	5.89	10.08
10007.42	RB 10017.60	287.65	40.98	11.99	11.19	4.03	7.02
10017.60	10026.35	0.09	0.12	0.71	0.00	0.23	0.70

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9916.53	9929.07	84.21	24.73	13.41	3.28	2.23	3.40
9929.07	9941.61	101.98	27.01	12.54	3.97	2.15	3.78
9941.61	9954.16	100.13	26.72	12.54	3.90	2.13	3.75
9954.16	9966.70	96.17	26.08	12.54	3.74	2.08	3.69
LB 9966.70	9976.88	198.23	30.61	10.35	7.71	3.01	6.48
9976.88	9987.06	427.19	48.49	10.33	16.62	4.76	8.81
9987.06	9997.24	657.68	62.62	10.25	25.59	6.15	10.50
9997.24	10007.42	612.93	59.89	10.19	23.85	5.88	10.23
10007.42	RB 10017.60	291.41	40.92	11.99	11.34	4.02	7.12
10017.60	10026.35	0.09	0.12	0.70	0.00	0.23	0.70

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.734

INPUT
Description:
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9919.7	1399.7	9928.1	1395.7	9962.2	1380.3	9977.4	1380.2	9977.8	1380.2
9978	1380.1	9980.3	1379.7	9993.8	1377.1	10007.1	1376.5	10016.3	1376.2
10023.09	1381.68	10027.1	1384.7	10045	1398.7	10055.1	1406.7		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9919.7	.065	9978	.045	10023.09	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978	10023.09	105.19	93.54	82.98	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9948.85	9963.42	29.75	10.21	7.38	1.16	1.49	2.91
9963.42	9978.00	166.85	37.74	14.60	6.49	2.59	4.42
LB 9978.00	9987.02	252.93	32.14	9.18	9.84	3.56	7.87
9987.02	9996.04	484.18	47.39	9.15	18.84	5.25	10.22
9996.04	10005.05	615.52	54.44	9.03	23.95	6.04	11.31
10005.05	10014.07	680.47	57.81	9.02	26.48	6.41	11.77
10014.07	RB 10023.09	339.01	41.13	10.95	13.19	4.56	8.24
10023.09	10039.09	1.28	0.88	1.92	0.05	0.58	1.45

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9948.85	9963.42	23.22	7.55	5.17	0.90	2.21	3.07
9963.42	9978.00	168.66	37.61	14.60	6.56	2.58	4.48
LB 9978.00	9987.02	253.06	32.05	9.18	9.85	3.55	7.90
9987.02	9996.04	485.13	47.30	9.15	18.88	5.25	10.26
9996.04	10005.05	616.97	54.36	9.03	24.01	6.03	11.35
10005.05	10014.07	682.17	57.73	9.02	26.54	6.40	11.82
10014.07	RB 10023.09	339.53	41.04	10.95	13.21	4.55	8.27
10023.09	10039.09	1.26	0.87	1.90	0.05	0.57	1.45

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.716

INPUT
Description:

Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9914.8	1396.2	9940.6	1386.6	9948.7	1383.5	9949.6	1383.3	9957	1382.3
9965.9	1381	9966	1381	9986.1	1376.7	9987.5	1376.3	9987.8	1376.3
9989.8	1375.6	10003.6	1375.7	10017.2	1375.9	10023.1	1378.8	10028.2	1381.7
10045.7	1391.5	10053.8	1396.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9914.8	.065	9965.9	.045	10028.2	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.9	10028.2	145.43	108.03	81.47	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9940.35	9965.90	8.40	5.69	8.92	0.33	0.64	1.48
LB 9965.90	9978.36	163.54	32.41	12.74	6.36	2.60	5.05
9978.36	9990.82	536.58	66.26	12.81	20.88	5.32	8.10
9990.82	10003.28	790.83	82.70	12.46	30.77	6.64	9.56
10003.28	10015.74	764.27	81.02	12.46	29.74	6.50	9.43
10015.74	RB 10028.20	306.13	48.89	13.90	11.91	3.92	6.26
10028.20	10041.00	0.25	0.31	1.21	0.01	0.29	0.81

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9940.35	9965.90	8.30	5.63	8.87	0.32	0.64	1.47
LB 9965.90	9978.36	163.16	32.32	12.74	6.35	2.59	5.05
9978.36	9990.82	536.60	66.17	12.81	20.88	5.31	8.11
9990.82	10003.28	791.20	82.61	12.46	30.79	6.63	9.58
10003.28	10015.74	764.61	80.93	12.46	29.75	6.50	9.45
10015.74	RB 10028.20	305.89	48.80	13.90	11.90	3.92	6.27
10028.20	10041.00	0.24	0.30	1.19	0.01	0.29	0.80

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.695

INPUT
Description:
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9961.8	1390.4	9980.7	1376.9	9986.5	1375	9989.7	1373.7	9991.8	1372.8
9993.9	1371.9	9996.4	1370.8	9999.8	1371.4	10008	1372.4	10013.86	1377.99
10015.9	1379.8	10018.7	1382.1	10018.8	1382.1	10020.2	1382	10044.7	1396

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9961.8	.065	9980.7	.045	10013.86	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980.7	10013.86	199.95	199.67	200.28	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9971.25	9980.70	10.67	3.64	3.92	0.42	1.14	2.93
LB 9980.70	9987.33	201.04	22.35	7.00	7.82	3.37	9.00
9987.33	9993.96	501.42	39.09	7.20	19.51	5.89	12.83
9993.96	10000.60	847.77	52.73	6.92	32.99	7.95	16.08
10000.60	10007.23	748.51	48.26	6.68	29.12	7.28	15.51
10007.23	RB 10013.86	259.16	28.62	8.88	10.08	4.31	9.06
10013.86	10029.28	1.43	0.80	1.79	0.06	0.59	1.80

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9971.25	9980.70	10.98	3.73	3.95	0.43	1.17	2.94
LB 9980.70	9987.33	202.34	22.54	7.00	7.87	3.40	8.98
9987.33	9993.96	501.53	39.29	7.20	19.51	5.92	12.76
9993.96	10000.60	846.13	52.93	6.92	32.92	7.98	15.99
10000.60	10007.23	747.49	48.46	6.68	29.09	7.31	15.42
10007.23	RB 10013.86	260.00	28.81	8.88	10.12	4.34	9.02
10013.86	10029.28	1.52	0.84	1.82	0.06	0.62	1.82

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.658

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9926.8	1390.3	9936.7	1384.7	9952	1376.5	9953.3	1375.8	9957.9	1373.1
9965.1	1372.5	9969.2	1372.1	9971	1372	9980.7	1371	9984.8	1370.8
9989.2	1370.5	9995.8	1369.4	10000.2	1368.7	10001.2	1368.5	10003.4	1370.4
10008.22	1374.8	10011.1	1377.3	10025.3	1390.1	10025.6	1390.2		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9926.8	.055	9957.9	.041	10008.22	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9957.91	10008.22	158.23	171.39	178.1	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9942.35	9957.90	25.92	8.30	6.22	1.01	1.54	3.12
LB 9957.90	9967.96	286.92	35.67	10.10	11.16	3.54	8.04
9967.96	9978.03	418.08	44.72	10.11	16.27	4.44	9.35
9978.03	9988.09	565.99	53.59	10.09	22.02	5.33	10.56
9988.09	9998.16	759.52	64.18	10.19	29.55	6.38	11.83
9998.16	RB 10008.22	511.60	54.99	12.52	19.91	5.46	9.30
10008.22	10016.91	1.97	1.16	2.16	0.08	0.71	1.70

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9942.35	9957.90	25.55	8.15	6.16	0.99	1.53	3.13
LB 9957.90	9967.96	285.79	35.39	10.10	11.12	3.52	8.08
9967.96	9978.03	417.55	44.44	10.11	16.25	4.42	9.40
9978.03	9988.09	566.27	53.31	10.09	22.03	5.30	10.62
9988.09	9998.16	760.99	63.90	10.19	29.61	6.35	11.91
9998.16	RB 10008.22	511.96	54.71	12.52	19.92	5.44	9.36
10008.22	10016.91	1.89	1.11	2.12	0.07	0.70	1.69

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.625

INPUT
Description:
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9922.4	1383.8	9925.8	1383.7	9925.8	1383.6	9940.9	1374	9941.5	1373.7
9966.6	1371.5	9979.4	1370.4	9982.1	1369.8	9988.4	1368.2	9999.1	1367.7
10010.6	1367.1	10017.8	1373.5	10019.9	1375.3	10028	1382.8	10036.4	1387.7

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9922.4	.07	9979.4	.05	10017.8	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.4	10017.8	168.24	142.94	118.26	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9933.80	9945.20	0.90	0.95	3.92	0.04	0.24	0.95
9945.20	9956.60	23.99	10.44	11.44	0.93	0.92	2.30
9956.60	9968.00	81.97	21.83	11.44	3.19	1.92	3.75
9968.00	9979.40	163.92	33.09	11.44	6.38	2.90	4.95
LB 9979.40	9987.08	323.64	33.00	7.90	12.59	4.30	9.81
9987.08	9994.76	524.06	43.67	7.73	20.39	5.69	12.00
9994.76	10002.44	586.82	46.64	7.69	22.83	6.07	12.58
10002.44	10010.12	651.49	49.66	7.69	25.35	6.47	13.12
10010.12	RB 10017.80	213.16	28.35	10.11	8.29	3.69	7.52
10017.80	10027.10	0.03	0.05	0.45	0.00	0.15	0.65

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9933.80	9945.20	1.13	1.10	3.96	0.04	0.28	1.03
9945.20	9956.60	25.47	10.89	11.44	0.99	0.96	2.34
9956.60	9968.00	83.98	22.28	11.44	3.27	1.95	3.77
9968.00	9979.40	166.04	33.53	11.44	6.46	2.94	4.95
LB 9979.40	9987.08	323.84	33.30	7.90	12.60	4.34	9.73
9987.08	9994.76	522.46	43.97	7.73	20.33	5.73	11.88
9994.76	10002.44	584.61	46.94	7.69	22.75	6.11	12.45
10002.44	10010.12	648.61	49.96	7.69	25.24	6.51	12.98
10010.12	RB 10017.80	213.82	28.65	10.11	8.32	3.73	7.46
10017.80	10027.10	0.04	0.06	0.49	0.00	0.19	0.71

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.598

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9952.6	1380.4	9968.4	1371.8	9971.4	1370.1	9973.4	1369.3	9979	1366.2
9981.1	1365.8	9988.1	1365.2	9991.5	1365.3	10001	1365.6	10009.9	1365.9
10010.2	1365.9	10010.6	1365.9	10015.5	1366.5	10025.2	1367.6	10027.9	1367.7
10032.6	1371.7	10040.8	1378.8	10041.1	1379	10062.8	1387.8		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9952.6	.07	9968.4	.05	10032.6	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.4	10032.6	105.79	81.25	47.74	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9960.50	9968.40	0.03	0.07	0.56	0.00	0.13	0.44
LB 9968.40	9981.24	246.48	45.89	14.28	9.59	3.57	5.37
9981.24	9994.08	747.27	85.63	12.87	29.08	6.67	8.73
9994.08	10006.92	713.17	83.21	12.85	27.75	6.48	8.57
10006.92	10019.76	588.54	74.29	12.91	22.90	5.79	7.92
10019.76	RB 10032.60	274.47	49.04	14.35	10.68	3.82	5.60
10032.60	10047.70	0.04	0.08	0.56	0.00	0.18	0.50

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)

9960.50	9968.40	0.03	0.06	0.54	0.00	0.13	0.44
LB 9968.40	9981.24	246.11	45.78	14.28	9.58	3.57	5.38
9981.24	9994.08	747.62	85.52	12.87	29.09	6.66	8.74
9994.08	10006.92	713.46	83.10	12.85	27.76	6.47	8.59
10006.92	10019.76	588.61	74.17	12.91	22.90	5.78	7.94
10019.76	RB 10032.60	274.14	48.93	14.35	10.67	3.81	5.60
10032.60	10047.70	0.04	0.07	0.55	0.00	0.18	0.49

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.583

INPUT
Description:
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9960.2	1380.6	9976.3	1370.9	9986.1	1365	9989.3	1364.9	9991	1364.4
9991.9	1364.4	9999.8	1364.3	10000.6	1364.3	10001.3	1364.5	10013.1	1366
10022.7	1365.8	10027.6	1365.7	10044.7	1368.7	10044.8	1368.7	10049.8	1371.2
10068.1	1380.5	10081.6	1387.2						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9960.2	.07	9976.3	.05	10049.8	.07

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.3	10049.8	102.64	90.97	68.16	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.25	9976.30	0.42	0.55	1.58	0.02	0.41	0.77
LB 9976.30	9991.00	389.66	70.55	16.41	15.16	4.80	5.52
9991.00	10005.70	828.42	106.33	14.76	32.23	7.23	7.79
10005.70	10020.40	604.86	88.03	14.76	23.54	5.99	6.87
10020.40	10035.10	546.40	82.95	14.82	21.26	5.64	6.59
10035.10	RB 10049.80	200.08	46.15	15.44	7.79	3.14	4.34
10049.80	10065.70	0.15	0.26	1.14	0.01	0.26	0.58

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.25	9976.30	0.41	0.53	1.55	0.02	0.40	0.77
LB 9976.30	9991.00	389.41	70.36	16.41	15.15	4.79	5.53
9991.00	10005.70	829.13	106.14	14.76	32.26	7.22	7.81
10005.70	10020.40	605.01	87.85	14.76	23.54	5.98	6.89
10020.40	10035.10	546.41	82.76	14.82	21.26	5.63	6.60
10035.10	RB 10049.80	199.49	45.96	15.44	7.76	3.13	4.34
10049.80	10065.70	0.14	0.25	1.11	0.01	0.25	0.58

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.565

INPUT
Description:
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9955.6	1380.4	9957.8	1379.7	9964.4	1377	9976.1	1372.3	9981.5	1368.9
9990.1	1363.3	9995.6	1363.3	10012.6	1363.4	10015.1	1364.3	10028.5	1368.1
10034.3	1369.3	10074.2	1389.6	10076.5	1390.7				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9955.6	.055	9981.5	.04	10028.5	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.5	10028.5	229.26	241.76	253.47	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.55	9981.50	0.09	0.10	0.65	0.00	0.17	0.91
LB 9981.50	9990.90	270.90	31.82	11.06	10.54	3.39	8.51
9990.90	10000.30	770.67	55.83	9.40	29.99	5.94	13.80
10000.30	10009.70	760.32	55.38	9.40	29.58	5.89	13.73
10009.70	10019.10	585.80	47.99	9.71	22.79	5.11	12.21
10019.10	RB 10028.50	175.15	23.31	9.77	6.82	2.48	7.51
10028.50	10052.50	7.07	3.18	5.66	0.27	0.57	2.22

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9968.55	9981.50	0.12	0.12	0.69	0.00	0.21	0.99
LB 9981.50	9990.90	272.46	32.20	11.06	10.60	3.43	8.46
9990.90	10000.30	768.60	56.21	9.40	29.91	5.98	13.67
10000.30	10009.70	758.34	55.76	9.40	29.51	5.93	13.60
10009.70	10019.10	585.30	48.37	9.71	22.77	5.15	12.10
10019.10	RB 10028.50	177.43	23.69	9.77	6.90	2.52	7.49
10028.50	10052.50	7.76	3.40	5.70	0.30	0.61	2.28

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.520

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9950.8	1378.3	9950.9	1378.2	9951.6	1377.3	9958	1373.1	9961.8	1370.7
9967	1368.1	9971.8	1365.3	9978.8	1361.2	9983	1359.9	9990.3	1359.4
10001.6	1359.6	10002.1	1359.6	10004	1360.1	10025.5	1365	10027.6	1365.3
10027.6	1365.4	10032.8	1370.5	10039.8	1376.2	10040.3	1376.6	10043.5	1379.4

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9950.8	.055	9971.8	.04	10027.6	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.8	10027.6	196.85	203.95	202.82	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9961.30	9971.80	0.02	0.03	0.36	0.00	0.09	0.62
LB 9971.80	9982.96	306.26	36.11	12.47	11.92	3.24	8.48
9982.96	9994.12	897.40	65.90	11.18	34.92	5.90	13.62
9994.12	10005.28	869.22	64.83	11.26	33.82	5.81	13.41
10005.28	10016.44	427.21	42.62	11.45	16.62	3.82	10.02
10016.44	RB 10027.60	69.89	14.42	11.51	2.72	1.29	4.85
10027.60	10035.55	0.00	0.00	0.12	0.00	0.04	0.32

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9961.30	9971.80	0.03	0.04	0.39	0.00	0.12	0.71
LB 9971.80	9982.96	307.66	36.46	12.47	11.97	3.27	8.44
9982.96	9994.12	895.14	66.24	11.18	34.83	5.94	13.51
9994.12	10005.28	867.16	65.17	11.26	33.74	5.84	13.31
10005.28	10016.44	428.14	42.96	11.45	16.66	3.85	9.97
10016.44	RB 10027.60	71.87	14.76	11.51	2.80	1.32	4.87
10027.60	10035.55	0.00	0.01	0.15	0.00	0.07	0.39

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.481

INPUT
Description:
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9941.1	1379.1	9947.8	1377.6	9953	1374.7	9961.5	1368.8	9971.7	1364.5
9974.8	1363.1	9987.6	1357.1	10000.2	1357.2	10001.7	1357.3	10003.5	1357.5
10022.5	1359.3	10036	1361.3	10036.8	1361.4	10036.9	1361.6	10037.6	1362.1
10039.2	1363.2	10047	1368.7	10062.9	1378				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9941.1	.055	9974.8	.04	10039.2	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.8	10039.2	504	502.03	501.45	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.95	9974.80	0.20	0.23	1.11	0.01	0.23	0.84
LB 9974.80	9987.68	296.82	44.79	14.22	11.55	3.48	6.63
9987.68	10000.56	877.74	82.52	12.88	34.15	6.41	10.64
10000.56	10013.44	726.71	73.81	12.94	28.28	5.73	9.85
10013.44	10026.32	480.91	57.66	12.96	18.71	4.48	8.34
10026.32	RB 10039.20	187.57	33.43	13.62	7.30	2.60	5.61
10039.20	10051.05	0.06	0.09	0.62	0.00	0.18	0.66

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9957.95	9974.80	0.31	0.33	1.21	0.01	0.32	0.96
LB 9974.80	9987.68	300.40	45.95	14.22	11.69	3.57	6.54
9987.68	10000.56	871.20	83.68	12.88	33.90	6.50	10.41
10000.56	10013.44	723.28	74.98	12.94	28.14	5.82	9.65
10013.44	10026.32	482.12	58.82	12.96	18.76	4.57	8.20
10026.32	RB 10039.20	192.58	34.59	13.62	7.49	2.69	5.57
10039.20	10051.05	0.11	0.14	0.71	0.00	0.27	0.77

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.386

INPUT
Description:
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9954.6	1368.8	9957	1368.6	9957.9	1368.5	9963.5	1366	9966.9	1364.4
9978.9	1358.1	9980.12	1357.44	9988.9	1352.8	9990.8	1351.9	9991	1351.9
9992.6	1351.9	10008.6	1352	10017.5	1353.8	10025.4	1355.4	10049.3	1358.3
10054.2	1358.7	10069.2	1362.9	10085	1367.3				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9954.6	.055	9980.12	.04	10025.4	.055

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980.12	10025.4	407.6	424.08	432.44	.1	.3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9967.36	9980.12	0.49	0.39	1.36	0.02	0.32	1.26
LB 9980.12	9989.18	202.97	27.55	10.24	7.90	3.04	7.37
9989.18	9998.23	695.35	55.33	9.23	27.06	6.11	12.57
9998.23	10007.29	707.27	55.47	9.06	27.52	6.13	12.75
10007.29	10016.34	570.26	49.09	9.21	22.19	5.42	11.62
10016.34	RB 10025.40	288.58	32.66	9.24	11.23	3.61	8.84
10025.40	10045.27	104.84	29.48	20.01	4.08	1.48	3.56
10045.27	10065.13	0.24	0.32	2.31	0.01	0.14	0.73

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9967.36	9980.12	1.31	0.78	1.69	0.05	0.65	1.69
LB 9980.12	9989.18	230.80	30.46	10.24	8.98	3.36	7.58
9989.18	9998.23	728.37	58.25	9.23	28.34	6.43	12.50
9998.23	10007.29	740.69	58.39	9.06	28.82	6.45	12.69
10007.29	10016.34	603.70	52.00	9.21	23.49	5.74	11.61
10016.34	RB 10025.40	265.13	35.57	12.25	10.32	3.93	7.45

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.306

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9856.2	1362.1	9856.3	1362.1	9859.2	1361.3	9872.2	1353.7	9873.5	1353.6
9883.6	1353.4	9885.6	1353.4	9885.8	1353.4	9887.2	1353.3	9911.6	1351.4
9925.3	1351.9	9934.7	1352.3	9941.9	1352.5	9947.8	1352.4	9952.7	1352.5
9978.9	1348.4	9979.2	1348.4	9979.6	1348.4	10001.5	1348	10013.4	1352
10016.4	1353	10047.7	1354.4	10077.6	1355.7	10079.3	1355.9	10088.6	1356.7
10094.6	1357.1	10100.5	1358						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9856.2	.055	9952.7	.04	10016.4	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9952.7	10016.4	271.38	347.27	389.79	.3	.5

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9875.50	9894.80	3.77	2.81	8.60	0.15	0.33	1.34
9894.80	9914.10	94.64	26.92	19.35	3.68	1.39	3.52
9914.10	9933.40	108.92	29.26	19.31	4.24	1.52	3.72
9933.40	9952.70	50.03	18.34	19.31	1.95	0.95	2.73
LB 9952.70	9965.44	137.36	23.78	12.90	5.34	1.87	5.78
9965.44	9978.18	461.07	49.18	12.90	17.94	3.86	9.37
9978.18	9990.92	728.88	64.44	12.75	28.36	5.06	11.31
9990.92	10003.66	765.72	66.61	12.86	29.79	5.23	11.50
10003.66	RB 10016.40	217.97	31.90	13.44	8.48	2.50	6.83
10016.40	10044.43	1.64	1.53	8.28	0.06	0.18	1.07

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9933.40	9952.70	58.04	18.82	18.89	2.26	1.06	3.08
LB 9952.70	9965.44	157.89	25.38	12.90	6.14	1.99	6.22
9965.44	9978.18	501.57	50.78	12.90	19.52	3.99	9.88
9978.18	9990.92	783.08	66.04	12.75	30.47	5.18	11.86
9990.92	10003.66	821.57	68.21	12.86	31.97	5.35	12.05
10003.66	RB 10016.40	243.90	33.50	13.44	9.49	2.63	7.28
10016.40	10044.43	3.96	2.63	8.94	0.15	0.30	1.50

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.240

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9771.8	1357.4	9800.5	1351.3	9806.5	1350.1	9807.4	1350	9819.5	1348.9
9829.2	1348.2	9837.8	1347.6	9844.7	1346.1	9845.9	1345.9	9847.6	1346.1
9861.3	1347.3	9870.4	1347.8	9871.6	1347.8	9874.2	1347.8	9885.4	1347.9
9891.6	1347.9	9904.8	1348.6	9908.4	1348.8	9913.9	1349	9921.9	1349.1
9934.1	1349.2	9954.7	1349.2	9969	1349.1	9979.1	1349	9979.3	1349
9980.1	1348.8	10000.1	1343.6	10012.7	1345.9	10014.5	1346.3	10020.1	1346.6
10042.3	1347.5	10042.4	1347.5	10048	1347.1	10049.3	1346.9	10050.5	1346.7
10052.4	1346.3	10055.8	1346.1	10076.6	1345.5	10088.3	1347.5	10090.7	1348
10097.4	1348.4	10115.9	1349.5	10121.1	1351.7	10156.1	1362.3	10172.1	1366.7

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9771.8	.055	9829.2	.04	9870.4	.05	9979.1	.04	10042.4	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.1	10042.4	253.46	291.51	314.13	.6	.8

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9813.26	9833.99	31.36	13.46	18.49	1.22	0.73	2.33
9833.99	9854.72	287.74	52.16	20.96	11.20	2.52	5.52
9854.72	9875.45	163.99	37.70	20.77	6.38	1.82	4.35
9875.45	9896.18	82.47	28.06	20.74	3.21	1.35	2.94
9896.18	9916.91	21.02	12.36	20.75	0.82	0.60	1.70
9916.91	9937.64	1.45	2.49	20.73	0.06	0.12	0.58
9937.64	9958.37	0.47	1.27	20.73	0.02	0.06	0.37
9958.37	9979.10	2.45	3.40	20.73	0.10	0.16	0.72
LB 9979.10	9991.76	106.24	23.36	13.07	4.13	1.85	4.55
9991.76	10004.42	526.15	60.90	13.01	20.47	4.81	8.64
10004.42	10017.08	347.16	47.21	12.84	13.51	3.73	7.35
10017.08	10029.74	183.42	32.02	12.67	7.14	2.53	5.73
10029.74	RB 10042.40	125.22	25.47	12.67	4.87	2.01	4.92
10042.40	10068.34	355.67	74.38	26.04	13.84	2.87	4.78
10068.34	10094.28	321.05	70.09	26.17	12.49	2.70	4.58
10094.28	10120.22	14.11	9.17	17.60	0.55	0.52	1.54

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9854.72	9875.45	149.11	31.22	17.91	5.80	2.02	4.78
9875.45	9896.18	143.90	35.69	20.74	5.60	1.72	4.03
9896.18	9916.91	54.74	19.99	20.75	2.13	0.96	2.74
9916.91	9937.64	17.61	10.12	20.73	0.69	0.49	1.74
9937.64	9958.37	14.22	8.90	20.73	0.55	0.43	1.60
9958.37	9979.10	20.35	11.03	20.73	0.79	0.53	1.84
LB 9979.10	9991.76	174.29	28.02	13.07	6.78	2.21	6.22
9991.76	10004.42	720.83	65.56	13.01	28.05	5.18	11.00
10004.42	10017.08	492.06	51.87	12.84	19.15	4.10	9.49
10017.08	10029.74	278.70	36.68	12.67	10.84	2.90	7.60
10029.74	RB 10042.40	200.74	30.12	12.67	7.81	2.38	6.66
10042.40	10068.34	303.46	52.50	21.34	11.81	2.98	5.78

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.185

INPUT
Description:
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9933.1	1351.4	9943.8	1349.3	9968.8	1344	9975.2	1342.7	9978.3	1341.9
9988.6	1339.6	9995.7	1338	9999.4	1337.3	10003.6	1338	10025.3	1341.9
10027.7	1342.4	10033.7	1343	10042.7	1344	10081.4	1348.2	10084.3	1348.2
10089	1348.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

9933.1 .055 9968.8 .04 10042.7 .05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9968.8 10042.7 219 214.45 180.92 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9950.95	9968.80	0.04	0.06	0.78	0.00	0.08	0.63
LB 9968.80	9983.58	150.55	26.03	15.14	5.86	1.76	5.78
9983.58	9998.36	883.34	75.22	15.13	34.37	5.09	11.74
9998.36	10013.14	1088.44	84.99	15.01	42.35	5.75	12.81
10013.14	10027.92	391.06	46.01	15.03	15.22	3.11	8.50
10027.92	RB 10042.70	56.48	14.35	14.86	2.20	0.97	3.94
10042.70	10065.85	0.09	0.12	1.50	0.00	0.08	0.70

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9950.95	9968.80	0.06	0.08	0.81	0.00	0.11	0.75
LB 9968.80	9983.58	152.80	26.44	15.14	5.95	1.79	5.78
9983.58	9998.36	881.28	75.64	15.13	34.29	5.12	11.65
9998.36	10013.14	1084.75	85.40	15.01	42.21	5.78	12.70
10013.14	10027.92	392.42	46.42	15.03	15.27	3.14	8.45
10027.92	RB 10042.70	58.55	14.76	14.86	2.28	1.00	3.97
10042.70	10065.85	0.14	0.16	1.53	0.01	0.11	0.84

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION RIVER: Unnamed Wash 3
REACH: 1 RS: 0.144

INPUT
Description:
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9952	1346.9	9959.6	1346.8	9963.9	1346.8	9973.8	1346.5	9986.9	1338.1
9991.7	1335	9991.8	1335	9991.9	1335	10006.5	1336.3	10022.2	1336.1
10031.6	1336.1	10041	1340.4	10041.7	1340.8	10047.3	1341.1	10056.1	1341.6
10071.8	1342.2	10076.5	1342.4	10080.1	1342.7				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9952	.055	9986.9	.04	10041	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9986.9 10041 0 0 0 .1 .3

FLOW DISTRIBUTION OUTPUT Profile #Floodplain

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.45	9986.90	17.24	5.21	4.79	0.67	1.29	3.31
LB 9986.90	9997.72	599.13	52.56	11.76	23.31	4.86	11.40
9997.72	10008.54	598.91	50.90	10.85	23.30	4.70	11.77
10008.54	10019.36	553.21	48.47	10.82	21.53	4.48	11.41
10019.36	10030.18	573.99	49.55	10.82	22.33	4.58	11.58
10030.18	RB 10041.00	227.46	29.40	11.76	8.85	2.72	7.74
10041.00	10060.55	0.06	0.07	0.57	0.00	0.14	0.85

FLOW DISTRIBUTION OUTPUT Profile #Method 1

Left Sta (ft)	Right Sta (ft)	Flow (cfs)	Area (sq ft)	W.P. (ft)	% Conv.	Hydr D. (ft)	Velocity (ft/s)
9969.45	9986.90	17.24	5.21	4.79	0.67	1.29	3.31
LB 9986.90	9997.72	599.12	52.56	11.76	23.31	4.86	11.40
9997.72	10008.54	598.90	50.90	10.85	23.30	4.70	11.77
10008.54	10019.36	553.21	48.47	10.82	21.53	4.48	11.41
10019.36	10030.18	573.99	49.55	10.82	22.33	4.58	11.58
10030.18	RB 10041.00	227.48	29.40	11.76	8.85	2.72	7.74
10041.00	10060.55	0.06	0.07	0.57	0.00	0.14	0.85

SUMMARY OF MANNING'S N VALUES

River:Unnamed Wash 3

Reach	River Sta.	n1	n2	n3	n4	n5
1	4.540	.05	.045	.05		
1	4.464	.05	.045	.05		
1	4.428	.06	.05	.06		
1	4.417	.06	.05	.06		
1	4.399	.06	.05	.06		
1	4.379	.05	.045	.05		
1	4.338	.05	.045	.05		
1	4.289	.05	.045	.05		
1	4.229	.06	.05	.06		
1	4.197	.06	.05	.06		
1	4.177	.06	.05	.06		
1	4.145	.05	.045	.05		
1	4.110	.05	.045	.05		
1	4.013	.05	.045	.05		
1	3.921	.05	.045	.05		
1	3.826	.05	.045	.05		
1	3.731	.05	.045	.05		
1	3.649	.05	.045	.05		
1	3.561	.05	.045	.05		
1	3.520	.065	.05	.065		
1	3.509	.065	.05	.065		
1	3.497	.065	.05	.065		
1	3.487	.065	.05	.065		
1	3.460	.05	.04	.05		
1	3.426	.05	.04	.05		
1	3.412	.06	.045	.06		
1	3.370	.06	.045	.06		
1	3.351	.06	.045	.06		
1	3.319	.06	.045	.06		
1	3.309	.05	.04	.05		
1	3.257	.05	.04	.05		
1	3.168	.06	.045	.06		
1	3.144	.06	.045	.06		
1	3.114	.05	.04	.05		
1	3.061	.065	.05	.065		
1	3.042	.065	.05	.065		
1	3.015	.065	.05	.065		
1	2.984	.05	.04	.05		
1	2.916	.05	.04	.05		
1	2.850	.05	.04	.05		
1	2.779	.05	.04	.05		
1	2.677	.05	.04	.05		
1	2.581	.05	.04	.05		
1	2.522	.05	.04	.05		
1	2.471	.05	.04	.05		
1	2.421	.05	.04	.05		
1	2.315	.05	.04	.05		
1	2.233	.05	.04	.05		
1	2.118	.06	.045	.06		
1	2.050	.06	.045	.06		
1	2.011	.06	.045	.06		
1	1.973	.06	.045	.06		
1	1.944	.05	.04	.05		
1	1.872	.05	.04	.05		
1	1.784	.05	.04	.05		
1	1.690	.05	.04	.05		
1	1.641	.05	.04	.05		
1	1.600	.05	.04	.05		
1	1.563	.05	.04	.05		
1	1.537	.05	.04	.05		
1	1.519	.05	.04	.05		
1	1.497	.05	.04	.05		
1	1.481	.05	.04	.05		
1	1.425	.07	.07	.07		
1	1.385	.07	.07	.07		
1	1.356	.07	.07	.07		
1	1.331	.07	.07	.07		
1	1.304	.06	.06	.06		
1	1.259	.06	.06	.06		
1	1.222	.06	.06	.06		
1	1.171	.06	.06	.06		
1	1.152	.06	.06	.06		
1	1.088	.055	.04	.055		
1	1.008	.065	.055	.065		
1	0.986	.065	.055	.065		
1	0.960	.065	.055	.065		
1	0.928	.055	.04	.055		
1	0.852	.055	.04	.055		
1	0.761	.065	.045	.065		
1	0.734	.065	.045	.065		
1	0.716	.065	.045	.065		
1	0.695	.065	.045	.065		
1	0.658	.055	.04	.055		
1	0.625	.07	.05	.07		
1	0.598	.07	.05	.07		

1	0.583	.07	.05	.07		
1	0.565	.055	.04	.055		
1	0.520	.055	.04	.055		
1	0.481	.055	.04	.055		
1	0.386	.055	.04	.055		
1	0.306	.055	.04	.05		
1	0.240	.055	.04	.05	.04	.05
1	0.185	.055	.04	.05		
1	0.144	.055	.04	.05		

SUMMARY OF REACH LENGTHS

River: Unnamed Wash 3

Reach	River Sta.	Left	Channel	Right
1	4.540	408.34	403.08	393.77
1	4.464	177.57	190.3	196.89
1	4.428	53.35	59.8	61.25
1	4.417	58.11	95.09	108.36
1	4.399	88.85	100.95	108.28
1	4.379	227.3	216.77	209.09
1	4.338	271.97	262.62	247.96
1	4.289	306.45	313.66	311.67
1	4.229	188.63	169.51	127.27
1	4.197	110.53	106.77	95.7
1	4.177	164.5	170.2	145.4
1	4.145	179.55	182.46	183.66
1	4.110	512.17	510.52	514.71
1	4.013	481.7	486.09	518.09
1	3.921	494.14	502.61	500.07
1	3.826	508.81	500.95	474.83
1	3.731	432.61	436.4	445.33
1	3.649	465.68	461.55	451.4
1	3.561	221.16	216.34	209.79
1	3.520	76.16	58.86	41.79
1	3.509	104.94	63.79	34.34
1	3.497	38.64	55.48	105.72
1	3.487	114.49	139.74	166.73
1	3.460	172.73	177.76	178.28
1	3.426	73.18	76.71	82.91
1	3.412	207.83	223.65	246
1	3.370	106.44	99.43	88.46
1	3.351	191.05	166.22	65.92
1	3.319	56.28	54.85	46.62
1	3.309	270.9	271.68	267.41
1	3.257	495.12	470.73	450.92
1	3.168	139.5	129.56	97.8
1	3.144	150.57	159	103.09
1	3.114	240.73	278.7	300.45
1	3.061	67.94	99.79	103.3
1	3.042	56.38	140.45	173.46
1	3.015	135.02	167	183.72
1	2.984	366.88	356.38	343.69
1	2.916	343.88	351.81	322.51
1	2.850	373.3	372.73	359.17
1	2.779	552.93	540.36	529.03
1	2.677	489.85	503.68	530.4
1	2.581	339.76	312.29	300.58
1	2.522	237.55	269.05	271.63
1	2.471	245.42	266.83	265.48
1	2.421	580.62	555.18	525.18
1	2.315	422.21	433.8	428.7
1	2.233	614.99	606.28	562.41
1	2.118	332.45	358.9	377.71
1	2.050	134.46	208.41	213.85
1	2.011	224.53	202.84	151.3
1	1.973	162.7	149.61	116.02
1	1.944	387.27	379.74	373.76
1	1.872	470.43	467.66	470.55
1	1.784	493.73	496.9	499.61
1	1.690	250.6	257.37	261.1
1	1.641	192.06	214.61	220.91
1	1.600	119.2	196.07	218.03
1	1.563	131.38	140.13	122.93
1	1.537	108.63	92.19	78.51
1	1.519	101.14	117.38	143.89
1	1.497	69.49	82.02	91.23
1	1.481	304.34	297.11	288.98
1	1.425	203.47	210.84	195.99
1	1.385	172.59	154.51	133.59
1	1.356	145.83	132.08	121.17
1	1.331	161.17	142.49	135.88
1	1.304	238.08	239.31	232.98
1	1.259	183.23	191.22	189.39
1	1.222	258.66	271.45	280.51
1	1.171	82.3	99.18	114.62
1	1.152	354.14	337.93	314.55
1	1.088	419.25	425.27	433.09
1	1.008	99.77	112.77	114.71
1	0.986	108.87	139.97	180.69
1	0.960	157.45	165.22	153.7

1	0.928	401.51	402.26	405.3
1	0.852	456.51	481.23	489.86
1	0.761	83.62	145.33	167.66
1	0.734	105.19	93.54	82.98
1	0.716	145.43	108.03	81.47
1	0.695	199.95	199.67	200.28
1	0.658	158.23	171.39	178.1
1	0.625	168.24	142.94	118.26
1	0.598	105.79	81.25	47.74
1	0.583	102.64	90.97	68.16
1	0.565	229.26	241.76	253.47
1	0.520	196.85	203.95	202.82
1	0.481	504	502.03	501.45
1	0.386	407.6	424.08	432.44
1	0.306	271.38	347.27	389.79
1	0.240	253.46	291.51	314.13
1	0.185	219	214.45	180.92
1	0.144	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Unnamed Wash 3

Reach	River Sta.	Contr.	Expan.
1	4.540	.1	.3
1	4.464	.1	.3
1	4.428	.1	.3
1	4.417	.1	.3
1	4.399	.1	.3
1	4.379	.1	.3
1	4.338	.1	.3
1	4.289	.1	.3
1	4.229	.1	.3
1	4.197	.1	.3
1	4.177	.1	.3
1	4.145	.1	.3
1	4.110	.1	.3
1	4.013	.1	.3
1	3.921	.1	.3
1	3.826	.1	.3
1	3.731	.1	.3
1	3.649	.1	.3
1	3.561	.1	.3
1	3.520	.1	.3
1	3.509	.6	.8
1	3.497	.3	.5
1	3.487	.6	.8
1	3.460	.1	.3
1	3.426	.1	.3
1	3.412	.3	.5
1	3.370	.3	.5
1	3.351	.1	.3
1	3.319	.1	.3
1	3.309	.1	.3
1	3.257	.1	.3
1	3.168	.1	.3
1	3.144	.3	.5
1	3.114	.1	.3
1	3.061	.1	.3
1	3.042	.1	.3
1	3.015	.6	.8
1	2.984	.3	.5
1	2.916	.1	.3
1	2.850	.1	.3
1	2.779	.1	.3
1	2.677	.1	.3
1	2.581	.1	.3
1	2.522	.1	.3
1	2.471	.1	.3
1	2.421	.1	.3
1	2.315	.1	.3
1	2.233	.1	.3
1	2.118	.1	.3
1	2.050	.3	.5
1	2.011	.1	.3
1	1.973	.1	.3
1	1.944	.1	.3
1	1.872	.1	.3
1	1.784	.1	.3
1	1.690	.1	.3
1	1.641	.1	.3
1	1.600	.1	.3
1	1.563	.6	.8
1	1.537	.1	.3
1	1.519	.1	.3
1	1.497	.1	.3
1	1.481	.1	.3
1	1.425	.1	.3
1	1.385	.1	.3
1	1.356	.1	.3
1	1.331	.1	.3

1	1.304	.1	.3
1	1.259	.1	.3
1	1.222	.1	.3
1	1.171	.1	.3
1	1.152	.1	.3
1	1.088	.1	.3
1	1.008	.1	.3
1	0.986	.1	.3
1	0.960	.1	.3
1	0.928	.1	.3
1	0.852	.1	.3
1	0.761	.1	.3
1	0.734	.1	.3
1	0.716	.1	.3
1	0.695	.1	.3
1	0.658	.1	.3
1	0.625	.1	.3
1	0.598	.1	.3
1	0.583	.1	.3
1	0.565	.1	.3
1	0.520	.1	.3
1	0.481	.1	.3
1	0.386	.1	.3
1	0.306	.3	.5
1	0.240	.6	.8
1	0.185	.1	.3
1	0.144	.1	.3

APPENDIX M: APPROXIMATE METHOD CALCULATIONS

Tributary 1 to Unnamed Wash 1 – Approximate Method Reach

Tributary 1 to Unnamed Wash 1 - Approximate Method Section A-A
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 1 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0136	ft/ft
Discharge	860	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,684.92	ft
Elevation Range	1,681.83 to 1,691.00	
Flow Area	122.8	ft²
Wetted Perimeter	59.70	ft
Top Width	59.11	ft
Actual Depth	3.09	ft
Critical Elevation	1,684.66	ft
Critical Slope	0.0189	ft/ft
Velocity	7.01	ft/s
Velocity Head	0.76	ft
Specific Energy	1,685.68	ft
Froude Number	0.86	
Flow Type	*Subcritical*	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+33.65	0.050
0+33.65	1+25.30	0.040
1+25.30	1+54.40	0.050

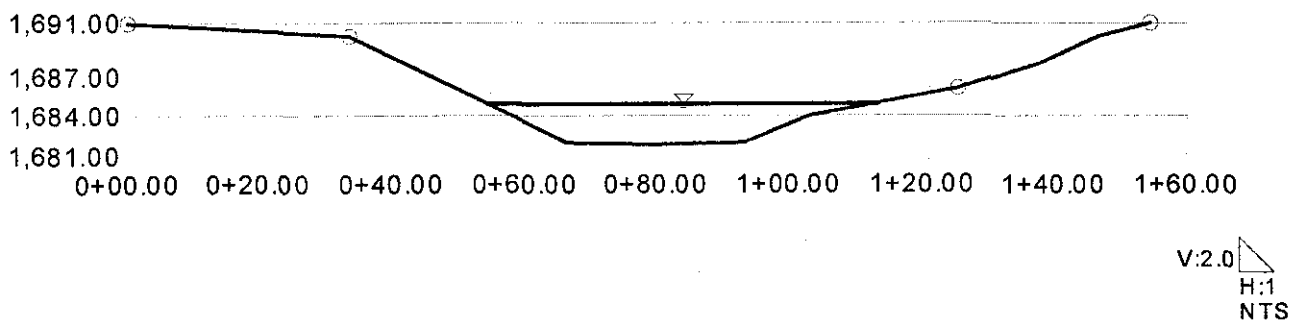
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,691.00
0+33.65	1,690.00
0+66.16	1,682.00
0+79.50	1,681.83
0+93.42	1,682.00
1+03.37	1,684.00
1+25.30	1,686.00
1+37.54	1,688.00
1+46.76	1,690.00
1+54.40	1,691.00

Tributary 1 to Unnamed Wash 1 - Approximate Method Section A-A
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 1 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0136	ft/ft
Water Surface Elevation	1,684.92	ft
Elevation Range	1,681.83 to 1,691.00	
Discharge	860	cfs



Tributary 1 to Unnamed Wash 1 - Approximate Method Section B-B
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 1 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0125	ft/ft
Discharge	860	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.046	
Water Surface Elevation	977.28	ft
Elevation Range	973.20 to 987.20	
Flow Area	164.4	ft²
Wetted Perimeter	95.57	ft
Top Width	94.97	ft
Actual Depth	4.08	ft
Critical Elevation	976.75	ft
Critical Slope	0.0262	ft/ft
Velocity	5.23	ft/s
Velocity Head	0.43	ft
Specific Energy	977.70	ft
Froude Number	0.70	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
1+00.00	1+68.00	0.050
1+68.00	2+10.90	0.040
2+10.90	2+90.90	0.050

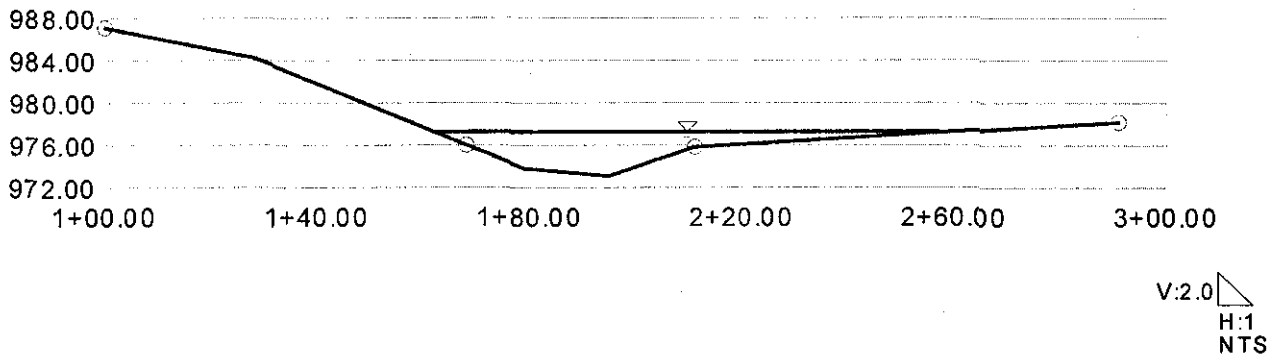
Natural Channel Points

Station (ft)	Elevation (ft)
1+00.00	987.20
1+28.40	984.20
1+68.00	976.00
1+78.80	973.90
1+95.00	973.20
2+10.90	975.90
2+90.90	978.30

Tributary 1 to Unnamed Wash 1 - Approximate Method Section B-B
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 1 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.046	
Slope	0.0125	ft/ft
Water Surface Elevation	977.28	ft
Elevation Range	973.20 to 987.20	
Discharge	860	cfs



Tributary 1 to Unnamed Wash 1 - Approximate Method Section C-C
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 1 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0125	ft/ft
Discharge	860	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.042	
Water Surface Elevation	985.90	ft
Elevation Range	982.00 to 989.50	
Flow Area	162.0	ft²
Wetted Perimeter	103.51	ft
Top Width	101.87	ft
Actual Depth	3.90	ft
Critical Elevation	985.51	ft
Critical Slope	0.0233	ft/ft
Velocity	5.31	ft/s
Velocity Head	0.44	ft
Specific Energy	986.33	ft
Froude Number	0.74	
Flow Type	Subcritical	

Calculation Messages:
Flow is divided.

Roughness Segments		
Start Station	End Station	Mannings Coefficient
1+00.00	1+73.70	0.050
1+73.70	2+55.00	0.040
2+55.00	3+47.70	0.050

Natural Channel Points	
Station (ft)	Elevation (ft)
1+00.00	989.50
1+38.40	989.10
1+55.20	985.20
1+73.70	985.90
1+81.10	983.30
2+17.00	985.60
2+24.90	982.60
2+38.10	982.00

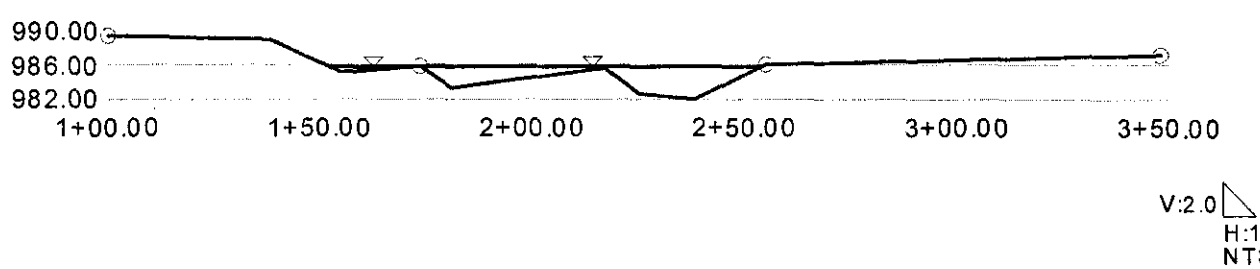
Tributary 1 to Unnamed Wash 1 - Approximate Method Section C-C
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
2+55.00	986.10
3+47.70	987.30

Tributary 1 to Unnamed Wash 1 - Approximate Method Section C-C
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 1 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.042
Slope	0.0125 ft/ft
Water Surface Elevation	985.90 ft
Elevation Range	982.00 to 989.50
Discharge	860 cfs



Unnamed Wash 2 – Approximate Method Reach

Unnamed Wash 2 - Approximate Method Section A-A
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 2 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0220	ft/ft
Discharge	1,670	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,865.59	ft
Elevation Range	1,862.00 to 1,880.00	
Flow Area	155.2	ft²
Wetted Perimeter	56.91	ft
Top Width	55.66	ft
Actual Depth	3.59	ft
Critical Elevation	1,865.86	ft
Critical Slope	0.0167	ft/ft
Velocity	10.76	ft/s
Velocity Head	1.80	ft
Specific Energy	1,867.39	ft
Froude Number	1.14	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+44.58	0.050
0+44.58	1+10.98	0.040
1+10.98	1+29.87	0.050

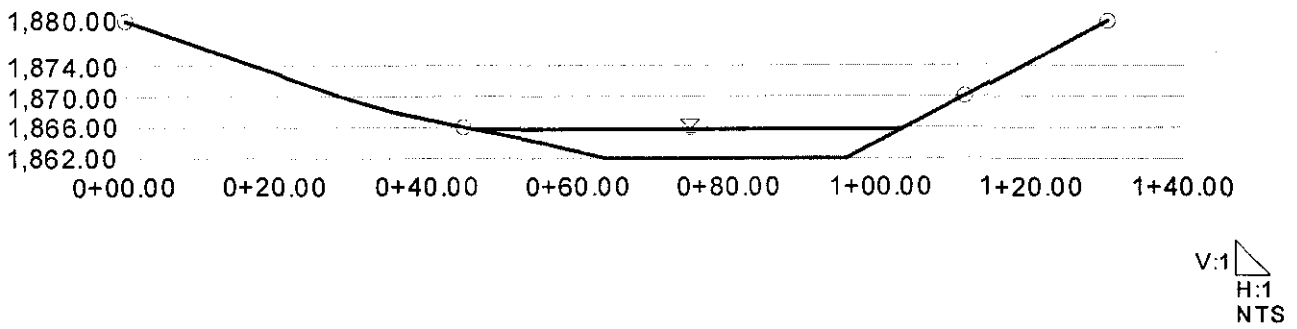
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,880.00
0+28.19	1,870.00
0+35.15	1,868.00
0+44.58	1,866.00
0+55.22	1,864.00
0+63.57	1,862.00
0+95.49	1,862.00
1+10.98	1,870.00
1+29.87	1,880.00

Unnamed Wash 2 - Approximate Method Section A-A
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 2 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0220	ft/ft
Water Surface Elevation	1,865.59	ft
Elevation Range	1,862.00 to 1,880.00	
Discharge	1,670	cfs



Unnamed Wash 2 - Approximate Method Section B-B
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 2 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0293	ft/ft
Discharge	1,670	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,893.78	ft
Elevation Range	1,890.00 to 1,900.00	
Flow Area	138.7	ft²
Wetted Perimeter	53.25	ft
Top Width	52.39	ft
Actual Depth	3.78	ft
Critical Elevation	1,894.35	ft
Critical Slope	0.0165	ft/ft
Velocity	12.04	ft/s
Velocity Head	2.25	ft
Specific Energy	1,896.04	ft
Froude Number	1.30	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+16.46	0.050
0+16.46	0+70.50	0.040
0+70.50	*1+01.03*	*0.050*

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	*1,900.00*
0+05.65	1,898.00
0+11.92	1,896.00
0+16.46	1,894.00
0+24.40	1,892.00
0+36.32	1,890.00
0+54.92	1,890.00
0+63.22	1,892.00
0+70.50	1,894.00
0+79.06	1,896.00
0+91.62	1,898.00

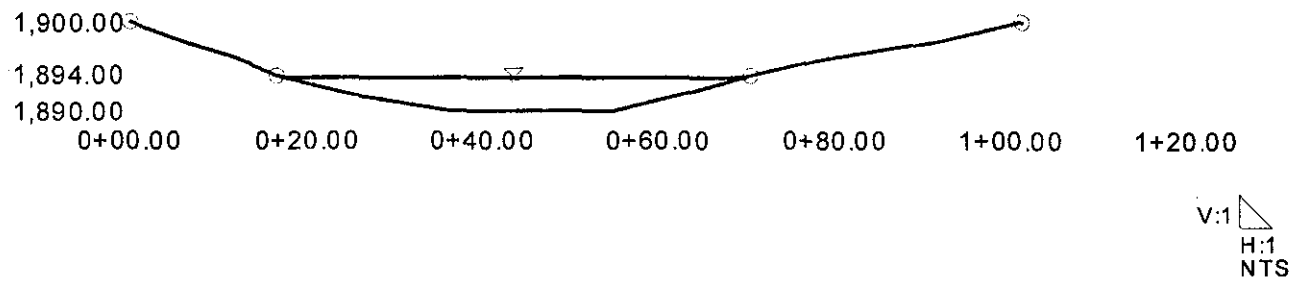
Unnamed Wash 2 - Approximate Method Section B-B
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
1+01.03	1,900.00

Unnamed Wash 2 - Approximate Method Section B-B
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 2 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0293	ft/ft
Water Surface Elevation	1,893.78	ft
Elevation Range	1,890.00 to 1,900.00	
Discharge	1,670	cfs



Unnamed Wash 2 - Approximate Method Section C-C
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 2 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0189	ft/ft
Discharge	1,670	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	992.67	ft
Elevation Range	988.30 to 1,024.70	
Flow Area	149.3	ft²
Wetted Perimeter	46.06	ft
Top Width	43.87	ft
Actual Depth	4.37	ft
Critical Elevation	992.85	ft
Critical Slope	0.0164	ft/ft
Velocity	11.19	ft/s
Velocity Head	1.94	ft
Specific Energy	994.62	ft
Froude Number	1.07	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
1+00.00	1+98.00	0.050
1+98.00	2+80.90	0.040
2+80.90	3+51.20	0.050

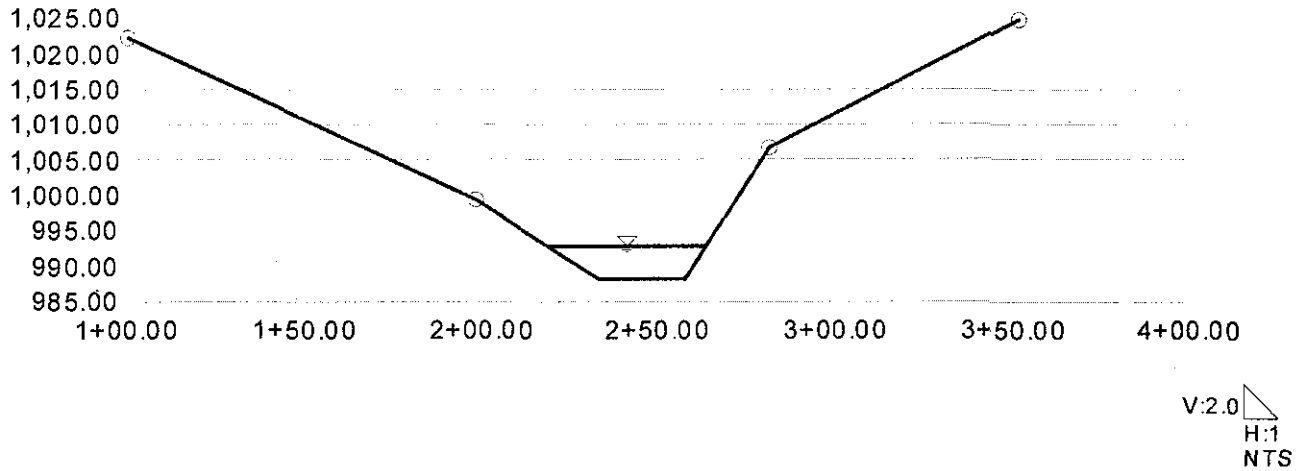
Natural Channel Points

Station (ft)	Elevation (ft)
1+00.00	1,022.20
1+98.00	999.30
2+33.00	988.30
2+57.40	988.30
2+80.90	1,006.80
3+51.20	1,024.70

Unnamed Wash 2 - Approximate Method Section C-C
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 2 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0189	ft/ft
Water Surface Elevation	992.67	ft
Elevation Range	988.30 to 1,024.70	
Discharge	1,670	cfs



Unnamed Wash 2 - Approximate Method Section D-D
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 2 - Approximate Method Section D-D
Flow Element	*Irregular Channel*
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0200	ft/ft
Discharge	1,670	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	989.98	ft
Elevation Range	985.30 to 1,030.50	
Flow Area	142.1	ft²
Wetted Perimeter	42.49	ft
Top Width	39.66	ft
Actual Depth	4.68	ft
Critical Elevation	990.22	ft
Critical Slope	0.0165	ft/ft
Velocity	11.75	ft/s
Velocity Head	2.15	ft
Specific Energy	992.13	ft
Froude Number	1.09	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
1+00.00	1+67.50	0.050
1+67.50	2+56.20	0.040
2+56.20	*3+41.50*	*0.050*

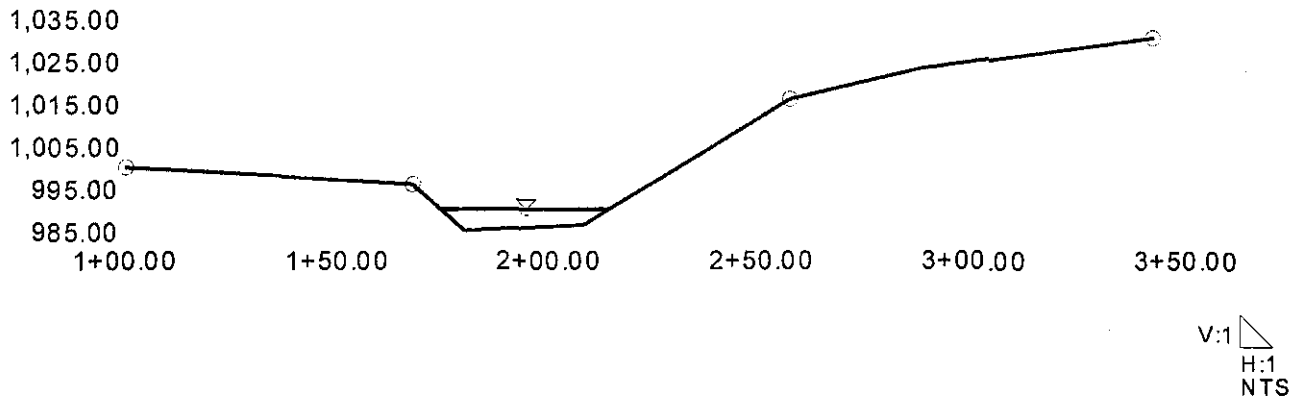
Natural Channel Points

Station (ft)	Elevation (ft)
1+00.00	1,000.30
1+67.50	996.10
1+79.80	985.30
2+08.20	986.30
2+56.20	1,016.10
2+87.40	1,023.50
3+41.50	1,030.50

Unnamed Wash 2 - Approximate Method Section D-D
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 2 - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0200	ft/ft
Water Surface Elevation	989.98	ft
Elevation Range	985.30 to 1,030.50	
Discharge	1,670	cfs



Unnamed Wash 2 - Approximate Method Section E-E
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 2 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0177	ft/ft
Discharge	1,670	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	988.80	ft
Elevation Range	983.00 to 1,015.10	
Flow Area	151.2	ft²
Wetted Perimeter	45.22	ft
Top Width	42.52	ft
Actual Depth	5.80	ft
Critical Elevation	988.89	ft
Critical Slope	0.0165	ft/ft
Velocity	11.05	ft/s
Velocity Head	1.90	ft
Specific Energy	990.70	ft
Froude Number	1.03	
Flow Type	*Supercritical*	

Roughness Segments

Start Station	End Station	Mannings Coefficient
1+00.00	1+94.10	0.050
1+94.10	2+87.10	0.040
2+87.10	*3+59.50*	*0.050*

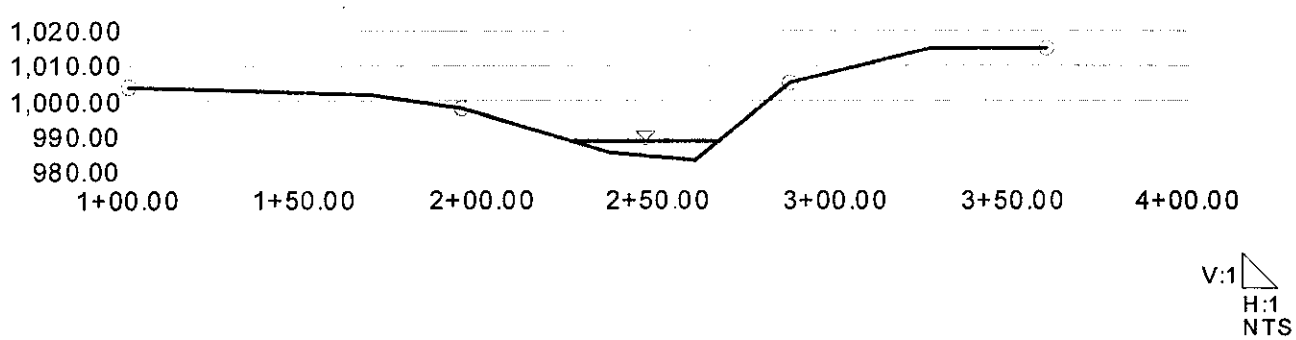
Natural Channel Points

Station (ft)	Elevation (ft)
1+00.00	1,004.10
1+68.60	1,001.60
1+94.10	998.10
2+35.90	985.40
2+60.20	983.00
2+87.10	1,005.20
3+26.70	1,015.10
3+59.50	1,014.70

Unnamed Wash 2 - Approximate Method Section E-E
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 2 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0177	ft/ft
Water Surface Elevation	988.80	ft
Elevation Range	983.00 to 1,015.10	
Discharge	1,670	cfs



Unnamed Wash 2 - Approximate Method Section F-F
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 2 - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0222	ft/ft
Discharge	1,380	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.041	
Water Surface Elevation	994.41	ft
Elevation Range	989.90 to 1,007.20	
Flow Area	134.7	ft²
Wetted Perimeter	50.69	ft
Top Width	48.58	ft
Actual Depth	4.51	ft
Critical Elevation	994.58	ft
Critical Slope	0.0186	ft/ft
Velocity	10.24	ft/s
Velocity Head	1.63	ft
Specific Energy	996.04	ft
Froude Number	1.08	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
1+00.00	1+69.50	0.050
1+69.50	2+22.30	0.040
2+22.30	3+14.50	0.050

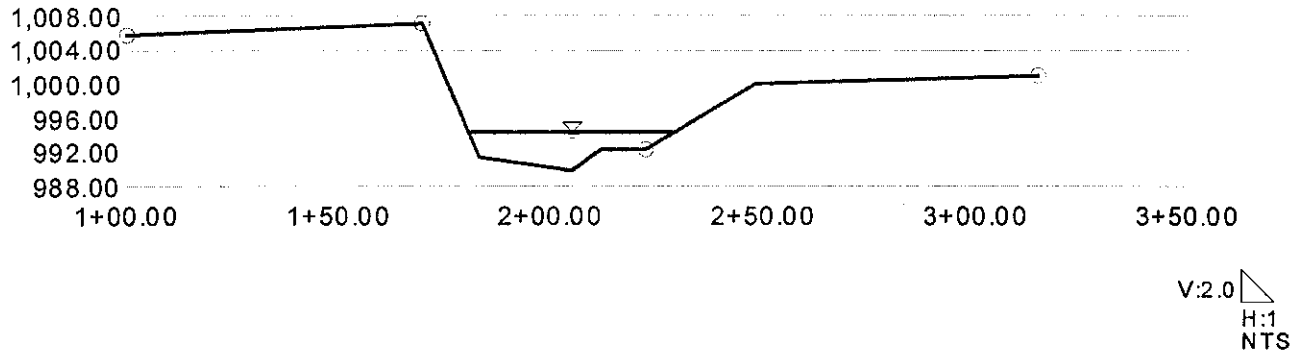
Natural Channel Points

Station (ft)	Elevation (ft)
1+00.00	1,005.80
1+69.50	1,007.20
1+83.10	991.50
2+04.70	989.90
2+11.60	992.40
2+22.30	992.40
2+48.20	1,000.00
3+14.50	1,001.00

Unnamed Wash 2 - Approximate Method Section F-F
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 2 - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.041	
Slope	0.0222	ft/ft
Water Surface Elevation	994.41	ft
Elevation Range	989.90 to 1,007.20	
Discharge	1,380	cfs



Unnamed Wash 2 - Approximate Method Section G-G
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 2 - Approximate Method Section G-G
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0278	ft/ft
Discharge	1,380	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	982.96	ft
Elevation Range	979.30 to 1,008.40	
Flow Area	119.3	ft²
Wetted Perimeter	46.79	ft
Top Width	44.53	ft
Actual Depth	3.66	ft
Critical Elevation	983.40	ft
Critical Slope	0.0173	ft/ft
Velocity	11.56	ft/s
Velocity Head	2.08	ft
Specific Energy	985.04	ft
Froude Number	1.25	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
1+00.00	1+74.40	0.050
1+74.40	2+52.10	0.040
2+52.10	2+66.80	0.050

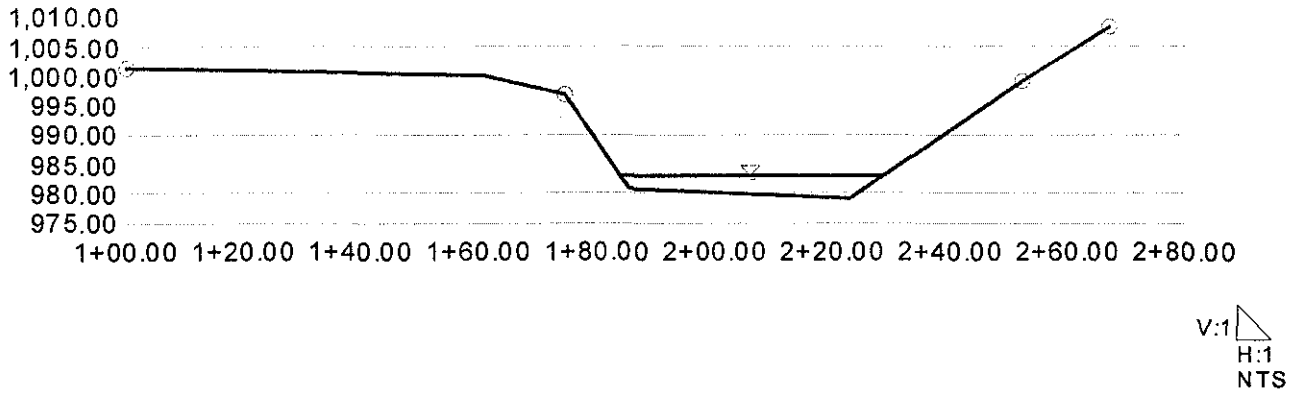
Natural Channel Points

Station (ft)	Elevation (ft)
1+00.00	1,001.40
1+60.70	1,000.20
1+74.40	996.80
1+85.20	980.90
2+23.00	979.30
2+52.10	999.30
2+66.80	1,008.40

Unnamed Wash 2 - Approximate Method Section G-G
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 2 - Approximate Method Section G-G
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0278	ft/ft
Water Surface Elevation	982.96	ft
Elevation Range	979.30 to 1,008.40	
Discharge	1,380	cfs



Unnamed Wash 2 - Approximate Method Section H-H
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 2 - Approximate Method Section H-H
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0286	ft/ft
Discharge	1,380	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.042	
Water Surface Elevation	981.62	ft
Elevation Range	976.60 to 1,007.30	
Flow Area	111.0	ft²
Wetted Perimeter	37.27	ft
Top Width	34.33	ft
Actual Depth	5.02	ft
Critical Elevation	982.17	ft
Critical Slope	0.0188	ft/ft
Velocity	12.43	ft/s
Velocity Head	2.40	ft
Specific Energy	984.02	ft
Froude Number	1.22	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
1+00.00	1+84.00	0.050
1+84.00	2+37.30	0.040
2+37.30	4+17.00	0.050

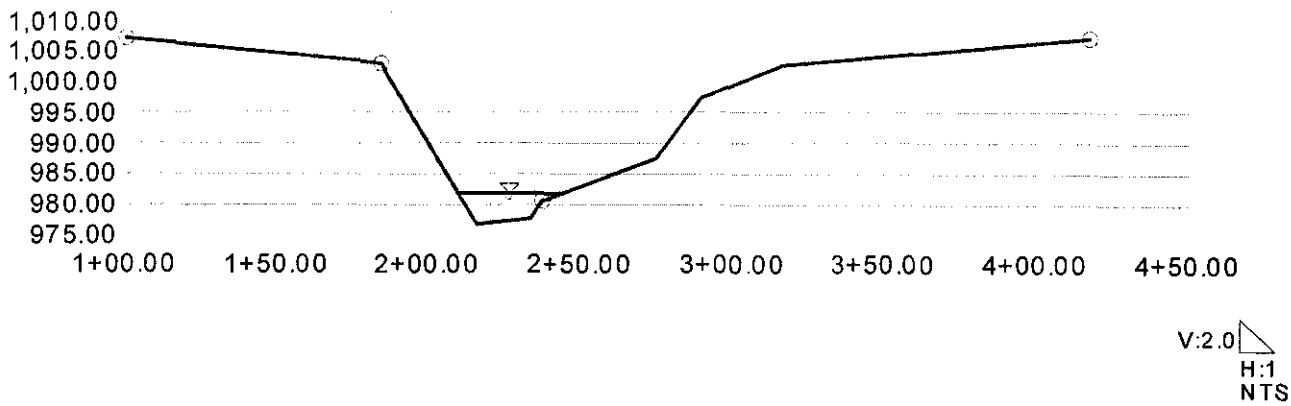
Natural Channel Points

Station (ft)	Elevation (ft)
1+00.00	1,007.30
1+84.00	1,003.00
2+15.40	976.60
2+33.70	977.60
2+37.30	980.40
2+75.00	987.50
2+89.70	997.30
3+16.30	1,002.60
4+17.00	1,007.10

Unnamed Wash 2 - Approximate Method Section H-H
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 2 - Approximate Method Section H-H
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.042	
Slope	0.0286	ft/ft
Water Surface Elevation	981.62	ft
Elevation Range	976.60 to 1,007.30	
Discharge	1,380	cfs



Tributary 1 to Unnamed Wash 2 – Approximate Method Reach

Tributary 1 to Unnamed Wash 2 - Approximate Method Section A-A
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 2 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0218	ft/ft
Discharge	860	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	*0.050*	
Water Surface Elevation	1,731.82	ft
Elevation Range	1,728.00 to 1,750.00	
Flow Area	99.3	ft²
Wetted Perimeter	35.77	ft
Top Width	34.01	ft
Actual Depth	3.82	ft
Critical Elevation	1,731.59	ft
Critical Slope	0.0277	ft/ft
Velocity	8.66	ft/s
Velocity Head	1.17	ft
Specific Energy	1,732.99	ft
Froude Number	0.89	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+32.78	0.050

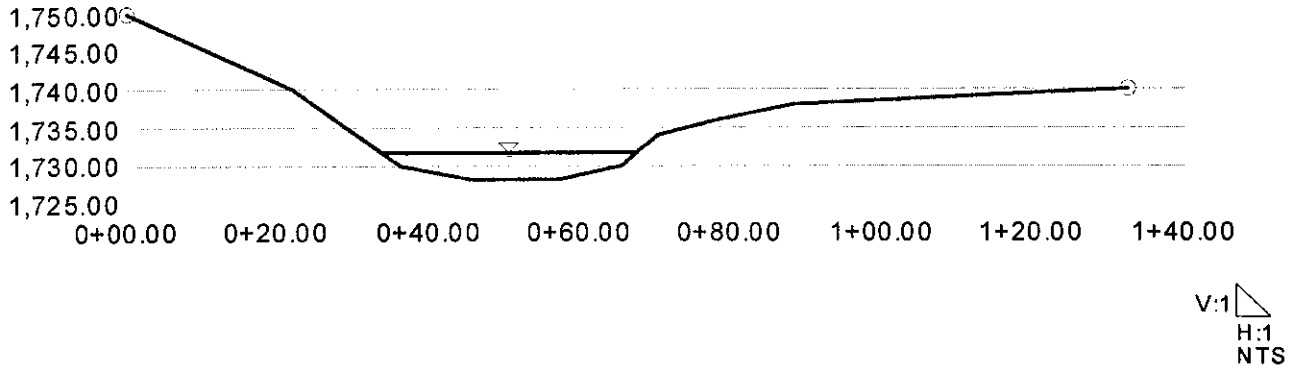
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,750.00
0+22.04	1,740.00
0+36.19	1,730.00
0+45.54	1,728.00
0+57.50	1,728.00
0+65.70	1,730.00
0+67.82	1,732.00
0+70.52	1,734.00
0+78.29	1,736.00
0+88.38	1,738.00
1+32.78	1,740.00

Tributary 1 to Unnamed Wash 2 - Approximate Method Section A-A
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 2 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.050	
Slope	0.0218	ft/ft
Water Surface Elevation	1,731.82	ft
Elevation Range	1,728.00 to 1,750.00	
Discharge	860	cfs



Tributary 1 to Unnamed Wash 2 - Approximate Method Section B-B
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 2 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0206	ft/ft
Discharge	860	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.050	
Water Surface Elevation	1,751.52	ft
Elevation Range	1,748.00 to 1,762.00	
Flow Area	108.6	ft²
Wetted Perimeter	42.89	ft
Top Width	41.72	ft
Actual Depth	3.52	ft
Critical Elevation	1,751.24	ft
Critical Slope	0.0281	ft/ft
Velocity	7.92	ft/s
Velocity Head	0.98	ft
Specific Energy	1,752.49	ft
Froude Number	0.87	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+30.06	0.050

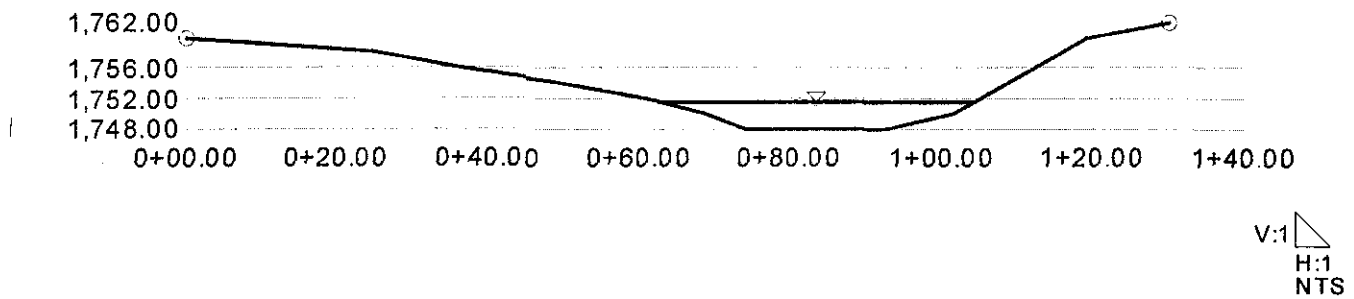
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,760.00
0+24.87	1,758.00
0+36.03	1,756.00
0+49.38	1,754.00
0+60.74	1,752.00
0+68.54	1,750.00
0+74.08	1,748.00
0+92.74	1,748.00
1+01.70	1,750.00
1+19.21	1,760.00
1+30.06	1,762.00

Tributary 1 to Unnamed Wash 2 - Approximate Method Section B-B
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 2 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.050	
Slope	0.0206	ft/ft
Water Surface Elevation	1,751.52	ft
Elevation Range	1,748.00 to 1,762.00	
Discharge	860	cfs



Tributary 1 to Unnamed Wash 2 - Approximate Method Section C-C
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 2 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0160	ft/ft
Discharge	860	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.050	
Water Surface Elevation	1,768.62	ft
Elevation Range	1,764.00 to 1,782.00	
Flow Area	136.1	ft²
Wetted Perimeter	62.47	ft
Top Width	61.25	ft
Actual Depth	4.62	ft
Critical Elevation	1,768.13	ft
Critical Slope	0.0298	ft/ft
Velocity	6.32	ft/s
Velocity Head	0.62	ft
Specific Energy	1,769.24	ft
Froude Number	0.75	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+69.55	0.050

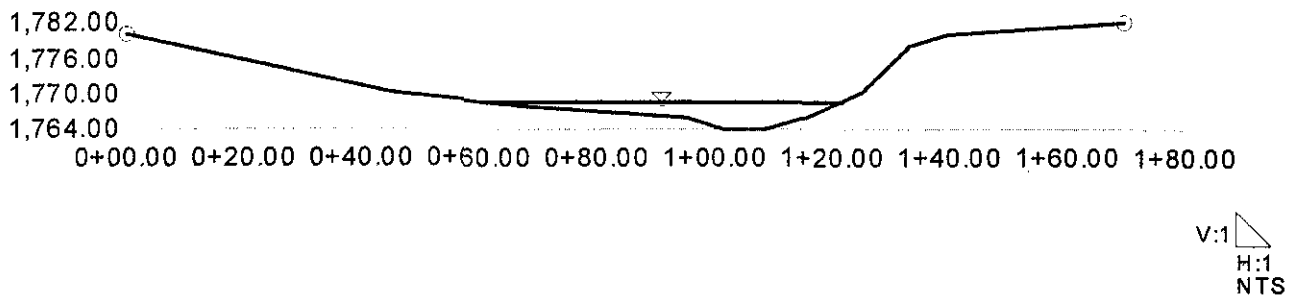
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,780.00
0+44.95	1,770.00
0+67.21	1,768.00
0+94.98	1,766.00
1+01.28	1,764.00
1+08.69	1,764.00
1+15.31	1,766.00
1+24.94	1,770.00
1+33.14	1,778.00
1+39.59	1,780.00
1+69.55	1,782.00

Tributary 1 to Unnamed Wash 2 - Approximate Method Section C-C
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 2 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.050	
Slope	0.0160	ft/ft
Water Surface Elevation	1,768.62	ft
Elevation Range	1,764.00 to 1,782.00	
Discharge	860	cfs



Tributary 1 to Unnamed Wash 2 - Approximate Method Section D-D
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 2 - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0220	ft/ft
Discharge	860	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.050	
Water Surface Elevation	1,788.30	ft
Elevation Range	1,784.20 to 1,800.00	
Flow Area	113.1	ft²
Wetted Perimeter	49.95	ft
Top Width	48.73	ft
Actual Depth	4.10	ft
Critical Elevation	1,788.08	ft
Critical Slope	0.0290	ft/ft
Velocity	7.60	ft/s
Velocity Head	0.90	ft
Specific Energy	1,789.20	ft
Froude Number	0.88	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+67.08	0.050

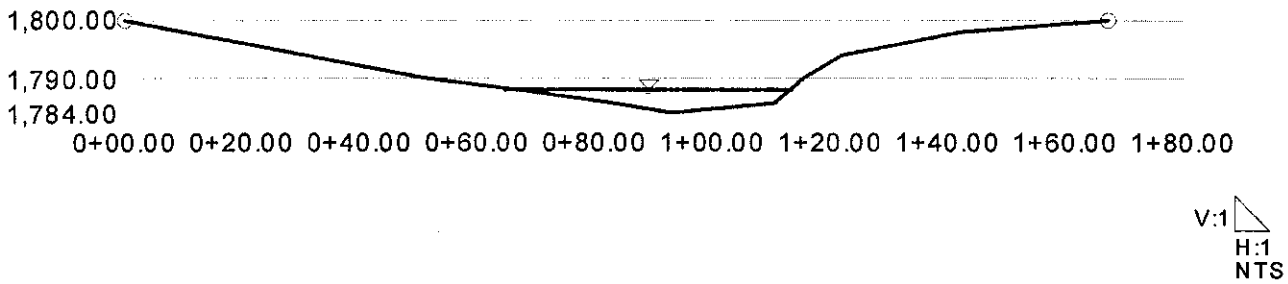
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,800.00
0+51.35	1,790.00
0+67.10	1,788.00
0+82.88	1,786.00
0+93.25	1,784.20
1+10.70	1,786.00
1+15.48	1,790.00
1+21.98	1,794.00
1+32.20	1,796.00
1+42.13	1,798.00
1+67.08	1,800.00

Tributary 1 to Unnamed Wash 2 - Approximate Method Section D-D
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 2 - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.050	
Slope	0.0220	ft/ft
Water Surface Elevation	1,788.30	ft
Elevation Range	1,784.20 to 1,800.00	
Discharge	860	cfs



Tributary 1 to Unnamed Wash 2 - Approximate Method Section E-E
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 2 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0180	ft/ft
Discharge	860	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.050	
Water Surface Elevation	1,808.60	ft
Elevation Range	1,804.00 to 1,820.00	
Flow Area	109.1	ft²
Wetted Perimeter	39.28	ft
Top Width	37.80	ft
Actual Depth	4.60	ft
Critical Elevation	1,808.17	ft
Critical Slope	0.0277	ft/ft
Velocity	7.88	ft/s
Velocity Head	0.96	ft
Specific Energy	1,809.57	ft
Froude Number	0.82	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+75.80	0.050

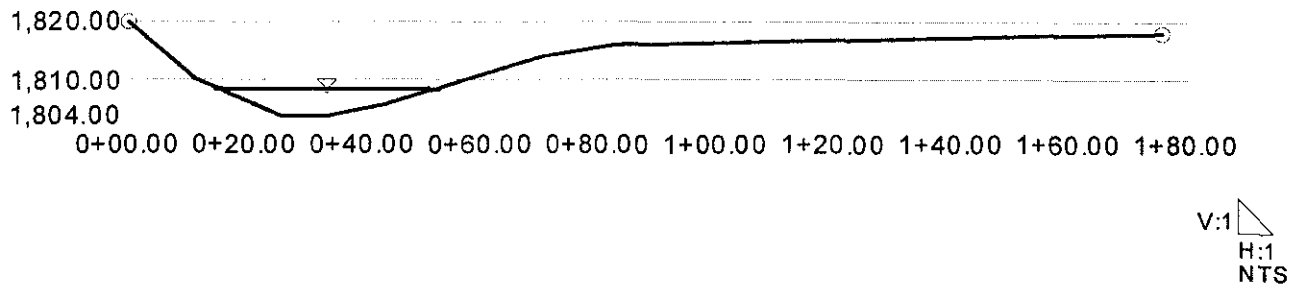
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,820.00
0+11.56	1,810.00
0+26.28	1,804.00
0+34.22	1,804.00
0+43.97	1,806.00
0+57.52	1,810.00
0+70.48	1,814.00
0+82.74	1,816.00
1+75.80	1,818.00

Tributary 1 to Unnamed Wash 2 - Approximate Method Section E-E
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 2 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.050	
Slope	0.0180	ft/ft
Water Surface Elevation	1,808.60	ft
Elevation Range	1,804.00 to 1,820.00	
Discharge	860	cfs



Tributary 1 to Unnamed Wash 2 - Approximate Method Section F-F
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 2 - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0200	ft/ft
Discharge	860	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.050	
Water Surface Elevation	1,827.44	ft
Elevation Range	1,824.00 to 1,840.00	
Flow Area	114.8	ft²
Wetted Perimeter	48.25	ft
Top Width	47.45	ft
Actual Depth	3.44	ft
Critical Elevation	1,827.15	ft
Critical Slope	0.0285	ft/ft
Velocity	7.49	ft/s
Velocity Head	0.87	ft
Specific Energy	1,828.31	ft
Froude Number	0.85	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+54.56	0.050

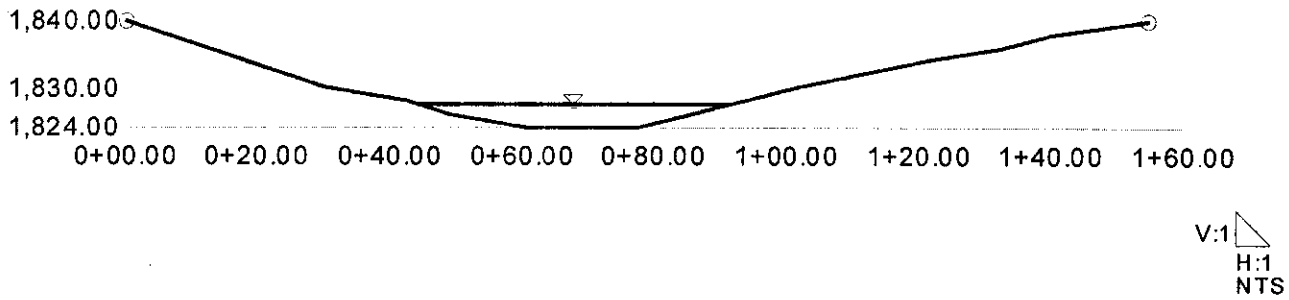
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,840.00
0+29.79	1,830.00
0+42.27	1,828.00
0+48.68	1,826.00
0+60.73	1,824.00
0+77.63	1,824.00
0+85.79	1,826.00
1+01.72	1,830.00
1+11.82	1,832.00
1+21.72	1,834.00
1+32.80	1,836.00
1+40.38	1,838.00
1+54.56	1,840.00

Tributary 1 to Unnamed Wash 2 - Approximate Method Section F-F
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 2 - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.050	
Slope	0.0200	ft/ft
Water Surface Elevation	1,827.44	ft
Elevation Range	1,824.00 to 1,840.00	
Discharge	860	cfs



Tributary 1 to Unnamed Wash 2 - Approximate Method Section G-G
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 2 - Approximate Method Section G-G
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0117	ft/ft
Discharge	860	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.050	
Water Surface Elevation	1,835.23	ft
Elevation Range	1,830.00 to 1,850.00	
Flow Area	135.2	ft²
Wetted Perimeter	48.55	ft
Top Width	47.15	ft
Actual Depth	5.23	ft
Critical Elevation	1,834.35	ft
Critical Slope	0.0281	ft/ft
Velocity	6.36	ft/s
Velocity Head	0.63	ft
Specific Energy	1,835.86	ft
Froude Number	0.66	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+63.04	0.050

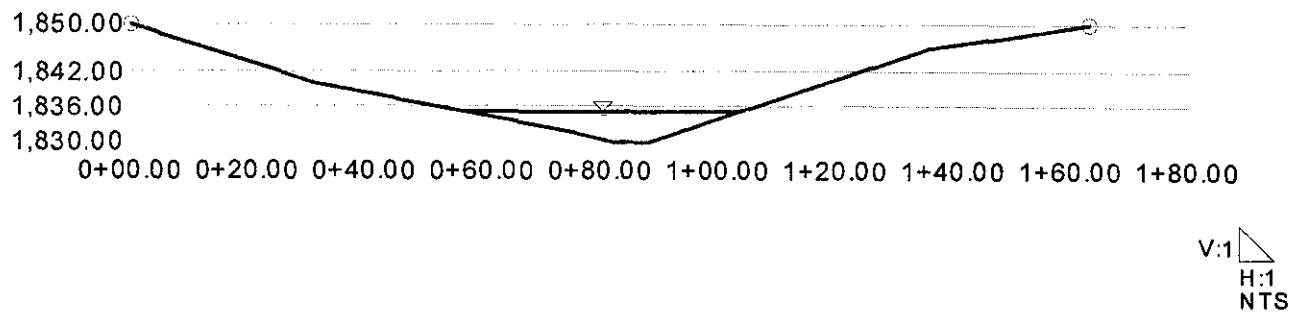
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,850.00
0+31.36	1,840.00
0+74.23	1,832.00
0+82.03	1,830.00
0+88.39	1,830.00
1+18.39	1,840.00
1+35.84	1,846.00
1+49.87	1,848.00
1+63.04	1,850.00

Tributary 1 to Unnamed Wash 2 - Approximate Method Section G-G
Cross Section for Irregular Channel

Project Description	
Worksheet	*Tributary 1 to Unnamed Wash 2 - Approximate Method Section G-G*
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.050	
Slope	0.0117	ft/ft
Water Surface Elevation	1,835.23	ft
Elevation Range	1,830.00 to 1,850.00	
Discharge	860	cfs



Tributary 2 to Unnamed Wash 2 – Approximate Method Reach

Tributary 2 to Unnamed Wash 2 - Approximate Method Section A-A
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 2 to Unnamed Wash 2 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0166	ft/ft
Discharge	1,130	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,802.95	ft
Elevation Range	1,801.00 to 1,820.00	
Flow Area	209.1	ft²
Wetted Perimeter	174.24	ft
Top Width	173.90	ft
Actual Depth	1.95	ft
Critical Elevation	1,802.84	ft
Critical Slope	0.0227	ft/ft
Velocity	5.40	ft/s
Velocity Head	0.45	ft
Specific Energy	1,803.40	ft
Froude Number	0.87	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+86.13	0.050
0+86.13	2+87.06	0.040
2+87.06	3+05.51	0.050

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,820.00
0+31.00	1,810.00
0+45.86	1,806.00
0+86.13	1,804.00
0+93.82	1,802.00
1+27.12	1,802.00
1+37.56	1,802.80
1+49.03	1,802.00
2+00.53	1,801.00
2+60.97	1,802.00
2+87.06	1,810.00

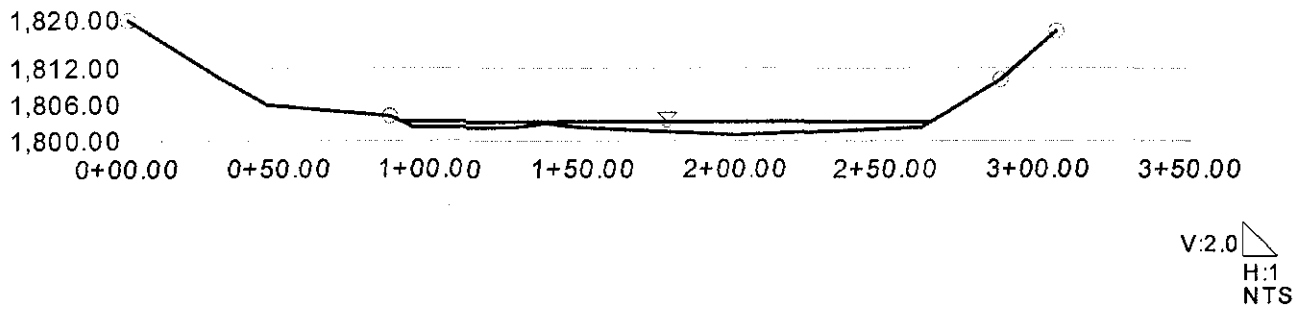
Tributary 2 to Unnamed Wash 2 - Approximate Method Section A-A
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
3+05.51	1,818.00

Tributary 2 to Unnamed Wash 2 - Approximate Method Section A-A
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 2 to Unnamed Wash 2 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0166	ft/ft
Water Surface Elevation	1,802.95	ft
Elevation Range	1,801.00 to 1,820.00	
Discharge	1,130	cfs



Tributary 2 to Unnamed Wash 2 - Approximate Method Section B-B
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 2 to Unnamed Wash 2 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0193	ft/ft
Discharge	1,130	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.041	
Water Surface Elevation	1,823.44	ft
Elevation Range	1,820.00 to 1,834.00	
Flow Area	127.5	ft²
Wetted Perimeter	54.04	ft
Top Width	53.28	ft
Actual Depth	3.44	ft
Critical Elevation	1,823.46	ft
Critical Slope	0.0189	ft/ft
Velocity	8.87	ft/s
Velocity Head	1.22	ft
Specific Energy	1,824.66	ft
Froude Number	1.01	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+09.08	0.050
0+09.08	0+78.74	0.040
0+78.74	1+19.47	0.050

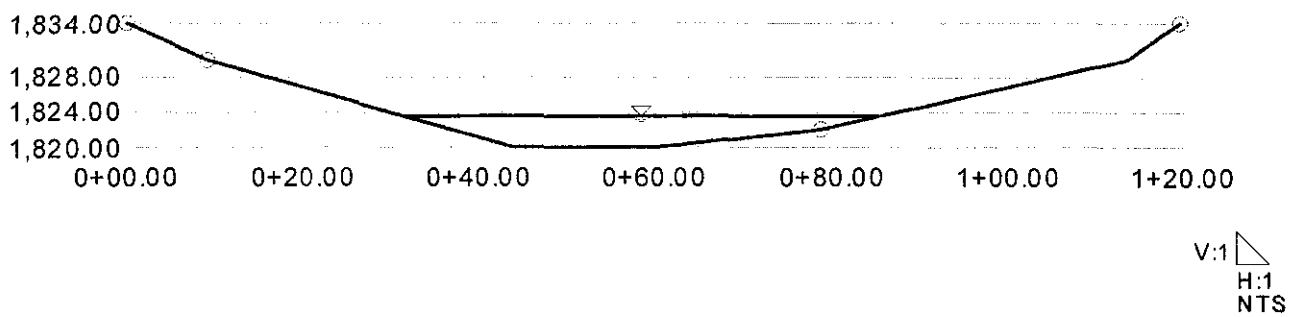
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,834.00
0+09.08	1,830.00
0+43.64	1,820.00
0+60.43	1,820.00
0+78.74	1,822.00
1+13.65	1,830.00
1+19.47	1,834.00

Tributary 2 to Unnamed Wash 2 - Approximate Method Section B-B
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 2 to Unnamed Wash 2 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.041	
Slope	0.0193	ft/ft
Water Surface Elevation	1,823.44	ft
Elevation Range	1,820.00 to 1,834.00	
Discharge	1,130	cfs



Tributary 2 to Unnamed Wash 2 - Approximate Method Section C-C
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 2 to Unnamed Wash 2 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0200	ft/ft
Discharge	1,130	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,842.55	ft
Elevation Range	1,840.00 to 1,852.00	
Flow Area	131.7	ft²
Wetted Perimeter	62.30	ft
Top Width	61.42	ft
Actual Depth	2.55	ft
Critical Elevation	1,842.60	ft
Critical Slope	0.0186	ft/ft
Velocity	8.58	ft/s
Velocity Head	1.14	ft
Specific Energy	1,843.69	ft
Froude Number	1.03	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+13.39	0.050
0+13.39	0+86.23	0.040
0+86.23	1+13.05	0.050

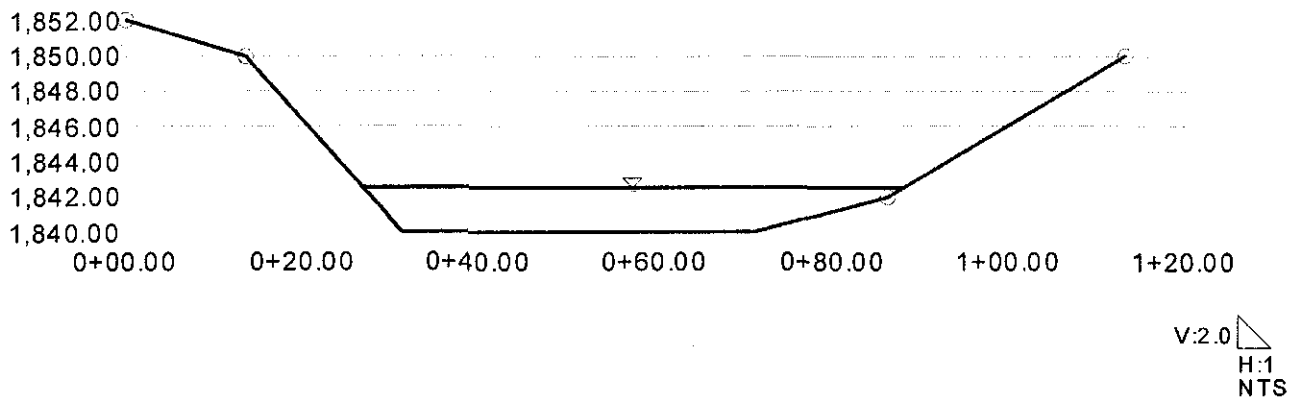
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,852.00
0+13.39	1,850.00
0+31.19	1,840.00
0+71.25	1,840.00
0+86.23	1,842.00
1+13.05	1,850.00

Tributary 2 to Unnamed Wash 2 - Approximate Method Section C-C
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 2 to Unnamed Wash 2 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0200	ft/ft
Water Surface Elevation	1,842.55	ft
Elevation Range	1,840.00 to 1,852.00	
Discharge	1,130	cfs



Tributary 2 to Unnamed Wash 2 - Approximate Method Section D-D
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 2 to Unnamed Wash 2 - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0167	ft/ft
Discharge	1,130	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	927.52	ft
Elevation Range	924.00 to 942.00	
Flow Area	137.5	ft²
Wetted Perimeter	61.35	ft
Top Width	60.27	ft
Actual Depth	3.52	ft
Critical Elevation	927.45	ft
Critical Slope	0.0183	ft/ft
Velocity	8.22	ft/s
Velocity Head	1.05	ft
Specific Energy	928.57	ft
Froude Number	0.96	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
1+00.00	1+64.90	0.050
1+64.90	2+60.00	0.040
2+60.00	2+99.70	0.050

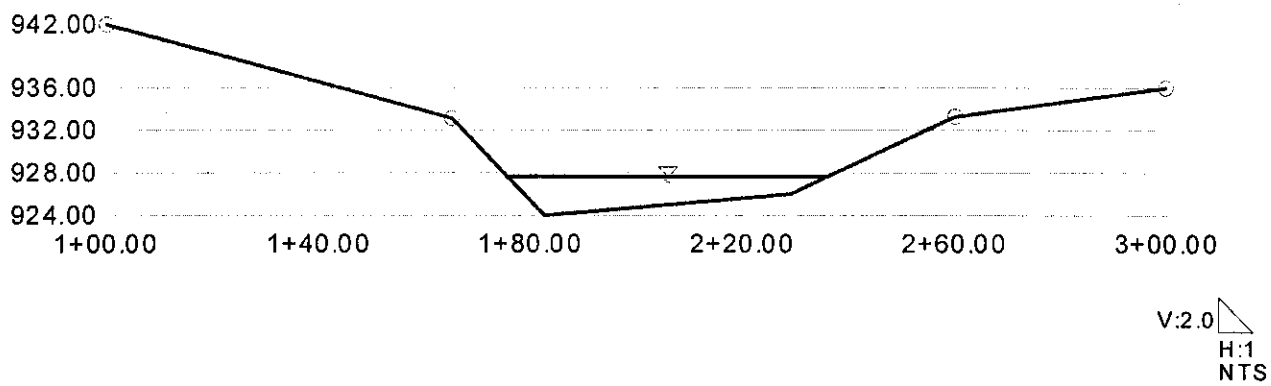
Natural Channel Points

Station (ft)	Elevation (ft)
1+00.00	942.00
1+64.90	933.00
1+82.60	924.00
2+29.20	925.90
2+60.00	933.30
2+99.70	936.00

Tributary 2 to Unnamed Wash 2 - Approximate Method Section D-D
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 2 to Unnamed Wash 2 - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.040
Slope	0.0167 ft/ft
Water Surface Elevation	927.52 ft
Elevation Range	924.00 to 942.00
Discharge	1,130 cfs



Tributary 2 to Unnamed Wash 2 - Approximate Method Section E-E
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 2 to Unnamed Wash 2 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0209	ft/ft
Discharge	1,130	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	941.67	ft
Elevation Range	937.50 to 977.80	
Flow Area	107.3	ft²
Wetted Perimeter	39.10	ft
Top Width	37.29	ft
Actual Depth	4.17	ft
Critical Elevation	941.87	ft
Critical Slope	0.0172	ft/ft
Velocity	10.53	ft/s
Velocity Head	1.72	ft
Specific Energy	943.39	ft
Froude Number	1.09	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
1+00.00	2+40.00	0.050
2+40.00	3+15.70	0.040
3+15.70	4+13.20	0.050

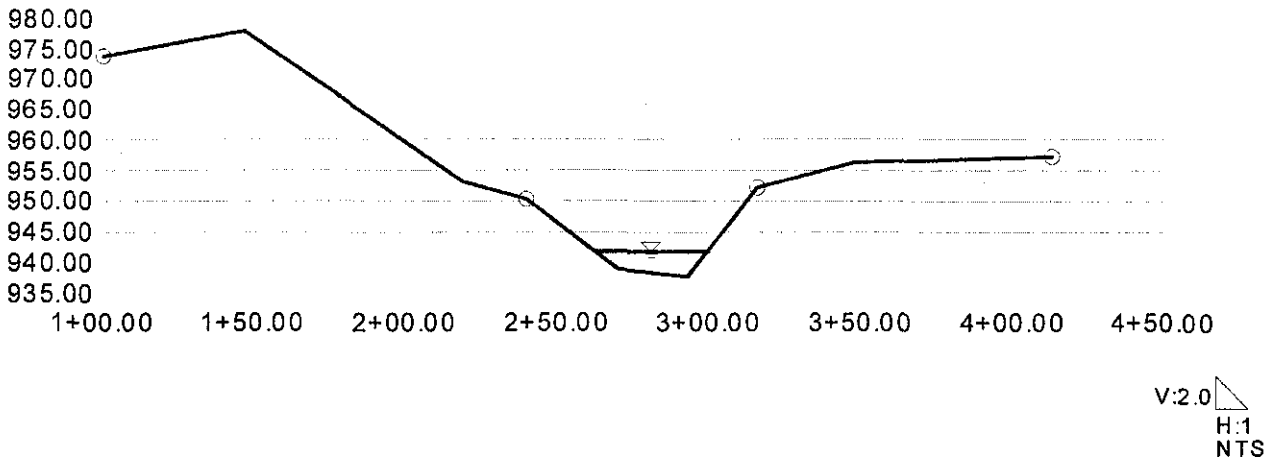
Natural Channel Points

Station (ft)	Elevation (ft)
1+00.00	973.80
1+46.40	977.80
2+19.00	953.20
2+40.00	950.20
2+70.00	938.70
2+93.10	937.50
3+15.70	952.10
3+48.30	956.20
4+13.20	957.30

Tributary 2 to Unnamed Wash 2 - Approximate Method Section E-E
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 2 to Unnamed Wash 2 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0209	ft/ft
Water Surface Elevation	941.67	ft
Elevation Range	937.50 to 977.80	
Discharge	1,130	cfs

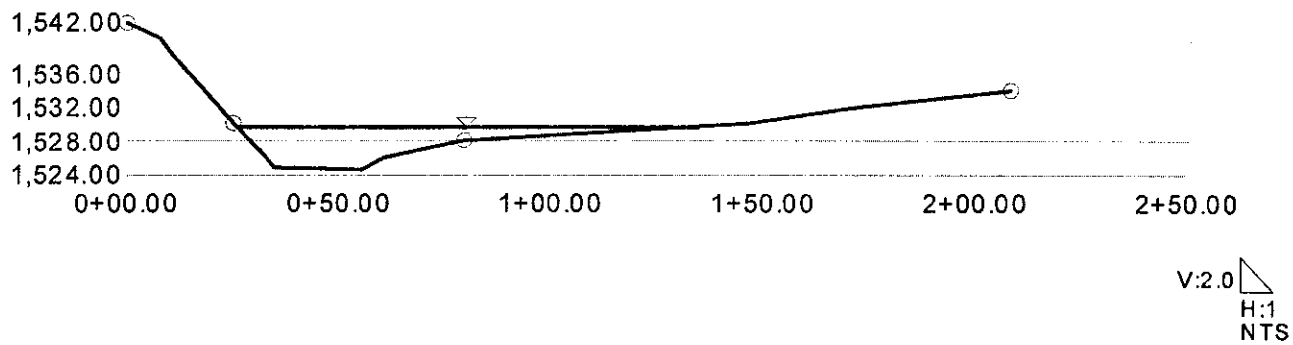


Twin Buttes Wash – Approximate Method Reach

Twin Buttes - Approximate Method Section A-A
Cross Section for Irregular Channel

Project Description	
Worksheet	Twin Buttes - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.048	
Slope	0.0123	ft/ft
Water Surface Elevation	1,529.65	ft
Elevation Range	1,524.70 to 1,542.00	
Discharge	1,390	cfs



Twin Buttes - Approximate Method Section A-A
Worksheet for Irregular Channel

Project Description	
Worksheet	Twin Buttes - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0123	ft/ft
Discharge	1,390	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.048	
Water Surface Elevation	1,529.65	ft
Elevation Range	1,524.70 to 1,542.00	
Flow Area	240.2	ft²
Wetted Perimeter	110.38	ft
Top Width	108.87	ft
Actual Depth	4.95	ft
Critical Elevation	1,528.93	ft
Critical Slope	0.0268	ft/ft
Velocity	5.79	ft/s
Velocity Head	0.52	ft
Specific Energy	1,530.17	ft
Froude Number	0.69	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	*0+24.88*	*0.050*
0+24.88	0+79.26	0.040
0+79.26	2+08.16	0.055

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,542.00
0+07.50	1,540.00
0+10.89	1,538.00
0+24.88	1,530.00
0+32.50	1,526.00
0+34.60	1,524.80
0+55.40	1,524.70
0+60.35	1,526.00
0+79.26	1,528.00
1+46.25	1,530.00
1+70.72	1,532.00

Twin Buttes - Approximate Method Section A-A
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
2+08.16	1,534.00

Twin Buttes - Approximate Method Section B-B
Worksheet for Irregular Channel

Project Description	
Worksheet	Twin Buttes - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0156	ft/ft
Discharge	1,390	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.042	
Water Surface Elevation	1,540.58	ft
Elevation Range	1,536.20 to 1,558.00	
Flow Area	162.3	ft²
Wetted Perimeter	61.04	ft
Top Width	59.88	ft
Actual Depth	4.38	ft
Critical Elevation	1,540.39	ft
Critical Slope	0.0187	ft/ft
Velocity	8.57	ft/s
Velocity Head	1.14	ft
Specific Energy	1,541.72	ft
Froude Number	0.92	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+36.35	0.050
0+36.35	0+90.02	0.040
0+90.02	1+26.94	0.055

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,558.00
0+08.46	1,554.00
0+16.52	1,550.00
0+20.79	1,548.00
0+28.95	1,544.00
0+36.35	1,540.00
0+40.72	1,538.00
0+46.17	1,536.30
0+63.63	1,536.20
0+72.95	1,538.00
0+90.02	1,540.00

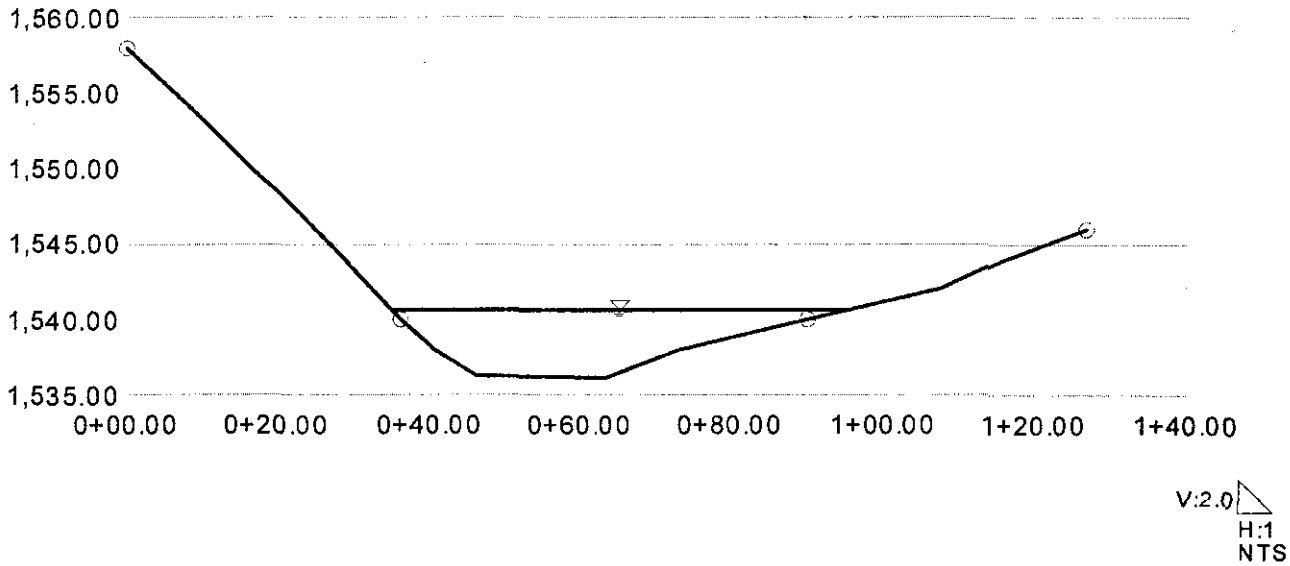
Twin Buttes - Approximate Method Section B-B
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
1+07.81	1,542.00
1+15.98	1,544.00
1+26.94	1,546.00

Twin Buttes - Approximate Method Section B-B
Cross Section for Irregular Channel

Project Description	
Worksheet	Twin Buttes - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.042	
Slope	0.0156	ft/ft
Water Surface Elevation	1,540.58	ft
Elevation Range	1,536.20 to 1,558.00	
Discharge	1,390	cfs



Twin Buttes - Approximate Method Section C-C
Worksheet for Irregular Channel

Project Description	
Worksheet	Twin Buttes - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0716	ft/ft
Discharge	1,390	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.050	
Water Surface Elevation	1,551.88	ft
Elevation Range	1,542.20 to 1,562.00	
Flow Area	90.1	ft²
Wetted Perimeter	33.32	ft
Top Width	24.93	ft
Actual Depth	9.68	ft
Critical Elevation	1,553.36	ft
Critical Slope	0.0316	ft/ft
Velocity	15.43	ft/s
Velocity Head	3.70	ft
Specific Energy	1,555.58	ft
Froude Number	1.43	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+43.49	0.050

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,562.00
0+06.75	1,560.00
0+14.05	1,558.00
0+20.95	1,556.00
0+27.70	1,554.00
0+40.21	1,552.00
0+42.98	1,550.00
0+45.61	1,544.00
0+47.25	1,542.20
0+49.05	1,544.00
0+56.48	1,550.00
0+65.86	1,552.00
0+89.57	1,554.00

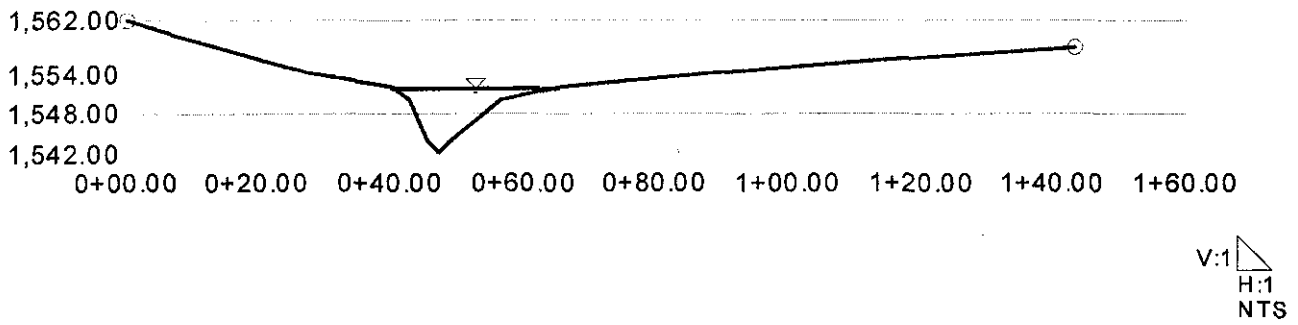
Twin Buttes - Approximate Method Section C-C
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
1+12.19	1,556.00
1+43.49	1,558.00

Twin Buttes - Approximate Method Section C-C
Cross Section for Irregular Channel

Project Description	
Worksheet	Twin Buttes - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.050	
Slope	0.0716	ft/ft
Water Surface Elevation	1,551.88	ft
Elevation Range	1,542.20 to 1,562.00	
Discharge	1,390	cfs



Twin Buttes - Approximate Method Section D-D
Worksheet for Irregular Channel

Project Description	
Worksheet	Twin Buttes - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0090	ft/ft
Discharge	1,390	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.050	
Water Surface Elevation	1,559.34	ft
Elevation Range	1,554.70 to 1,570.00	
Flow Area	253.4	ft²
Wetted Perimeter	93.35	ft
Top Width	92.63	ft
Actual Depth	4.64	ft
Critical Elevation	1,558.39	ft
Critical Slope	0.0288	ft/ft
Velocity	5.49	ft/s
Velocity Head	0.47	ft
Specific Energy	1,559.81	ft
Froude Number	0.58	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	2+58.34	0.050

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,570.00
0+13.31	1,568.00
0+27.85	1,566.00
0+38.54	1,564.00
0+49.10	1,562.00
0+59.67	1,560.00
0+70.20	1,558.00
1+05.50	1,556.00
1+08.79	1,555.00
1+28.35	1,554.70
1+36.68	1,556.00
1+48.20	1,558.00
1+59.44	1,560.00

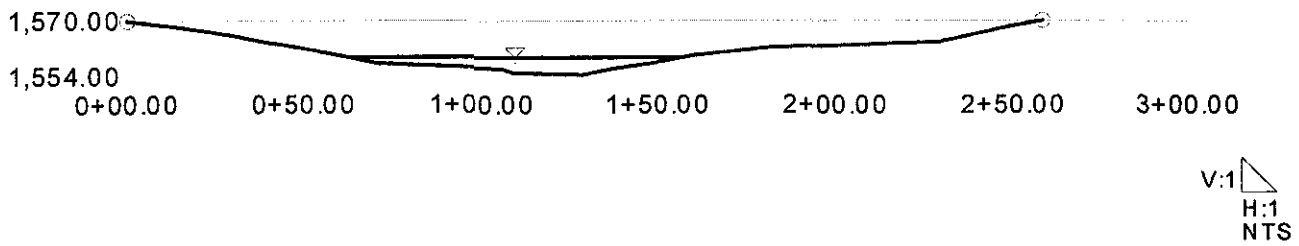
Twin Buttes - Approximate Method Section D-D
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
1+81.70	1,562.00
2+29.33	1,564.00
2+39.47	1,566.00
2+49.23	1,568.00
2+58.34	1,570.00

Twin Buttes - Approximate Method Section D-D
Cross Section for Irregular Channel

Project Description	
Worksheet	Twin Buttes - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.050	
Slope	0.0090	ft/ft
Water Surface Elevation	1,559.34	ft
Elevation Range	1,554.70 to 1,570.00	
Discharge	1,390	cfs



Twin Buttes - Approximate Method Section E-E
Worksheet for Irregular Channel

Project Description	
Worksheet	Twin Buttes - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0189	ft/ft
Discharge	1,390	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,567.96	ft
Elevation Range	1,563.10 to 1,590.00	
Flow Area	122.5	ft²
Wetted Perimeter	36.99	ft
Top Width	34.40	ft
Actual Depth	4.86	ft
Critical Elevation	1,568.12	ft
Critical Slope	0.0167	ft/ft
Velocity	11.35	ft/s
Velocity Head	2.00	ft
Specific Energy	1,569.96	ft
Froude Number	1.06	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+52.58	0.050
0+52.58	0+87.10	0.040
0+87.10	1+19.70	0.050

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,590.00
0+29.65	1,580.00
0+48.76	1,570.00
0+52.58	1,568.00
0+56.30	1,566.00
0+60.23	1,564.00
0+60.98	1,563.80
0+80.31	1,563.10
0+81.82	1,564.00
0+87.10	1,568.00
0+89.97	1,570.00

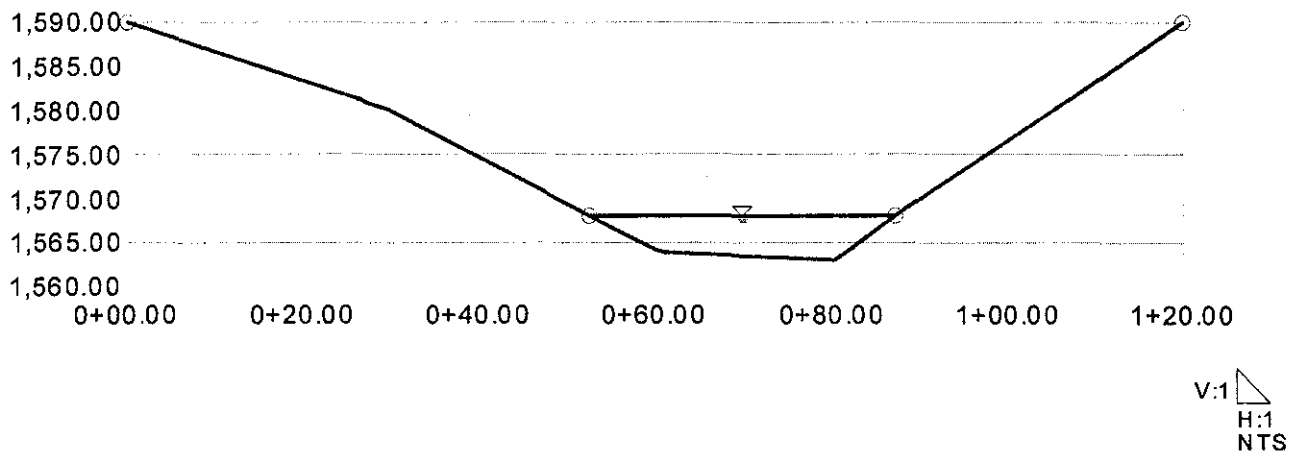
Twin Buttes - Approximate Method Section E-E
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
1+05.21	1,580.00
1+19.70	1,590.00

Twin Buttes - Approximate Method Section E-E
Cross Section for Irregular Channel

Project Description	
Worksheet	Twin Buttes - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0189	ft/ft
Water Surface Elevation	1,567.96	ft
Elevation Range	1,563.10 to 1,590.00	
Discharge	1,390	cfs



Twin Buttes Wash - Approximate Method Section F-F
Worksheet for Irregular Channel

Project Description	
Worksheet	Twin Buttes Wash - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0132	ft/ft
Discharge	1,250	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,573.57	ft
Elevation Range	1,568.50 to 1,590.00	
Flow Area	130.5	ft²
Wetted Perimeter	38.79	ft
Top Width	35.15	ft
Actual Depth	5.07	ft
Critical Elevation	1,573.21	ft
Critical Slope	0.0174	ft/ft
Velocity	9.58	ft/s
Velocity Head	1.43	ft
Specific Energy	1,574.99	ft
Froude Number	0.88	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+29.95	0.050
0+29.95	0+66.55	0.040
0+66.55	1+17.29	0.050

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,590.00
0+19.00	1,580.00
0+29.95	1,574.00
0+31.38	1,570.00
0+32.94	1,569.00
0+50.21	1,568.50
0+55.03	1,570.00
0+60.55	1,572.00
0+66.55	1,574.00
0+72.59	1,576.00
0+78.05	1,578.00

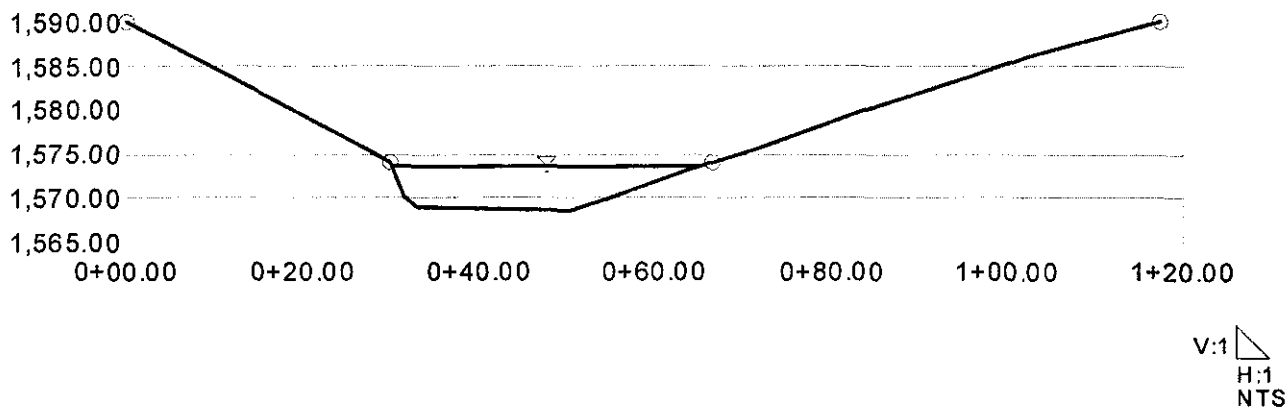
Twin Buttes Wash - Approximate Method Section F-F
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
0+83.67	1,580.00
0+89.85	1,582.00
0+95.97	1,584.00
1+02.51	1,586.00
1+09.97	1,588.00
1+17.29	1,590.00

Twin Buttes Wash - Approximate Method Section F-F
Cross Section for Irregular Channel

Project Description	
Worksheet	Twin Buttes Wash - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0132	ft/ft
Water Surface Elevation	1,573.57	ft
Elevation Range	1,568.50 to 1,590.00	
Discharge	1,250	cfs



Twin Buttes Wash - Approximate Method Section G-G
Worksheet for Irregular Channel

Project Description	
Worksheet	Twin Buttes Wash - Approximate Method Section G-G
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0114	ft/ft
Discharge	1,250	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,586.05	ft
Elevation Range	1,581.40 to 1,600.00	
Flow Area	214.5	ft²
Wetted Perimeter	100.02	ft
Top Width	99.16	ft
Actual Depth	4.65	ft
Critical Elevation	1,585.43	ft
Critical Slope	0.0242	ft/ft
Velocity	5.83	ft/s
Velocity Head	0.53	ft
Specific Energy	1,586.58	ft
Froude Number	0.70	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	2+06.27	0.050
2+06.27	2+54.11	0.040
2+54.11	3+13.82	0.050

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,600.00
0+07.47	1,598.00
0+30.92	1,596.00
0+53.60	1,594.00
0+71.13	1,592.00
1+05.77	1,590.00
1+17.17	1,588.00
1+56.20	1,586.00
2+06.27	1,584.00
2+17.79	1,582.00
2+19.20	1,581.70

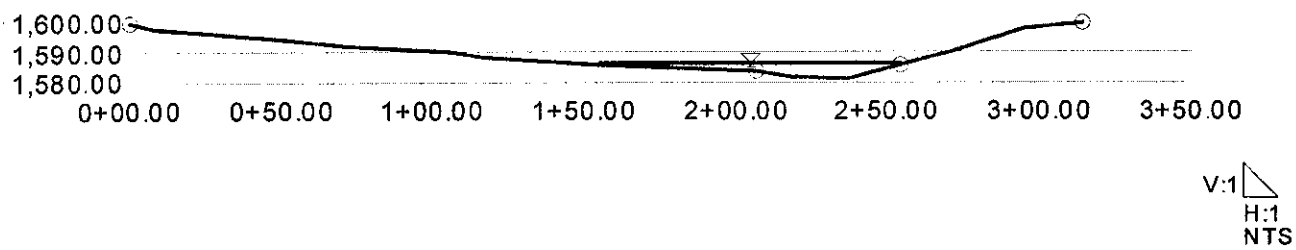
Twin Buttes Wash - Approximate Method Section G-G
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
2+36.95	1,581.40
2+39.65	1,582.00
2+46.59	1,584.00
2+54.11	1,586.00
2+63.63	1,588.00
2+71.39	1,590.00
2+77.15	1,592.00
2+83.03	1,594.00
2+89.02	1,596.00
2+94.66	1,598.00
3+13.82	1,600.00

Twin Buttes Wash - Approximate Method Section G-G
Cross Section for Irregular Channel

Project Description	
Worksheet	Twin Buttes Wash - Approximate Method Section G-G
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.0114	ft/ft
Water Surface Elevation	1,586.05	ft
Elevation Range	1,581.40 to 1,600.00	
Discharge	1,250	cfs



Twin Buttes Wash - Approximate Method Section H-H
Worksheet for Irregular Channel

Project Description	
Worksheet	Twin Buttes Wash - Approximate Method Section H-H
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0146	ft/ft
Discharge	1,250	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,595.30	ft
Elevation Range	1,592.00 to 1,610.00	
Flow Area	162.1	ft²
Wetted Perimeter	72.04	ft
Top Width	71.32	ft
Actual Depth	3.30	ft
Critical Elevation	1,595.13	ft
Critical Slope	0.0183	ft/ft
Velocity	7.71	ft/s
Velocity Head	0.92	ft
Specific Energy	1,596.22	ft
Froude Number	0.90	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+99.26	0.050
0+99.26	1+76.43	0.040
1+76.43	2+40.16	0.050

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,610.00
0+08.94	1,608.00
0+16.72	1,606.00
0+55.04	1,604.00
0+81.08	1,602.00
0+87.06	1,600.00
0+92.87	1,598.00
0+99.26	1,596.00
1+05.12	1,594.00
1+11.00	1,592.00
1+27.16	1,592.00

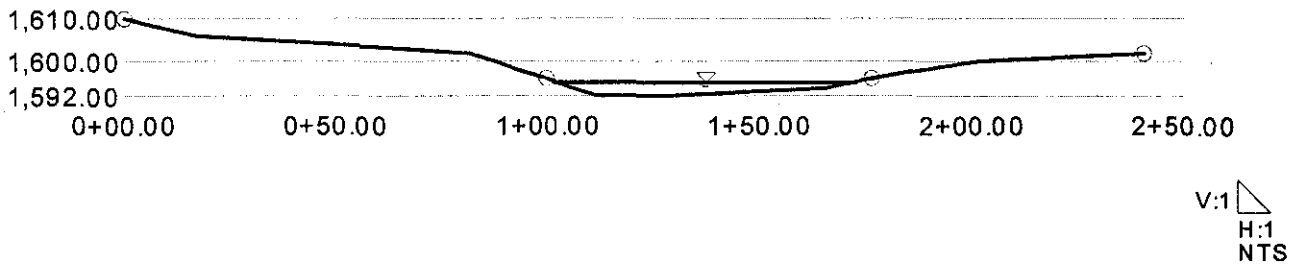
Twin Buttes Wash - Approximate Method Section H-H
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
1+65.69	1,594.00
1+76.43	1,596.00
1+86.50	1,598.00
2+01.18	1,600.00
2+40.16	1,602.00

Twin Buttes Wash - Approximate Method Section H-H
Cross Section for Irregular Channel

Project Description	
Worksheet	Twin Buttes Wash - Approximate Method Section H-H
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0146	ft/ft
Water Surface Elevation	1,595.30	ft
Elevation Range	1,592.00 to 1,610.00	
Discharge	1,250	cfs



Twin Buttes Wash - Approximate Method Section I-I
Worksheet for Irregular Channel

Project Description	
Worksheet	Twin Buttes Wash - Approximate Method Section I-I
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0186	ft/ft
Discharge	1,250	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,607.71	ft
Elevation Range	1,604.00 to 1,620.00	
Flow Area	135.0	ft²
Wetted Perimeter	54.68	ft
Top Width	53.91	ft
Actual Depth	3.71	ft
Critical Elevation	1,607.77	ft
Critical Slope	0.0174	ft/ft
Velocity	9.26	ft/s
Velocity Head	1.33	ft
Specific Energy	1,609.04	ft
Froude Number	1.03	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+32.85	0.050
0+32.85	0+89.22	0.040
0+89.22	1+74.38	0.050

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,620.00
0+08.32	1,616.00
0+16.20	1,612.00
0+22.12	1,610.00
0+32.85	1,608.00
0+42.05	1,606.00
0+50.41	1,604.00
0+66.39	1,604.00
0+81.32	1,606.00
0+89.22	1,608.00
0+98.88	1,610.00

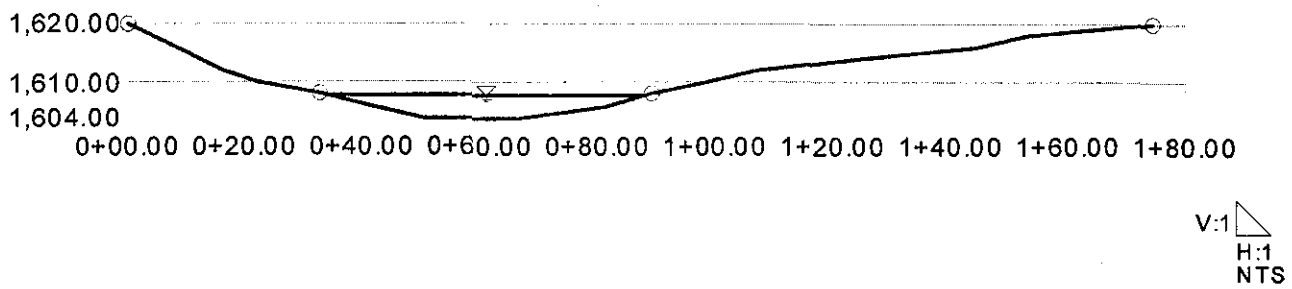
Twin Buttes Wash - Approximate Method Section I-I
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
1+07.24	1,612.00
1+24.29	1,614.00
1+44.73	1,616.00
1+53.09	1,618.00
1+74.38	1,620.00

Twin Buttes Wash - Approximate Method Section I-I
Cross Section for Irregular Channel

Project Description	
Worksheet	Twin Buttes Wash - Approximate Method Section I-I
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

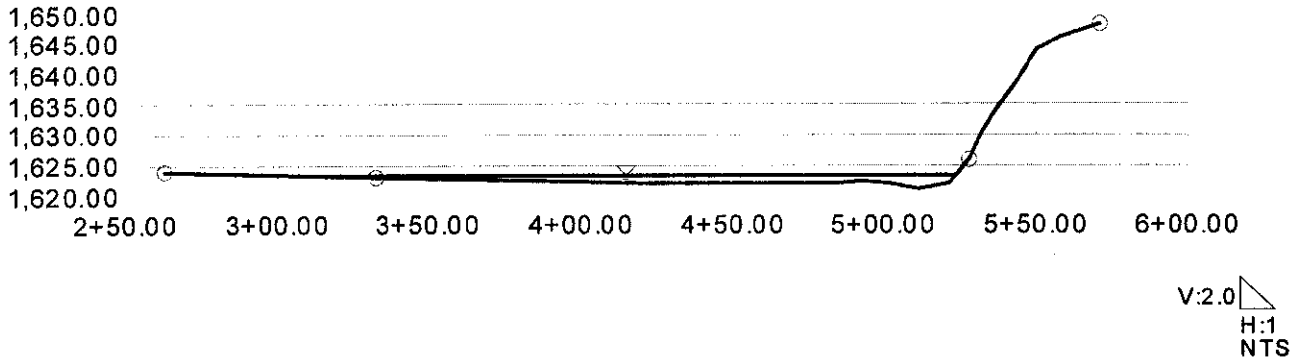
Section Data		
Mannings Coefficient	0.040	
Slope	0.0186	ft/ft
Water Surface Elevation	1,607.71	ft
Elevation Range	1,604.00 to 1,620.00	
Discharge	1,250	cfs



Twin Buttes Wash - Approximate Method Section J-J
Cross Section for Irregular Channel

Project Description	
Worksheet	Twin Buttes Wash - Approximate Method Section J-J
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.041	
Slope	0.0198	ft/ft
Water Surface Elevation	1,623.39	ft
Elevation Range	1,621.10 to 1,648.00	
Discharge	1,250	cfs



Twin Buttes Wash - Approximate Method Section J-J
Worksheet for Irregular Channel

Project Description	
Worksheet	Twin Buttes Wash - Approximate Method Section J-J
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0198	ft/ft
Discharge	1,250	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.041	
Water Surface Elevation	1,623.39	ft
Elevation Range	1,621.10 to 1,648.00	
Flow Area	235.3	ft²
Wetted Perimeter	218.88	ft
Top Width	218.38	ft
Actual Depth	2.29	ft
Critical Elevation	1,623.31	ft
Critical Slope	0.0247	ft/ft
Velocity	5.31	ft/s
Velocity Head	0.44	ft
Specific Energy	1,623.83	ft
Froude Number	0.90	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
2+62.45	3+32.45	0.050
3+32.45	5+27.70	0.040
5+27.70	5+70.83	0.050

Natural Channel Points

Station (ft)	Elevation (ft)
2+62.45	1,624.00
3+32.45	1,623.00
4+20.54	1,622.00
4+45.32	1,621.90
4+84.81	1,622.00
4+92.52	1,622.30
5+00.88	1,622.00
5+11.03	1,621.10
5+21.32	1,622.00
5+27.70	1,626.00
5+31.36	1,630.00

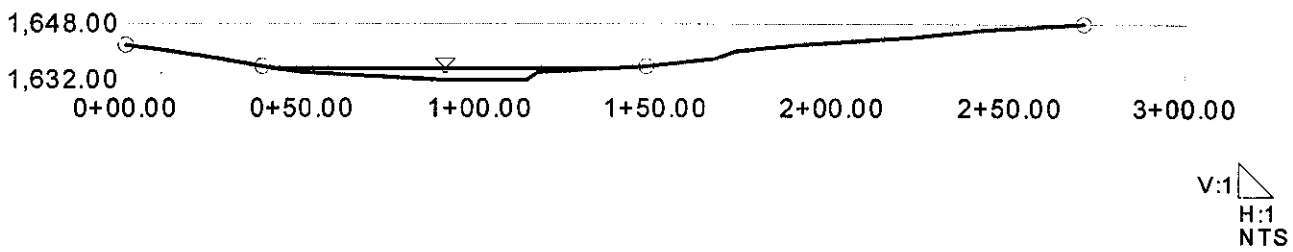
Twin Buttes Wash - Approximate Method Section J-J
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
5+36.56	1,634.00
5+42.23	1,638.00
5+45.19	1,640.00
5+50.27	1,644.00
5+57.59	1,646.00
5+70.83	1,648.00

Twin Buttes Wash - Approximate Method Section K-K
Cross Section for Irregular Channel

Project Description	
Worksheet	Twin Buttes Wash - Approximate Method Section K-K
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0089	ft/ft
Water Surface Elevation	1,635.50	ft
Elevation Range	1,632.00 to 1,648.00	
Discharge	1,250	cfs



Twin Buttes Wash - Approximate Method Section K-K
Worksheet for Irregular Channel

Project Description	
Worksheet	Twin Buttes Wash - Approximate Method Section K-K
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0089	ft/ft
Discharge	1,250	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,635.50	ft
Elevation Range	1,632.00 to 1,648.00	
Flow Area	213.2	ft²
Wetted Perimeter	98.50	ft
Top Width	97.73	ft
Actual Depth	3.50	ft
Critical Elevation	1,634.93	ft
Critical Slope	0.0191	ft/ft
Velocity	5.86	ft/s
Velocity Head	0.53	ft
Specific Energy	1,636.03	ft
Froude Number	0.70	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+38.85	0.050
0+38.85	1+46.92	0.040
1+46.92	2+70.72	0.050

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,642.00
0+11.87	1,640.00
0+25.84	1,638.00
0+38.85	1,636.00
0+49.75	1,634.00
0+90.21	1,632.00
1+13.22	1,632.00
1+16.66	1,634.00
1+46.92	1,636.00
1+66.51	1,638.00
1+73.12	1,640.00

Twin Buttes Wash - Approximate Method Section K-K
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
1+89.40	1,642.00
2+21.92	1,644.00
2+42.94	1,646.00
2+70.72	1,648.00

Twin Buttes Wash - Approximate Method Section L-L
Worksheet for Irregular Channel

Project Description	
Worksheet	Twin Buttes Wash - Approximate Method Section L-L
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0138	ft/ft
Discharge	1,250	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.043	
Water Surface Elevation	1,650.85	ft
Elevation Range	1,648.00 to 1,660.00	
Flow Area	211.8	ft²
Wetted Perimeter	122.58	ft
Top Width	122.34	ft
Actual Depth	2.85	ft
Critical Elevation	1,650.54	ft
Critical Slope	0.0228	ft/ft
Velocity	5.90	ft/s
Velocity Head	0.54	ft
Specific Energy	1,651.39	ft
Froude Number	0.79	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+54.88	0.050
0+54.88	1+47.00	0.040
1+47.00	2+59.67	0.050

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,660.00
0+06.31	1,658.00
0+14.86	1,656.00
0+28.04	1,654.00
0+36.59	1,652.00
0+54.88	1,650.00
1+04.01	1,648.00
1+32.70	1,648.00
1+47.00	1,650.00
1+99.96	1,652.00
2+16.11	1,654.00

Twin Buttes Wash - Approximate Method Section L-L
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
2+23.79	1,656.00
2+39.45	1,658.00
2+59.67	1,660.00

Caterpillar Tank Wash – Approximate Method Reach

Caterpillar Tank Wash - Approximate Method Section A-A
Worksheet for Irregular Channel

Project Description	
Worksheet	Caterpillar Tank Wash - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data	
Slope	0.0137 ft/ft
Discharge	1,210 cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results	
Mannings Coefficient	0.040
Water Surface Elevation	1,527.49 ft
Elevation Range	1,522.00 to 1,544.00
Flow Area	134.6 ft²
Wetted Perimeter	45.27 ft
Top Width	43.79 ft
Actual Depth	5.49 ft
Critical Elevation	1,527.26 ft
Critical Slope	0.0170 ft/ft
Velocity	8.99 ft/s
Velocity Head	1.26 ft
Specific Energy	1,528.75 ft
Froude Number	0.90
Flow Type	Subcritical

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+20.54	0.050
0+20.54	0+77.70	0.040
0+77.70	1+13.60	0.050

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,544.00
0+07.09	1,540.00
0+20.54	1,530.00
0+29.69	1,526.00
0+38.89	1,524.00
0+46.09	1,522.00
0+58.58	1,524.00
0+65.54	1,526.00
0+77.70	1,530.00
0+85.54	1,532.00
0+88.79	1,534.00

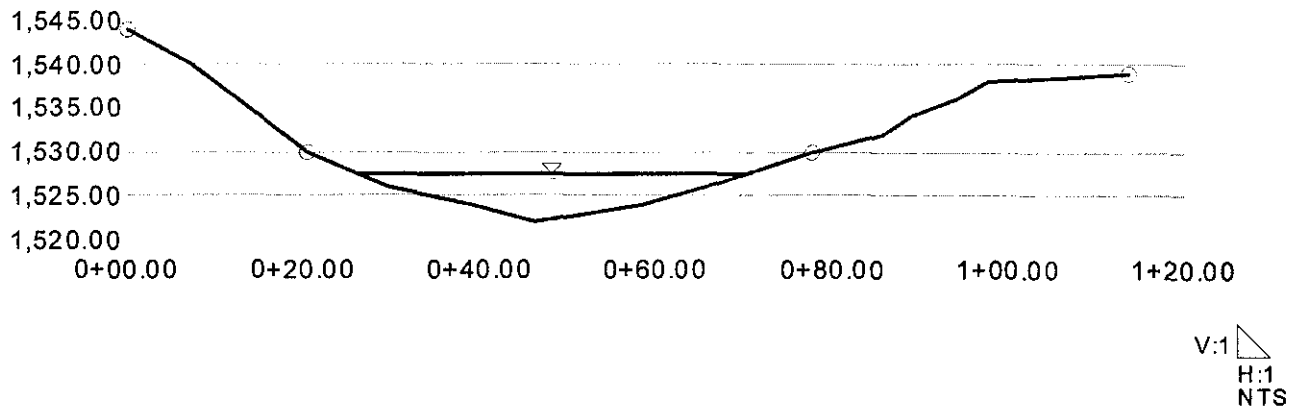
Caterpillar Tank Wash - Approximate Method Section A-A
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
0+94.11	1,536.00
0+97.60	1,538.00
1+13.60	1,538.80

Caterpillar Tank Wash - Approximate Method Section A-A
Cross Section for Irregular Channel

Project Description	
Worksheet	Caterpillar Tank Wash - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0137	ft/ft
Water Surface Elevation	1,527.49	ft
Elevation Range	1,522.00 to 1,544.00	
Discharge	1,210	cfs



Caterpillar Tank Wash - Approximate Method Section B-B
Worksheet for Irregular Channel

Project Description	
Worksheet	Caterpillar Tank Wash - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0231	ft/ft
Discharge	1,210	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.043	
Water Surface Elevation	1,541.43	ft
Elevation Range	1,538.00 to 1,560.00	
Flow Area	128.3	ft²
Wetted Perimeter	54.11	ft
Top Width	53.29	ft
Actual Depth	3.43	ft
Critical Elevation	1,541.56	ft
Critical Slope	0.0199	ft/ft
Velocity	9.43	ft/s
Velocity Head	1.38	ft
Specific Energy	1,542.81	ft
Froude Number	1.07	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+79.33	0.050
0+79.33	1+19.57	0.040
1+19.57	3+03.11	0.050

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,560.00
0+19.03	1,558.00
0+29.05	1,556.00
0+35.39	1,554.00
0+43.92	1,552.00
0+49.20	1,550.00
0+79.33	1,540.00
0+85.41	1,538.00
1+06.56	1,538.00
1+19.57	1,540.00
1+31.78	1,542.00

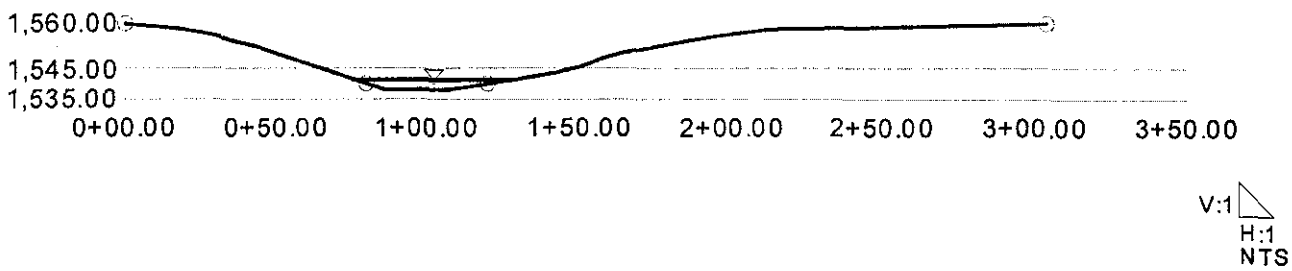
Caterpillar Tank Wash - Approximate Method Section B-B
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
1+43.19	1,544.00
1+50.90	1,546.00
1+56.97	1,548.00
1+63.91	1,550.00
1+74.10	1,552.00
1+84.36	1,554.00
1+96.44	1,556.00
2+12.37	1,558.00
3+03.11	1,560.00

Caterpillar Tank Wash - Approximate Method Section B-B
Cross Section for Irregular Channel

Project Description	
Worksheet	Caterpillar Tank Wash - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.043	
Slope	0.0231	ft/ft
Water Surface Elevation	1,541.43	ft
Elevation Range	1,538.00 to 1,560.00	
Discharge	*1,210*	*cfs*



Unnamed Wash 4 – Approximate Method Reach

Unnamed Wash 4 - Approximate Method Section A-A
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0146	ft/ft
Discharge	1,420	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	922.98	ft
Elevation Range	921.30 to 1,011.70	
Flow Area	271.2	ft²
Wetted Perimeter	214.93	ft
Top Width	214.53	ft
Actual Depth	1.68	ft
Critical Elevation	922.83	ft
Critical Slope	0.0226	ft/ft
Velocity	5.24	ft/s
Velocity Head	0.43	ft
Specific Energy	923.41	ft
Froude Number	0.82	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
1+00.00	2+78.50	0.050
2+78.50	5+09.20	0.040
5+09.20	8+26.50	0.050

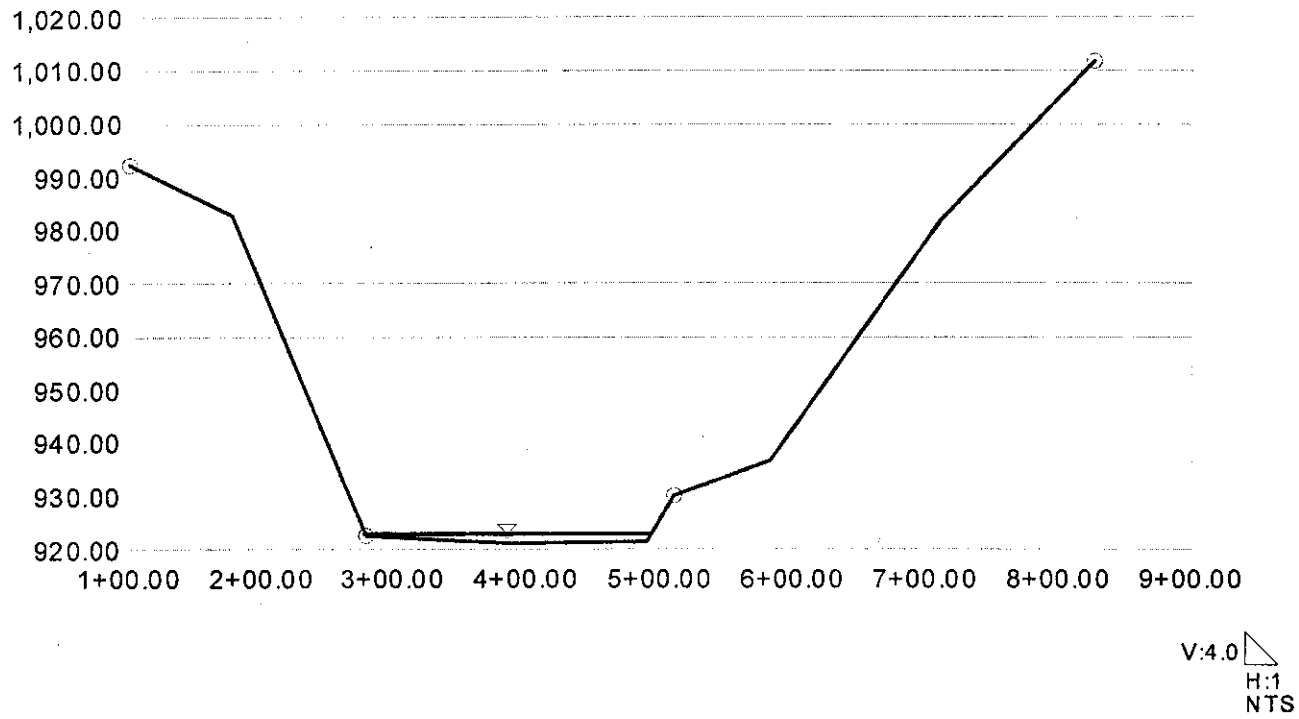
Natural Channel Points

Station (ft)	Elevation (ft)
1+00.00	992.20
1+77.60	982.80
2+78.50	922.60
3+87.30	921.30
4+89.20	921.60
5+09.20	930.30
5+82.00	936.80
7+10.90	982.00
8+26.50	1,011.70

Unnamed Wash 4 - Approximate Method Section A-A
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0146	ft/ft
Water Surface Elevation	922.98	ft
Elevation Range	921.30 to 1,011.70	
Discharge	1,420	cfs



Unnamed Wash 4 - Approximate Method Section B-B
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0305	ft/ft
Discharge	1,420	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	941.51	ft
Elevation Range	938.10 to 993.10	
Flow Area	147.6	ft²
Wetted Perimeter	81.38	ft
Top Width	80.65	ft
Actual Depth	3.41	ft
Critical Elevation	941.82	ft
Critical Slope	0.0185	ft/ft
Velocity	9.62	ft/s
Velocity Head	1.44	ft
Specific Energy	942.95	ft
Froude Number	1.25	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
1+00.00	1+43.30	0.050
1+43.30	2+60.70	0.040
2+60.70	4+36.60	0.050

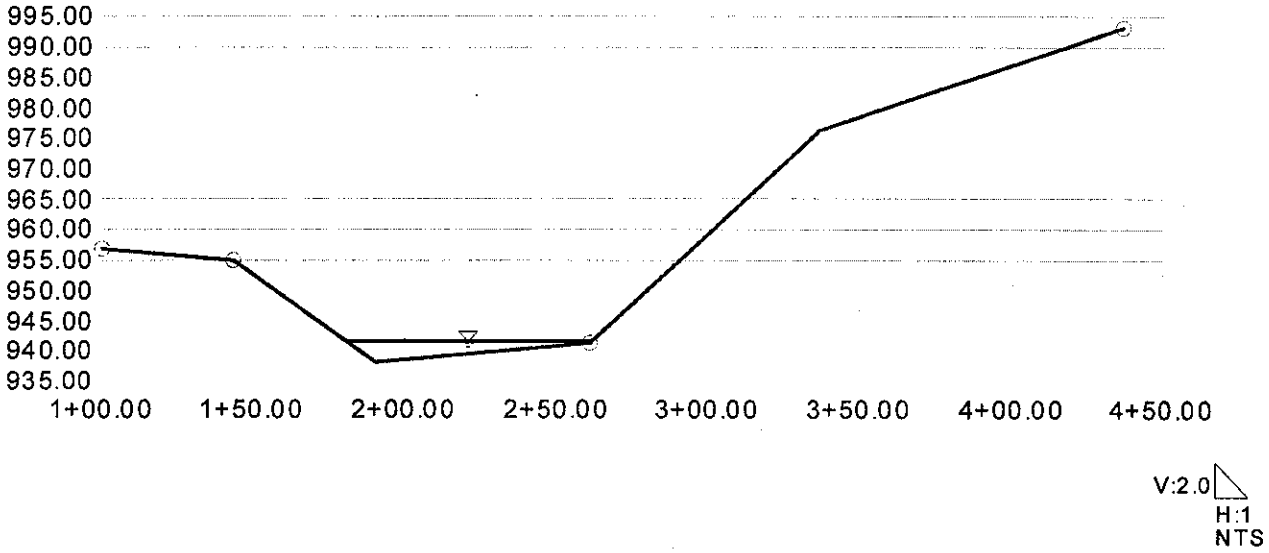
Natural Channel Points

Station (ft)	Elevation (ft)
1+00.00	956.70
1+43.30	955.00
1+90.20	938.10
2+60.70	941.20
3+36.70	976.20
4+36.60	993.10

Unnamed Wash 4 - Approximate Method Section B-B
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0305	ft/ft
Water Surface Elevation	941.51	ft
Elevation Range	938.10 to 993.10	
Discharge	1,420	cfs



Unnamed Wash 4 - Approximate Method Section C-C
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0186	ft/ft
Discharge	1,420	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	933.88	ft
Elevation Range	930.00 to 977.20	
Flow Area	182.9	ft²
Wetted Perimeter	96.46	ft
Top Width	94.32	ft
Actual Depth	3.88	ft
Critical Elevation	933.85	ft
Critical Slope	0.0193	ft/ft
Velocity	7.76	ft/s
Velocity Head	0.94	ft
Specific Energy	934.82	ft
Froude Number	0.98	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
1+00.00	1+67.10	0.050
1+67.10	2+99.40	0.040
2+99.40	5+06.90	0.050

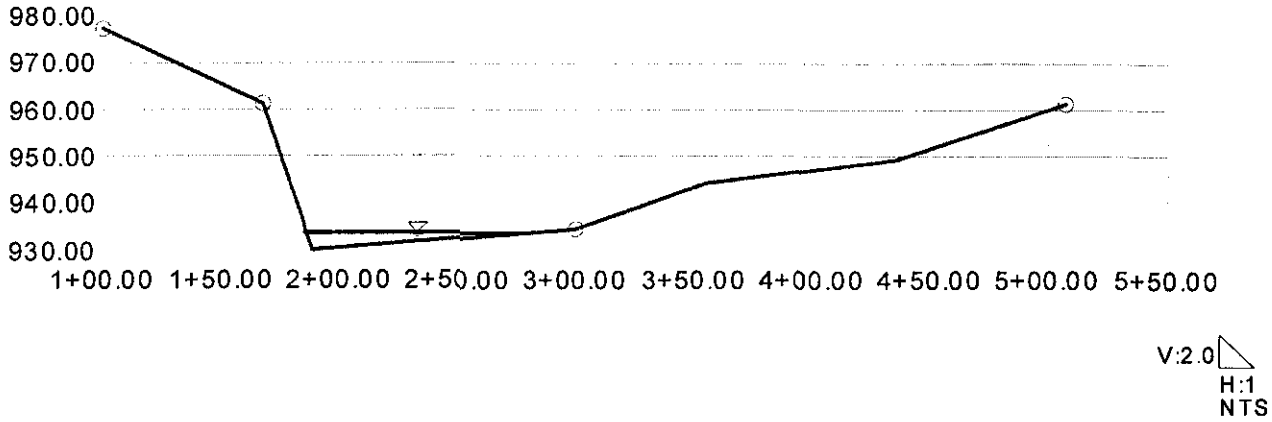
Natural Channel Points

Station (ft)	Elevation (ft)
1+00.00	977.20
1+67.10	961.20
1+88.30	930.00
2+99.40	934.70
3+55.00	944.30
4+35.40	949.20
5+06.90	961.40

Unnamed Wash 4 - Approximate Method Section C-C
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0186	ft/ft
Water Surface Elevation	933.88	ft
Elevation Range	930.00 to 977.20	
Discharge	1,420	cfs



Unnamed Wash 4 - Approximate Method Section D-D
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0185	ft/ft
Discharge	1,420	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	937.00	ft
Elevation Range	934.00 to 976.30	
Flow Area	162.2	ft²
Wetted Perimeter	71.12	ft
Top Width	70.25	ft
Actual Depth	3.00	ft
Critical Elevation	937.03	ft
Critical Slope	0.0179	ft/ft
Velocity	8.75	ft/s
Velocity Head	1.19	ft
Specific Energy	938.19	ft
Froude Number	1.02	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
1+00.00	1+56.90	0.050
1+56.90	3+21.00	0.040
3+21.00	4+70.60	0.050

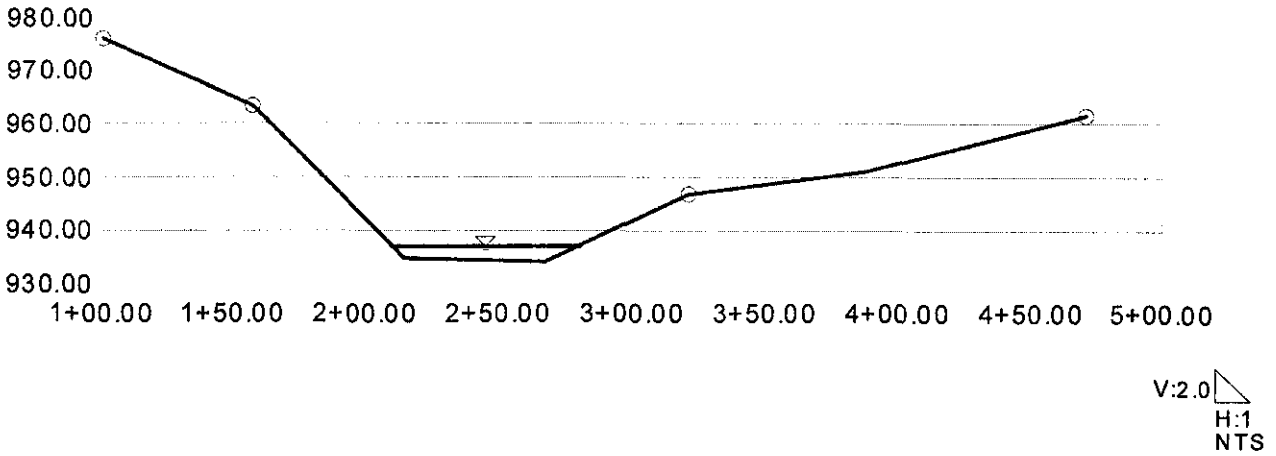
Natural Channel Points

Station (ft)	Elevation (ft)
1+00.00	976.30
1+56.90	963.40
2+14.40	934.80
2+67.60	934.00
3+21.00	946.70
3+88.30	951.10
4+70.60	961.50

Unnamed Wash 4 - Approximate Method Section D-D
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0185	ft/ft
Water Surface Elevation	937.00	ft
Elevation Range	934.00 to 976.30	
Discharge	1,420	cfs



Unnamed Wash 4 - Approximate Method Section E-E
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0178	ft/ft
Discharge	1,420	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.041	
Water Surface Elevation	967.67	ft
Elevation Range	963.40 to 990.10	
Flow Area	150.4	ft²
Wetted Perimeter	55.29	ft
Top Width	53.62	ft
Actual Depth	4.27	ft
Critical Elevation	967.66	ft
Critical Slope	0.0180	ft/ft
Velocity	9.44	ft/s
Velocity Head	1.39	ft
Specific Energy	969.06	ft
Froude Number	0.99	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
1+00.00	2+05.10	0.050
2+05.10	2+59.30	0.040
2+59.30	4+03.50	0.050

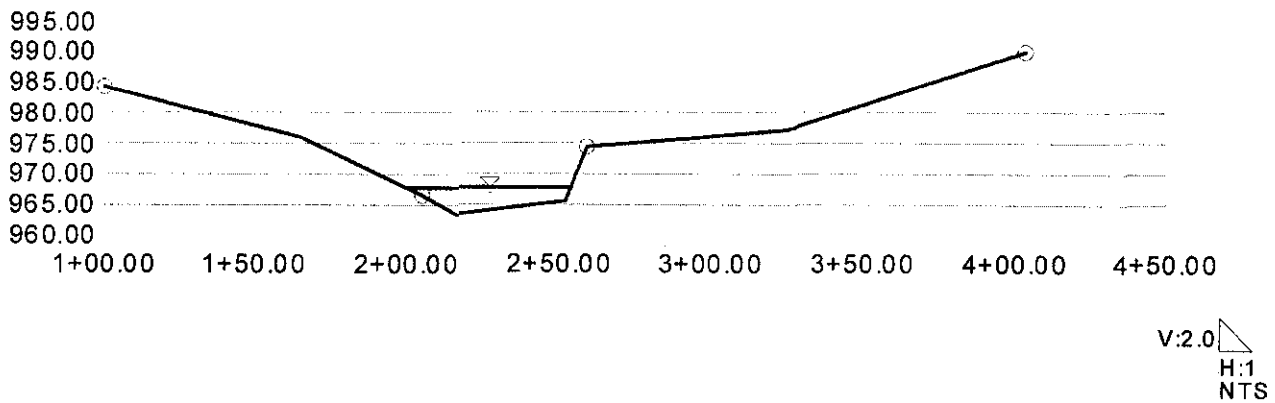
Natural Channel Points

Station (ft)	Elevation (ft)
1+00.00	984.30
1+65.10	975.90
2+05.10	966.60
2+16.70	963.40
2+52.40	965.50
2+59.30	974.30
3+25.00	977.40
4+03.50	990.10

Unnamed Wash 4 - Approximate Method Section E-E
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.041	
Slope	0.0178	ft/ft
Water Surface Elevation	967.67	ft
Elevation Range	963.40 to 990.10	
Discharge	1,420	cfs



Unnamed Wash 4 - Approximate Method Section F-F
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.005300	ft/ft
Discharge	772.00	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,317.07	ft
Elevation Range	1,313.82 to 1,318.88	
Flow Area	379.4	ft²
Wetted Perimeter	487.30	ft
Top Width	487.15	ft
Actual Depth	3.25	ft
Critical Elevation	1,316.53	ft
Critical Slope	0.034603	ft/ft
Velocity	2.03	ft/s
Velocity Head	0.06	ft
Specific Energy	1,317.13	ft
Froude Number	0.41	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
1+00.00	11+19.02	0.045

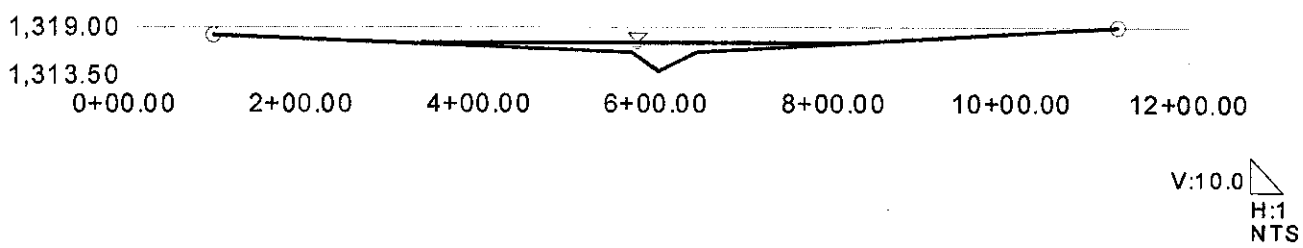
Natural Channel Points

Station (ft)	Elevation (ft)
1+00.00	1,318.12
5+72.03	1,316.00
6+00.89	1,313.82
6+45.30	1,316.00
11+19.02	1,318.88

Unnamed Wash 4 - Approximate Method Section F-F
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.005300	ft/ft
Water Surface Elevation	1,317.07	ft
Elevation Range	1,313.82 to 1,318.88	
Discharge	772.00	cfs



Unnamed Wash 4 - Approximate Method Section G-G
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section G-G
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.008200	ft/ft
Discharge	772.00	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,322.80	ft
Elevation Range	1,321.64 to 1,326.00	
Flow Area	315.6	ft²
Wetted Perimeter	426.39	ft
Top Width	426.38	ft
Actual Depth	1.16	ft
Critical Elevation	1,322.46	ft
Critical Slope	0.036274	ft/ft
Velocity	2.45	ft/s
Velocity Head	0.09	ft
Specific Energy	1,322.89	ft
Froude Number	0.50	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
1+00.00	12+39.80	0.045

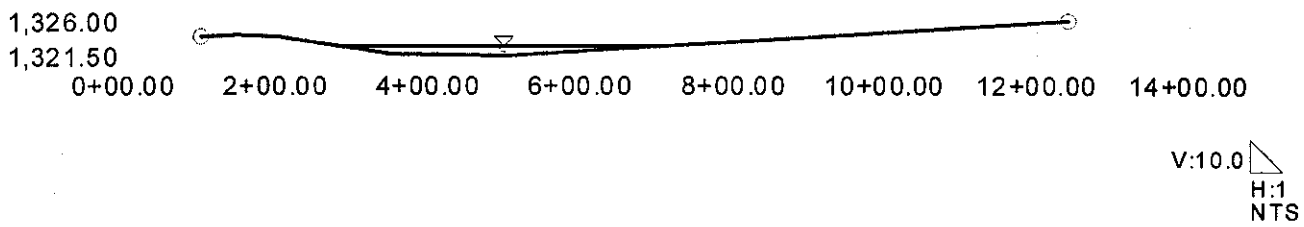
Natural Channel Points

Station (ft)	Elevation (ft)
1+00.00	1,324.00
1+47.63	1,324.30
2+03.16	1,324.00
3+49.46	1,321.84
5+05.89	1,321.64
6+66.35	1,322.54
9+20.07	1,324.00
12+39.80	1,326.00

Unnamed Wash 4 - Approximate Method Section G-G
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section G-G
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.008200	ft/ft
Water Surface Elevation	1,322.80	ft
Elevation Range	1,321.64 to 1,326.00	
Discharge	772.00	cfs



Unnamed Wash 4 - Approximate Method Section H-H
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section H-H
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.007600	ft/ft
Discharge	772.00	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,329.15	ft
Elevation Range	1,327.18 to 1,344.00	
Flow Area	292.5	ft²
Wetted Perimeter	333.27	ft
Top Width	332.76	ft
Actual Depth	1.97	ft
Critical Elevation	1,328.73	ft
Critical Slope	0.033903	ft/ft
Velocity	2.64	ft/s
Velocity Head	0.11	ft
Specific Energy	1,329.26	ft
Froude Number	0.50	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
1+00.00	5+29.80	0.045

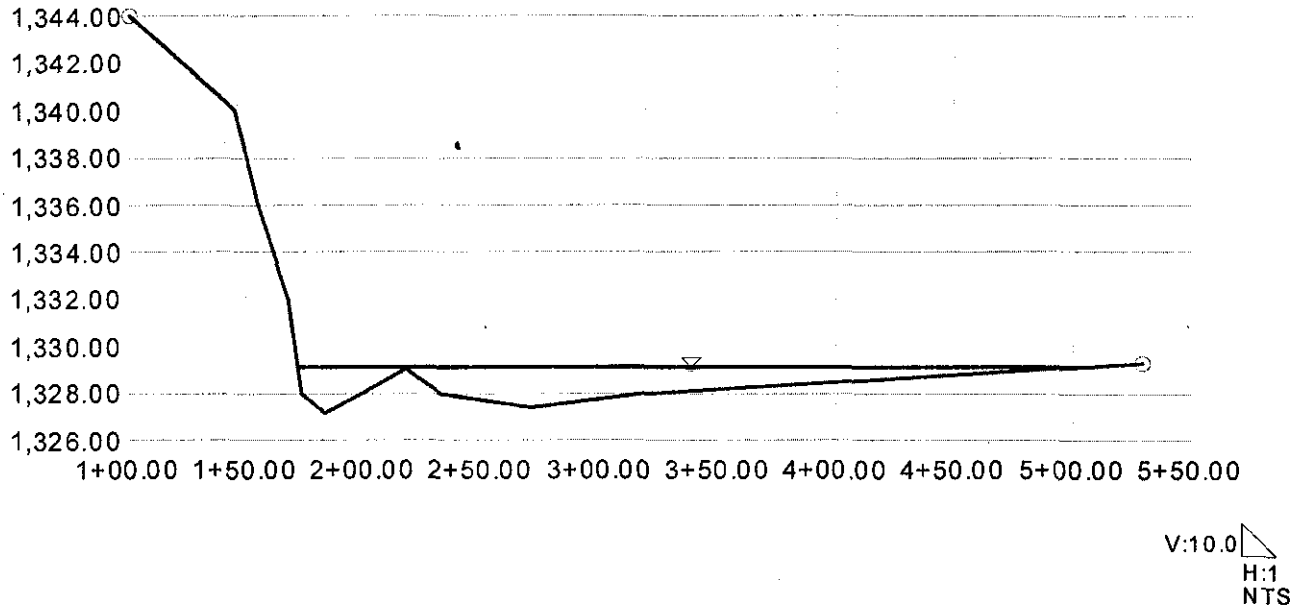
Natural Channel Points

Station (ft)	Elevation (ft)
1+00.00	1,344.00
1+45.27	1,340.00
1+54.59	1,336.00
1+67.95	1,332.00
1+73.48	1,328.00
1+83.28	1,327.18
1+98.63	1,328.00
2+17.94	1,329.08
2+32.66	1,328.00
2+71.01	1,327.42
3+18.53	1,328.00
5+29.80	1,329.31

Unnamed Wash 4 - Approximate Method Section H-H
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section H-H
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.007600	ft/ft
Water Surface Elevation	1,329.15	ft
Elevation Range	1,327.18 to 1,344.00	
Discharge	772.00	cfs



Unnamed Wash 4 - Approximate Method Section I-I
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section I-I
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.009200	ft/ft
Discharge	689.00	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,333.16	ft
Elevation Range	1,329.87 to 1,356.00	
Flow Area	225.9	ft²
Wetted Perimeter	238.96	ft
Top Width	238.45	ft
Actual Depth	3.29	ft
Critical Elevation	1,332.75	ft
Critical Slope	0.032421	ft/ft
Velocity	3.05	ft/s
Velocity Head	0.14	ft
Specific Energy	1,333.31	ft
Froude Number	0.55	
Flow Type	Subcritical	

Calculation Messages:
Flow is divided.

Roughness Segments		
Start Station	End Station	Mannings Coefficient
1+00.00	5+54.76	0.045

Natural Channel Points	
Station (ft)	Elevation (ft)
1+00.00	1,356.00
2+15.14	1,352.00
2+26.83	1,348.00
2+38.17	1,344.00
2+43.59	1,340.00
2+52.25	1,336.00
2+66.28	1,332.00
2+83.40	1,329.87
3+01.87	1,332.00
3+17.58	1,333.22

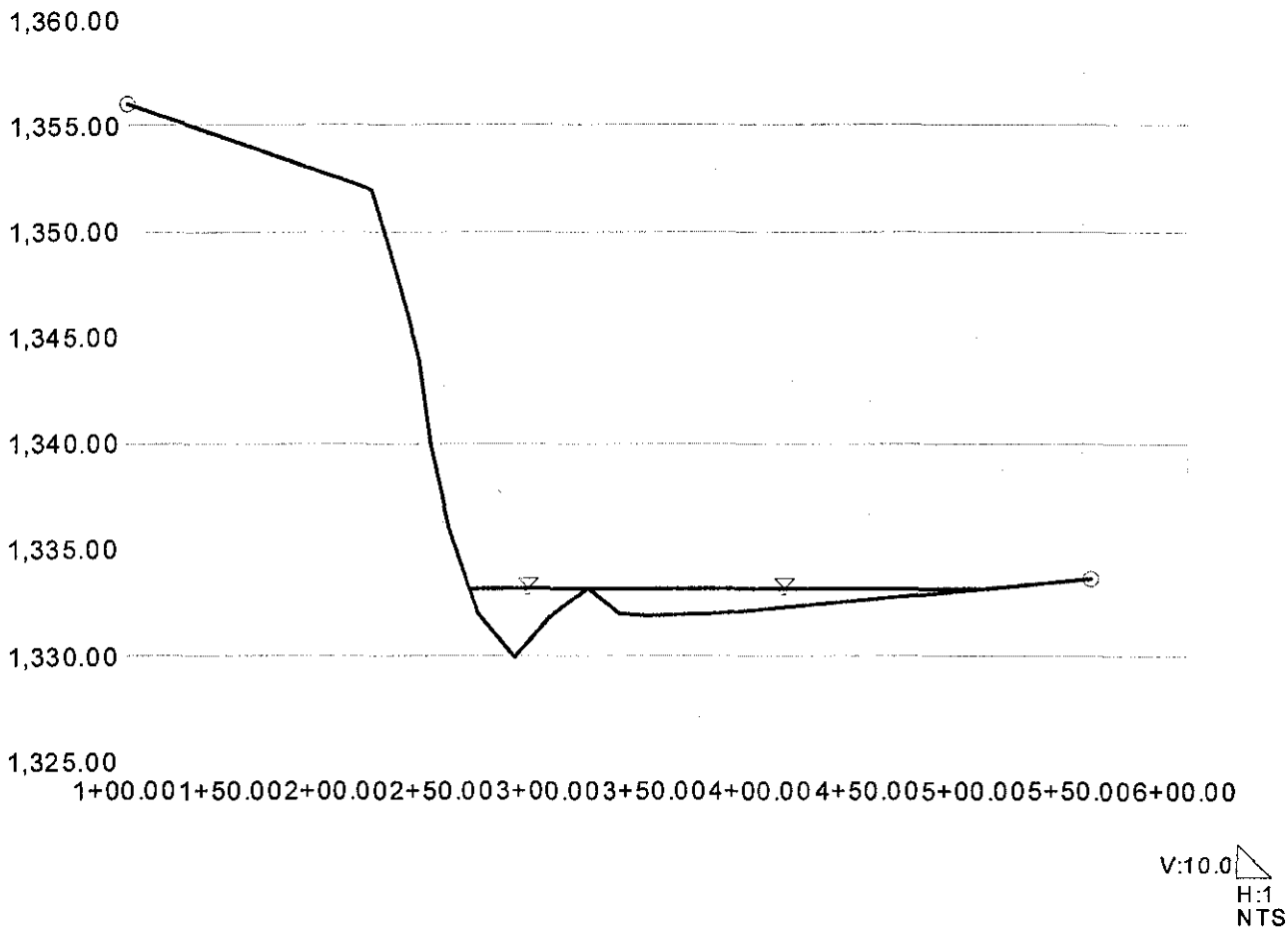
Unnamed Wash 4 - Approximate Method Section I-I
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
3+32.69	1,332.00
3+44.74	1,331.92
3+78.60	1,332.00
5+54.76	1,333.66

Unnamed Wash 4 - Approximate Method Section I-I
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section I-I
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.009200	ft/ft
Water Surface Elevation	1,333.16	ft
Elevation Range	1,329.87 to 1,356.00	
Discharge	689.00	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section J-J
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.009200	ft/ft
Discharge	689.00	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	100.70	ft
Elevation Range	96.90 to 103.30	
Flow Area	113.8	ft²
Wetted Perimeter	43.03	ft
Top Width	41.79	ft
Actual Depth	3.80	ft
Critical Elevation	99.89	ft
Critical Slope	0.023454	ft/ft
Velocity	6.06	ft/s
Velocity Head	0.57	ft
Specific Energy	101.27	ft
Froude Number	0.65	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+83.00	0.045

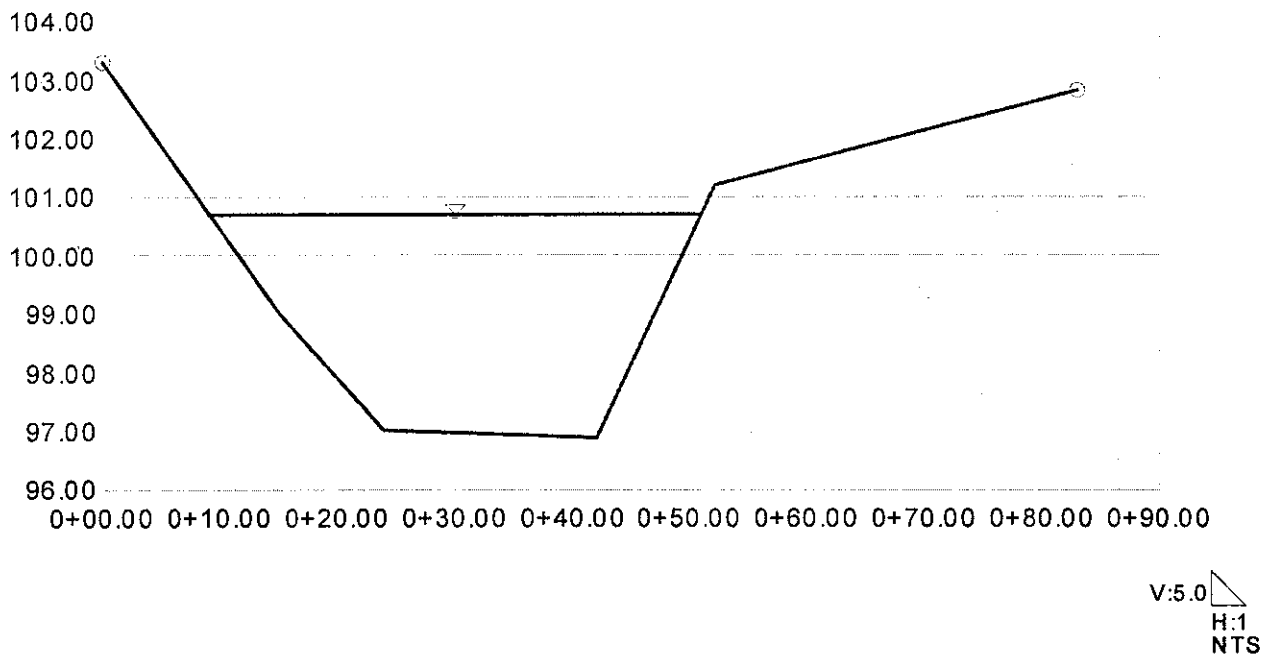
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	103.30
0+15.00	99.00
0+24.00	97.00
0+42.00	96.90
0+52.00	101.20
0+83.00	102.80

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section J-J
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.009200	ft/ft
Water Surface Elevation	100.70	ft
Elevation Range	96.90 to 103.30	
Discharge	689.00	cfs



Unnamed Wash 4 - Approximate Method Section K-K
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section K-K
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.012000	ft/ft
Discharge	689.00	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,335.91	ft
Elevation Range	1,332.00 to 1,340.00	
Flow Area	122.5	ft²
Wetted Perimeter	63.19	ft
Top Width	62.67	ft
Actual Depth	3.91	ft
Critical Elevation	1,335.41	ft
Critical Slope	0.024980	ft/ft
Velocity	5.62	ft/s
Velocity Head	0.49	ft
Specific Energy	1,336.40	ft
Froude Number	0.71	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+89.78	0.045

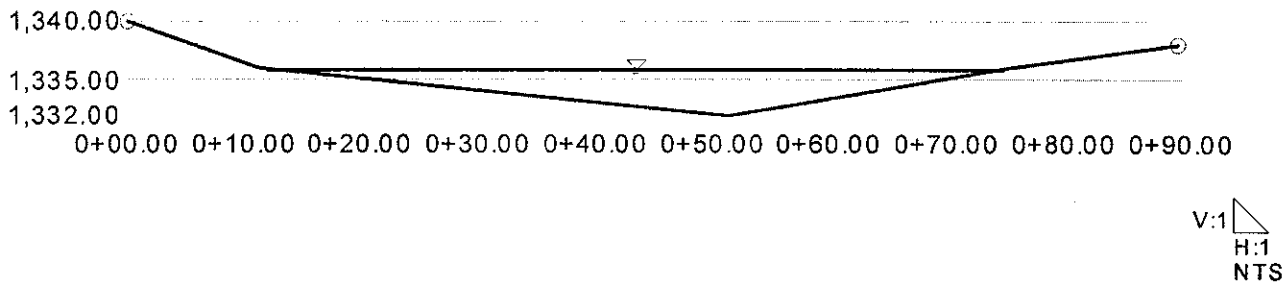
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,340.00
0+11.15	1,336.00
0+51.42	1,332.00
0+75.27	1,336.00
0+89.78	1,338.00

Unnamed Wash 4 - Approximate Method Section K-K
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 4 - Approximate Method Section K-K
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.012000	ft/ft
Water Surface Elevation	1,335.91	ft
Elevation Range	1,332.00 to 1,340.00	
Discharge	689.00	cfs



Tributary 1 to Unnamed Wash 4 - Approximate Method Section A-A
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 4 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.002820	ft/ft
Discharge	772.00	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.038	
Water Surface Elevation	101.60	ft
Elevation Range	96.20 to 101.67	
Flow Area	283.9	ft²
Wetted Perimeter	192.02	ft
Top Width	190.28	ft
Actual Depth	5.40	ft
Critical Elevation	99.94	ft
Critical Slope	0.016448	ft/ft
Velocity	2.72	ft/s
Velocity Head	0.11	ft
Specific Energy	101.71	ft
Froude Number	0.39	
Flow Type	Subcritical	

Calculation Messages:
Water elevation exceeds lowest end station by 0.7951881 ft.

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+50.00	0.035
1+50.00	1+97.00	0.045

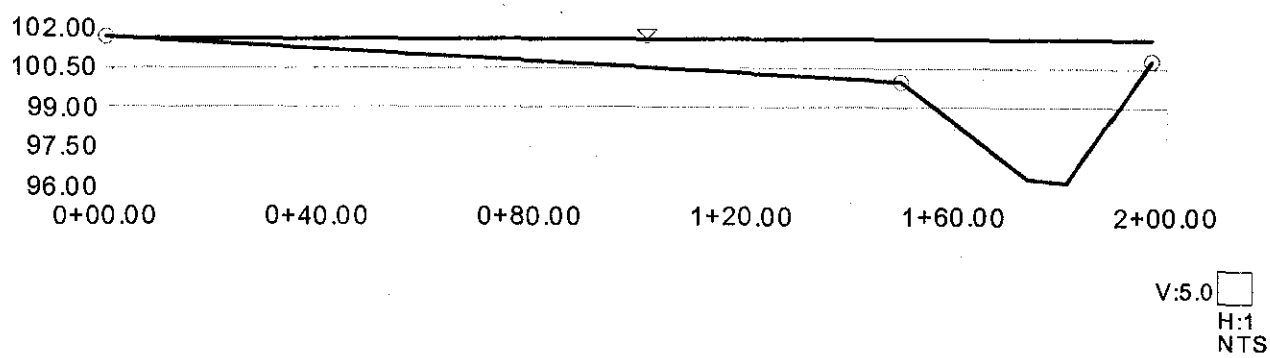
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	101.67
1+50.00	100.00
1+74.00	96.30
1+81.00	96.20
1+97.00	100.80

Tributary 1 to Unnamed Wash 4 - Approximate Method Section A-A
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 4 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.038	
Slope	0.002820	ft/ft
Water Surface Elevation	101.60	ft
Elevation Range	96.20 to 101.67	
Discharge	772.00	cfs



Tributary 1 to Unnamed Wash 4 - Approximate Method Section B-B
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 4 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.002820	ft/ft
Discharge	772.00	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.038	
Water Surface Elevation	102.07	ft
Elevation Range	98.00 to 102.60	
Flow Area	272.0	ft²
Wetted Perimeter	169.63	ft
Top Width	168.45	ft
Actual Depth	4.07	ft
Critical Elevation	101.00	ft
Critical Slope	0.020056	ft/ft
Velocity	2.84	ft/s
Velocity Head	0.13	ft
Specific Energy	102.20	ft
Froude Number	0.39	
Flow Type	Subcritical	

Calculation Messages:
Water elevation exceeds lowest end station by 0.77051627 ft.

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+50.00	0.035
1+50.00	1+99.00	0.045

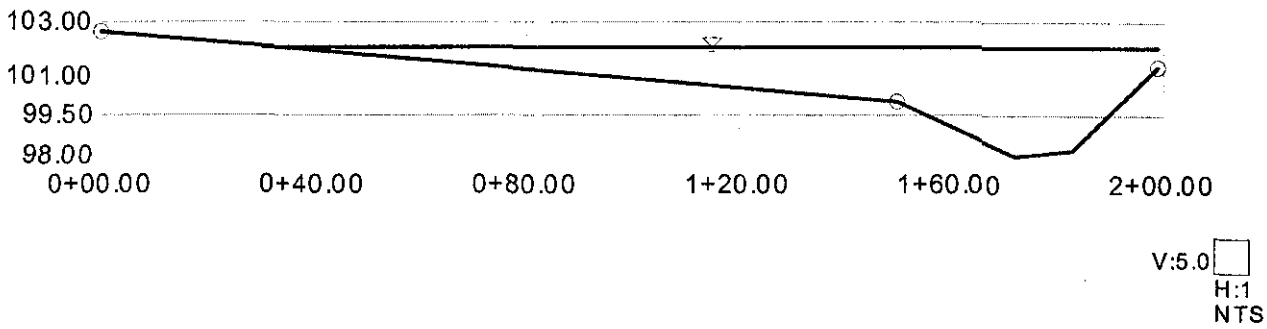
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	102.60
1+50.00	100.00
1+72.00	98.00
1+83.00	98.20
1+99.00	101.30

Tributary 1 to Unnamed Wash 4 - Approximate Method Section B-B
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 4 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.038	
Slope	0.002820	ft/ft
Water Surface Elevation	102.07	ft
Elevation Range	98.00 to 102.60	
Discharge	772.00	cfs



Unnamed Wash 5 – Approximate Method Reach

Unnamed Wash 5 - Approximate Method Section A-A
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	*Manning's Formula*
Solve For	Channel Depth

Input Data		
Slope	0.0044	ft/ft
Discharge	1,160	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,347.27	ft
Elevation Range	1,342.90 to 1,360.00	
Flow Area	315.9	ft²
Wetted Perimeter	145.52	ft
Top Width	145.24	ft
Actual Depth	4.37	ft
Critical Elevation	1,346.05	ft
Critical Slope	0.0255	ft/ft
Velocity	3.67	ft/s
Velocity Head	0.21	ft
Specific Energy	1,347.48	ft
Froude Number	0.44	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+46.96	0.050
0+46.96	2+16.73	0.045
2+16.73	2+82.94	0.050

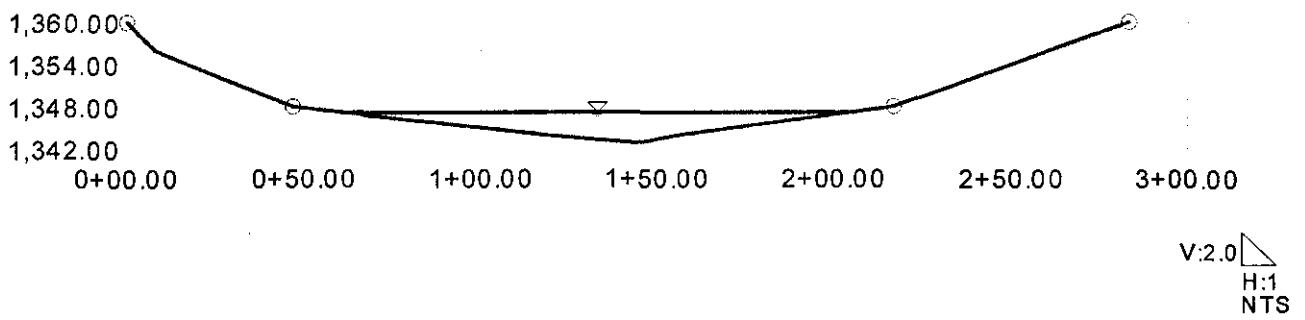
Natural Channel Points

Station (ft)	*Elevation (ft)*
0+00.00	1,360.00
0+08.19	1,356.00
0+27.60	1,352.00
0+46.96	1,348.00
1+19.46	1,344.00
1+44.00	1,342.90
1+55.50	1,344.00
2+16.73	1,348.00
2+82.94	1,360.00

Unnamed Wash 5 - Approximate Method Section A-A
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.0044	ft/ft
Water Surface Elevation	1,347.27	ft
Elevation Range	1,342.90 to 1,360.00	
Discharge	1,160	cfs



Unnamed Wash 5 - Approximate Method Section B-B
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0128	ft/ft
Discharge	1,160	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,353.16	ft
Elevation Range	1,350.70 to 1,360.00	
Flow Area	223.4	ft²
Wetted Perimeter	136.29	ft
Top Width	136.09	ft
Actual Depth	2.46	ft
Critical Elevation	1,352.81	ft
Critical Slope	0.0267	ft/ft
Velocity	5.19	ft/s
Velocity Head	0.42	ft
Specific Energy	1,353.58	ft
Froude Number	0.71	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+47.23	0.050
0+47.23	2+29.25	0.045
2+29.25	2+46.36	0.050

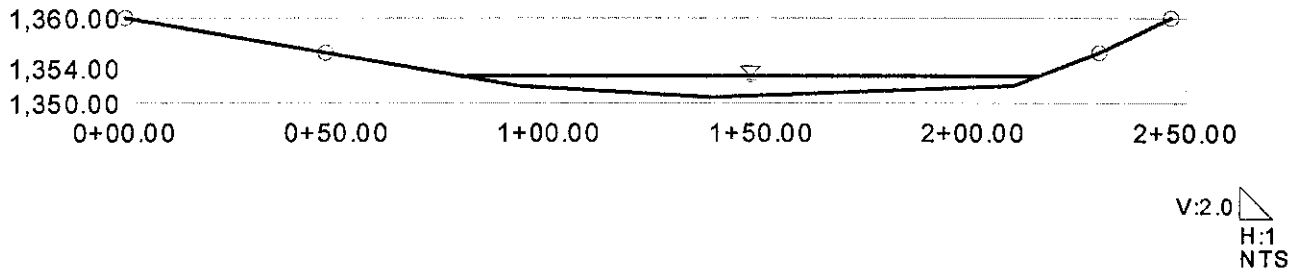
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,360.00
0+47.23	1,356.00
0+92.18	1,352.00
1+37.94	1,350.70
2+09.48	1,352.00
2+29.25	1,356.00
2+46.36	1,360.00

Unnamed Wash 5 - Approximate Method Section B-B
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.0128	ft/ft
Water Surface Elevation	1,353.16	ft
Elevation Range	1,350.70 to 1,360.00	
Discharge	1,160	cfs



Unnamed Wash 5 - Approximate Method Section C-C
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0070	ft/ft
Discharge	1,160	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.046	
Water Surface Elevation	1,364.52	ft
Elevation Range	1,361.90 to 1,376.00	
Flow Area	343.4	ft²
Wetted Perimeter	248.06	ft
Top Width	247.99	ft
Actual Depth	2.62	ft
Critical Elevation	1,363.90	ft
Critical Slope	0.0304	ft/ft
Velocity	3.38	ft/s
Velocity Head	0.18	ft
Specific Energy	1,364.69	ft
Froude Number	0.51	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	3+08.95	0.050
3+08.95	5+22.72	0.045
5+22.72	6+04.96	0.050

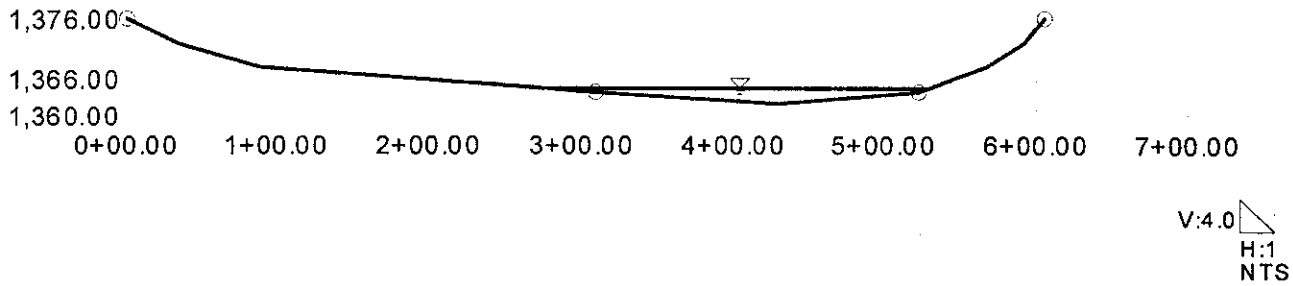
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,376.00
0+34.15	1,372.00
0+87.58	1,368.00
3+08.95	1,364.00
4+29.75	1,361.90
5+22.72	1,364.00
5+67.12	1,368.00
5+91.30	1,372.00
6+04.96	1,376.00

Unnamed Wash 5 - Approximate Method Section C-C
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.046	
Slope	0.0070	ft/ft
Water Surface Elevation	1,364.52	ft
Elevation Range	1,361.90 to 1,376.00	
Discharge	1,160	cfs



Unnamed Wash 5 - Approximate Method Section D-D
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0089	ft/ft
Discharge	1,160	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,378.11	ft
Elevation Range	1,374.40 to 1,392.00	
Flow Area	226.9	ft²
Wetted Perimeter	107.89	ft
Top Width	107.59	ft
Actual Depth	3.71	ft
Critical Elevation	1,377.40	ft
Critical Slope	0.0248	ft/ft
Velocity	5.11	ft/s
Velocity Head	0.41	ft
Specific Energy	1,378.51	ft
Froude Number	0.62	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+04.20	0.050
1+04.20	2+53.43	0.045
2+53.43	2+89.26	0.050

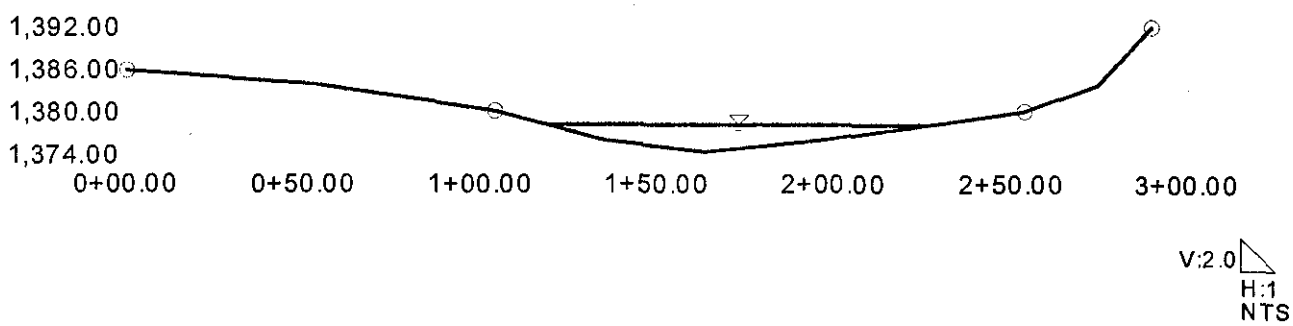
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,385.90
0+52.19	1,384.00
1+04.20	1,380.00
1+34.76	1,376.00
1+63.35	1,374.40
1+96.04	1,376.00
2+53.43	1,380.00
2+73.88	1,384.00
2+89.26	1,392.00

Unnamed Wash 5 - Approximate Method Section D-D
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.0089	ft/ft
Water Surface Elevation	1,378.11	ft
Elevation Range	1,374.40 to 1,392.00	
Discharge	1,160	cfs



Unnamed Wash 5 - Approximate Method Section E-E
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0118	ft/ft
Discharge	1,160	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.047	
Water Surface Elevation	1,389.66	ft
Elevation Range	1,386.40 to 1,404.00	
Flow Area	268.1	ft²
Wetted Perimeter	191.20	ft
Top Width	190.57	ft
Actual Depth	3.26	ft
Critical Elevation	1,389.25	ft
Critical Slope	0.0308	ft/ft
Velocity	4.33	ft/s
Velocity Head	0.29	ft
Specific Energy	1,389.95	ft
Froude Number	0.64	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+58.24	0.050
1+58.24	2+87.93	0.045
2+87.93	3+72.59	0.050

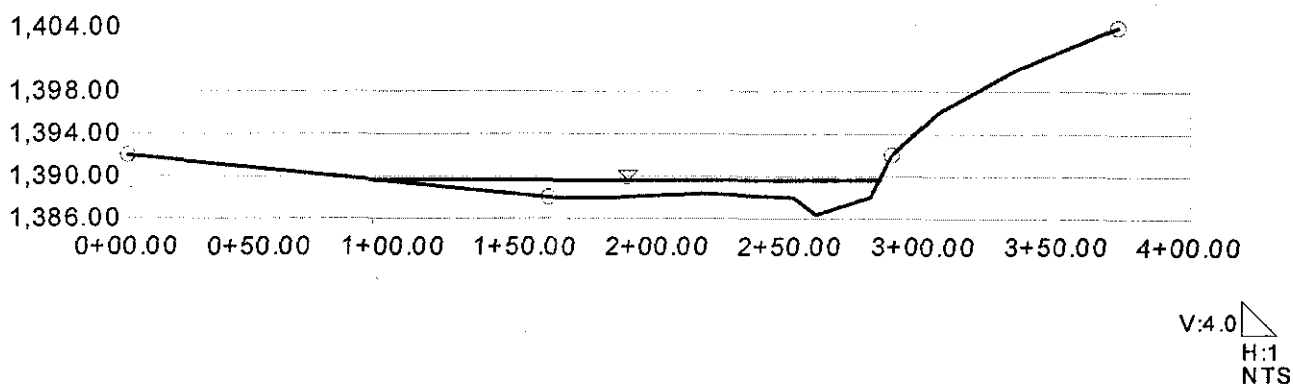
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,392.00
1+58.24	1,388.00
1+80.93	1,388.00
2+17.51	1,388.40
2+50.83	1,388.00
2+59.05	1,386.40
2+79.83	1,388.00
2+87.93	1,392.00
3+04.98	1,396.00
3+34.04	1,400.00
3+72.59	1,404.00

Unnamed Wash 5 - Approximate Method Section E-E
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

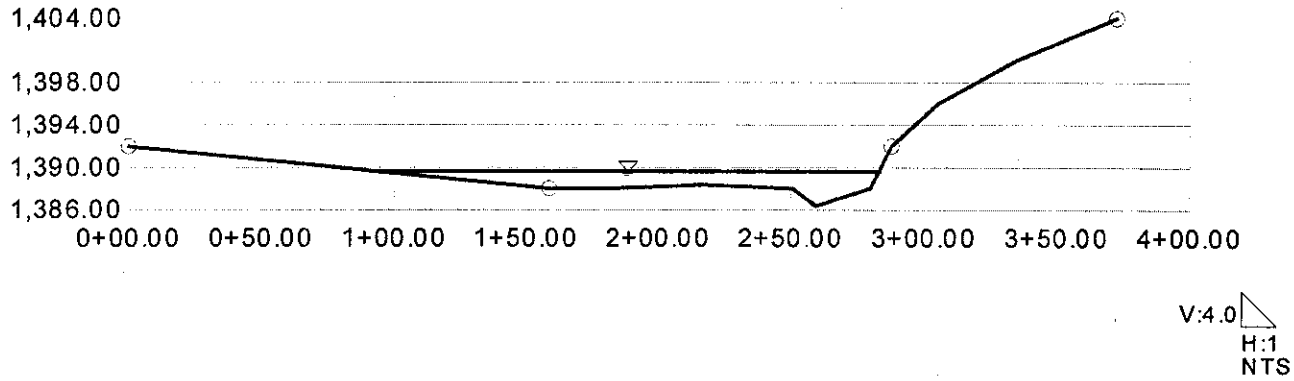
Section Data		
Mannings Coefficient	0.047	
Slope	0.0118	ft/ft
Water Surface Elevation	1,389.66	ft
Elevation Range	1,386.40 to 1,404.00	
Discharge	1,160	cfs



Unnamed Wash 5 - Approximate Method Section E-E
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.047	
Slope	0.0118	ft/ft
Water Surface Elevation	1,389.66	ft
Elevation Range	1,386.40 to 1,404.00	
Discharge	1,160	cfs



Unnamed Wash 5 - Approximate Method Section F-F
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0082	ft/ft
Discharge	1,160	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,402.08	ft
Elevation Range	1,397.90 to 1,412.00	
Flow Area	237.0	ft²
Wetted Perimeter	113.16	ft
Top Width	112.84	ft
Actual Depth	4.18	ft
Critical Elevation	1,401.29	ft
Critical Slope	0.0248	ft/ft
Velocity	4.89	ft/s
Velocity Head	0.37	ft
Specific Energy	1,402.45	ft
Froude Number	0.60	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+64.17	0.045
1+64.17	2+42.25	0.050

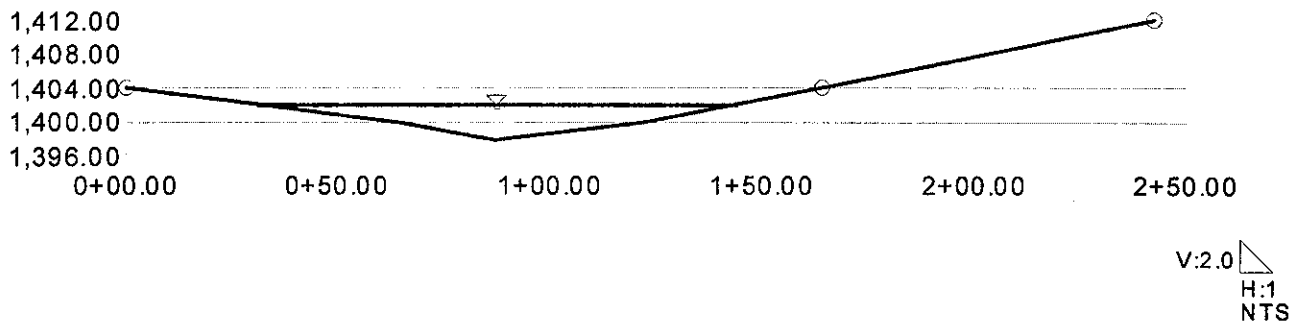
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,404.00
0+64.35	1,400.00
0+86.50	1,397.90
1+21.64	1,400.00
1+64.17	1,404.00
2+01.57	1,408.00
2+42.25	1,412.00

Unnamed Wash 5 - Approximate Method Section F-F
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.0082	ft/ft
Water Surface Elevation	1,402.08	ft
Elevation Range	1,397.90 to 1,412.00	
Discharge	1,160	cfs



Unnamed Wash 5 - Approximate Method Section G-G
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section G-G
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0124	ft/ft
Discharge	1,160	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,411.70	ft
Elevation Range	1,407.30 to 1,416.00	
Flow Area	147.6	ft²
Wetted Perimeter	47.26	ft
Top Width	45.54	ft
Actual Depth	4.40	ft
Critical Elevation	1,411.11	ft
Critical Slope	0.0218	ft/ft
Velocity	7.86	ft/s
Velocity Head	0.96	ft
Specific Energy	1,412.66	ft
Froude Number	0.77	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+11.72	0.050
0+11.72	0+58.60	0.045
0+58.60	0+96.64	0.050

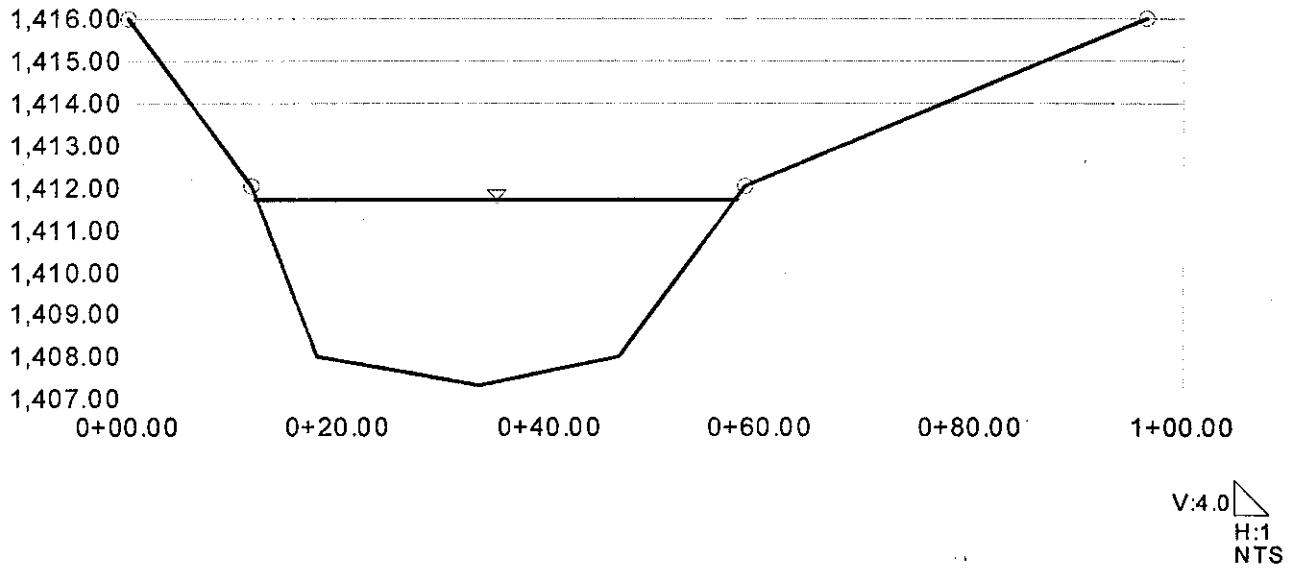
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,416.00
0+11.72	1,412.00
0+18.01	1,408.00
0+33.24	1,407.30
0+46.74	1,408.00
0+58.60	1,412.00
0+96.64	1,416.00

Unnamed Wash 5 - Approximate Method Section G-G
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section G-G
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.0124	ft/ft
Water Surface Elevation	1,411.70	ft
Elevation Range	1,407.30 to 1,416.00	
Discharge	1,160	cfs



Unnamed Wash 5 - Approximate Method Section H-H
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section H-H
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0118	ft/ft
Discharge	1,160	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.048	
Water Surface Elevation	1,419.97	ft
Elevation Range	1,415.03 to 1,421.70	
Flow Area	314.2	ft²
Wetted Perimeter	269.51	ft
Top Width	268.76	ft
Actual Depth	4.94	ft
Critical Elevation	1,418.77	ft
Critical Slope	0.0276	ft/ft
Velocity	3.69	ft/s
Velocity Head	0.21	ft
Specific Energy	1,420.18	ft
Froude Number	0.60	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	2+37.63	0.050
2+37.63	3+22.90	0.045
3+22.90	3+50.88	0.050

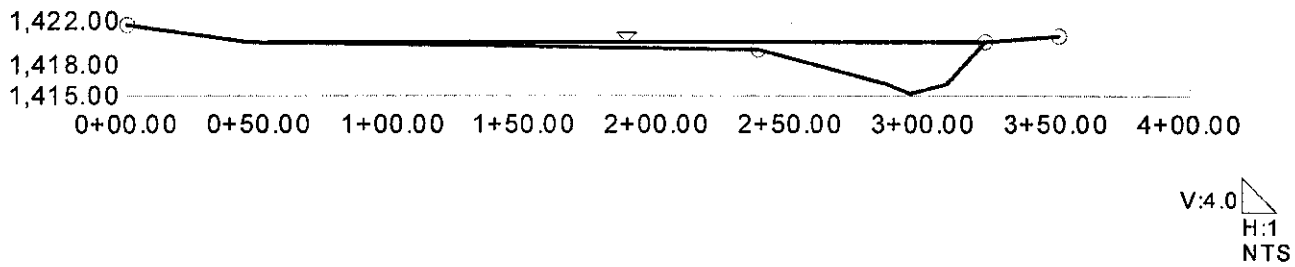
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,421.70
0+45.65	1,420.00
2+37.63	1,419.20
2+85.89	1,416.00
2+94.92	1,415.03
3+08.87	1,416.00
3+22.90	1,420.00
3+50.88	1,420.60

Unnamed Wash 5 - Approximate Method Section H-H
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section H-H
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.048	
Slope	0.0118	ft/ft
Water Surface Elevation	1,419.97	ft
Elevation Range	1,415.03 to 1,421.70	
Discharge	1,160	cfs



Unnamed Wash 5 - Approximate Method Section I-I
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section I-I
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0151	ft/ft
Discharge	1,160	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,434.22	ft
Elevation Range	1,431.30 to 1,440.00	
Flow Area	184.5	ft²
Wetted Perimeter	95.72	ft
Top Width	95.44	ft
Actual Depth	2.92	ft
Critical Elevation	1,433.90	ft
Critical Slope	0.0246	ft/ft
Velocity	6.29	ft/s
Velocity Head	0.61	ft
Specific Energy	1,434.83	ft
Froude Number	0.80	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+28.79	0.045
1+28.79	2+82.21	0.050

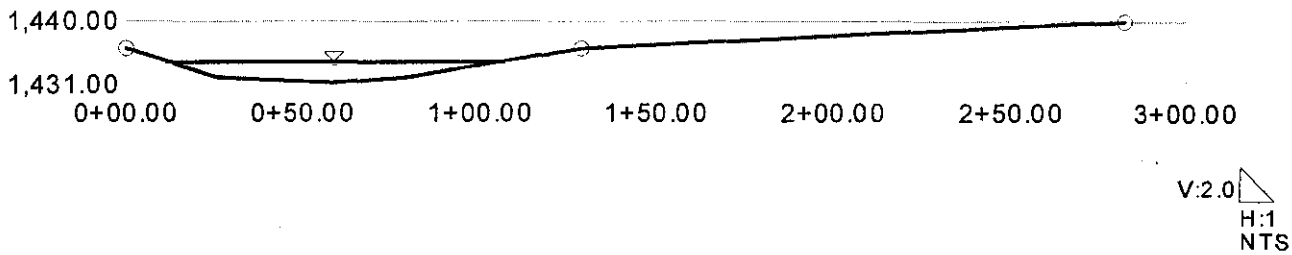
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,436.00
0+25.49	1,432.00
0+58.45	1,431.30
0+79.30	1,432.00
1+28.79	1,436.00
2+82.21	1,440.00

Unnamed Wash 5 - Approximate Method Section I-I
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section I-I
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.0151	ft/ft
Water Surface Elevation	1,434.22	ft
Elevation Range	1,431.30 to 1,440.00	
Discharge	1,160	cfs



Unnamed Wash 5 - Approximate Method Section J-J
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section J-J
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0151	ft/ft
Discharge	880	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,448.87	ft
Elevation Range	1,445.40 to 1,460.00	
Flow Area	147.3	ft²
Wetted Perimeter	82.39	ft
Top Width	82.00	ft
Actual Depth	3.47	ft
Critical Elevation	1,448.55	ft
Critical Slope	0.0253	ft/ft
Velocity	5.98	ft/s
Velocity Head	0.55	ft
Specific Energy	1,449.43	ft
Froude Number	0.79	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+30.62	0.070
1+30.62	2+76.51	0.045
2+76.51	3+47.42	0.070

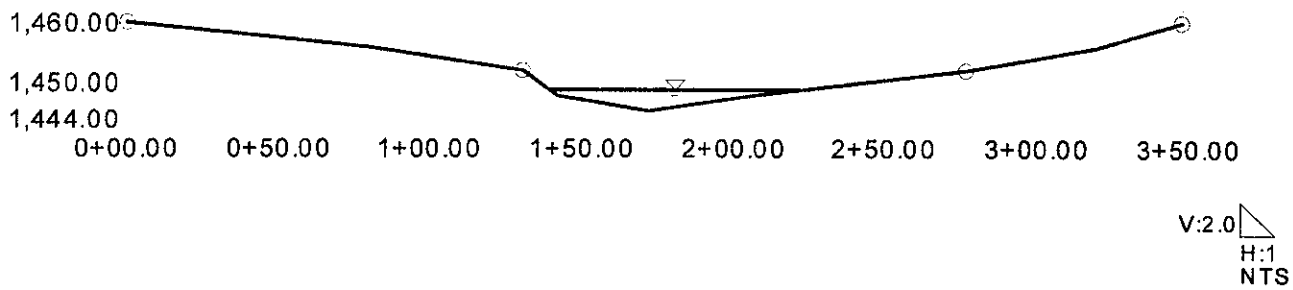
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,460.00
0+79.86	1,456.00
1+30.62	1,452.00
1+41.81	1,448.00
1+71.64	1,445.40
2+05.93	1,448.00
2+76.51	1,452.00
3+19.66	1,456.00
3+47.42	1,460.00

Unnamed Wash 5 - Approximate Method Section J-J
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section J-J
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.0151	ft/ft
Water Surface Elevation	1,448.87	ft
Elevation Range	1,445.40 to 1,460.00	
Discharge	880	cfs



Unnamed Wash 5 - Approximate Method Section K-K
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section K-K
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0191	ft/ft
Discharge	880	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,463.17	ft
Elevation Range	1,459.90 to 1,480.00	
Flow Area	134.0	ft²
Wetted Perimeter	77.65	ft
Top Width	77.36	ft
Actual Depth	3.27	ft
Critical Elevation	1,463.00	ft
Critical Slope	0.0251	ft/ft
Velocity	6.57	ft/s
Velocity Head	0.67	ft
Specific Energy	1,463.84	ft
Froude Number	0.88	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+97.13	0.070
0+97.13	1+92.84	0.045
1+92.84	3+15.51	0.070

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,480.00
0+31.91	1,476.00
0+50.63	1,472.00
0+71.83	1,468.00
0+97.13	1,464.00
1+37.13	1,460.00
1+39.27	1,459.90
1+44.02	1,460.00
1+92.84	1,464.00
2+23.12	1,468.00
2+43.30	1,472.00

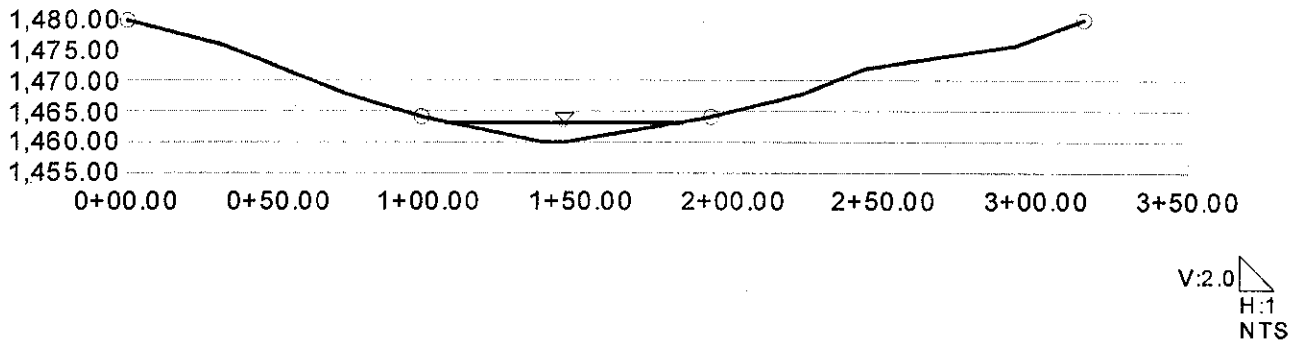
Unnamed Wash 5 - Approximate Method Section K-K
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
2+93.18	1,476.00
3+15.51	1,480.00

Unnamed Wash 5 - Approximate Method Section K-K
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section K-K
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.0191	ft/ft
Water Surface Elevation	1,463.17	ft
Elevation Range	1,459.90 to 1,480.00	
Discharge	880	cfs



Unnamed Wash 5 - Approximate Method Section L-L
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section L-L
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0172	ft/ft
Discharge	880	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,484.54	ft
Elevation Range	1,481.80 to 1,516.00	
Flow Area	157.1	ft²
Wetted Perimeter	106.78	ft
Top Width	106.45	ft
Actual Depth	2.74	ft
Critical Elevation	1,484.32	ft
Critical Slope	0.0269	ft/ft
Velocity	5.60	ft/s
Velocity Head	0.49	ft
Specific Energy	1,485.03	ft
Froude Number	0.81	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+43.13	0.070
1+43.13	3+31.70	0.045
3+31.70	5+17.41	0.070

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,500.00
0+45.74	1,496.00
0+89.36	1,492.00
1+43.13	1,488.00
2+32.68	1,484.00
3+03.03	1,481.80
3+26.28	1,484.00
3+31.70	1,488.00
3+42.51	1,492.00
3+53.80	1,496.00
3+75.33	1,500.00

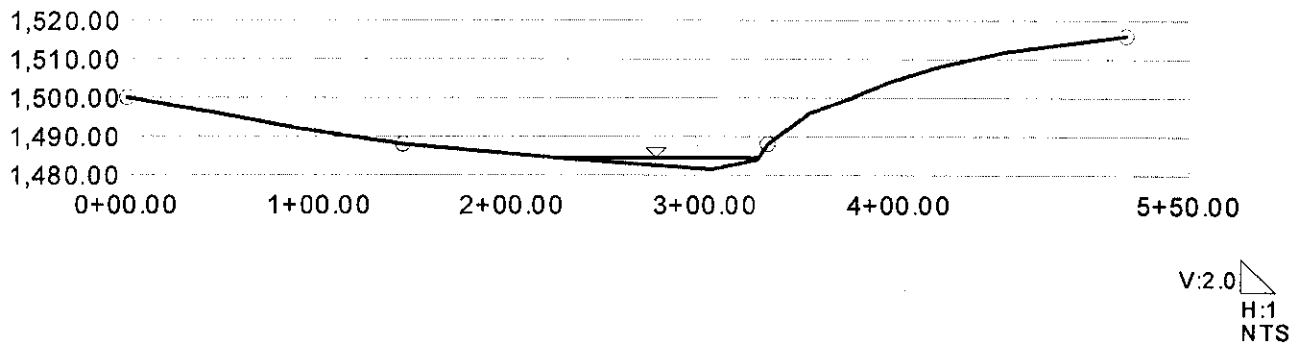
Unnamed Wash 5 - Approximate Method Section L-L
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
3+94.66	1,504.00
4+20.12	1,508.00
4+56.21	1,512.00
5+17.41	1,516.00

Unnamed Wash 5 - Approximate Method Section L-L
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section L-L
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.0172	ft/ft
Water Surface Elevation	1,484.54	ft
Elevation Range	1,481.80 to 1,516.00	
Discharge	880	cfs



Unnamed Wash 5 - Approximate Method Section M-M
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section M-M
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0027	ft/ft
Discharge	880	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,498.83	ft
Elevation Range	1,493.90 to 1,520.00	
Flow Area	284.1	ft²
Wetted Perimeter	117.17	ft
Top Width	116.69	ft
Actual Depth	4.93	ft
Critical Elevation	1,497.15	ft
Critical Slope	0.0253	ft/ft
Velocity	3.10	ft/s
Velocity Head	0.15	ft
Specific Energy	1,498.98	ft
Froude Number	0.35	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	3+00.03	0.070
3+00.03	4+45.04	0.045
4+45.04	7+23.74	0.070

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,520.00
1+37.36	1,516.00
1+89.13	1,512.00
2+25.75	1,508.00
2+69.53	1,504.00
3+00.03	1,500.00
3+70.72	1,496.00
3+95.34	1,493.90
4+19.07	1,496.00
4+45.04	1,500.00
4+86.20	1,504.00

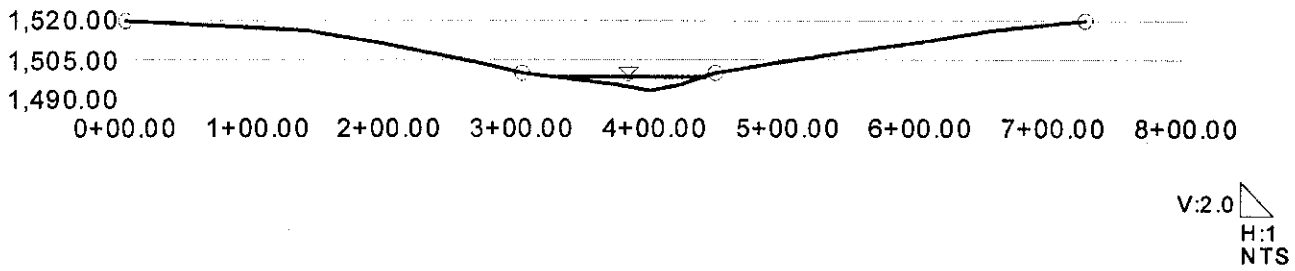
Unnamed Wash 5 - Approximate Method Section M-M
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
5+43.93	1,508.00
5+98.13	1,512.00
6+51.67	1,516.00
7+23.74	1,520.00

Unnamed Wash 5 - Approximate Method Section M-M
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section M-M
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.0027	ft/ft
Water Surface Elevation	1,498.83	ft
Elevation Range	1,493.90 to 1,520.00	
Discharge	880	cfs



Unnamed Wash 5 - Approximate Method Section N-N
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section N-N
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0152	ft/ft
Discharge	1,630	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.049	
Water Surface Elevation	1,532.91	ft
Elevation Range	1,528.80 to 1,550.50	
Flow Area	255.2	ft²
Wetted Perimeter	114.85	ft
Top Width	114.53	ft
Actual Depth	4.11	ft
Critical Elevation	1,532.47	ft
Critical Slope	0.0280	ft/ft
Velocity	6.39	ft/s
Velocity Head	0.63	ft
Specific Energy	1,533.55	ft
Froude Number	0.75	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	2+47.67	0.070
2+47.67	3+46.36	0.045
3+46.36	5+85.42	0.070

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,550.50
0+97.57	1,548.00
1+40.77	1,544.00
1+67.08	1,540.00
2+10.16	1,536.00
2+47.67	1,532.00
3+03.27	1,528.80
3+46.36	1,532.00
3+78.29	1,536.00
4+59.25	1,540.00
5+21.97	1,544.00

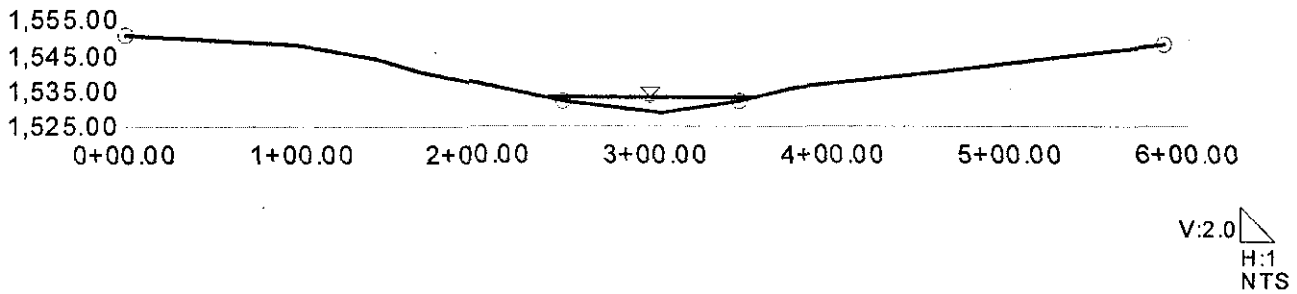
Unnamed Wash 5 - Approximate Method Section N-N
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
5+85.42	1,548.00

Unnamed Wash 5 - Approximate Method Section N-N
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section N-N
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.049	
Slope	0.0152	ft/ft
Water Surface Elevation	1,532.91	ft
Elevation Range	1,528.80 to 1,550.50	
Discharge	1,630	cfs



Unnamed Wash 5 - Approximate Method Section O-O
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section O-O
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0177	ft/ft
Discharge	1,630	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,546.25	ft
Elevation Range	1,543.01 to 1,556.00	
Flow Area	269.3	ft²
Wetted Perimeter	166.53	ft
Top Width	166.40	ft
Actual Depth	3.24	ft
Critical Elevation	1,546.03	ft
Critical Slope	0.0258	ft/ft
Velocity	6.05	ft/s
Velocity Head	0.57	ft
Specific Energy	1,546.82	ft
Froude Number	0.84	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+75.18	0.070
1+75.18	4+31.70	0.045
4+31.70	6+15.18	0.070

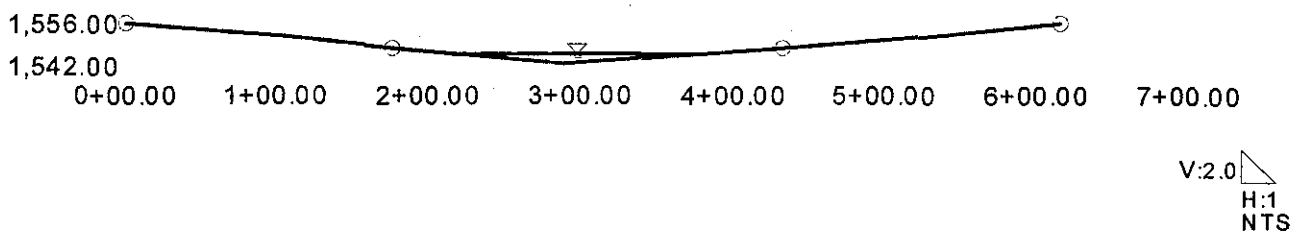
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,556.00
1+07.41	1,552.00
1+75.18	1,548.00
2+88.45	1,543.01
4+31.70	1,548.00
5+25.70	1,552.00
6+15.18	1,556.00

Unnamed Wash 5 - Approximate Method Section O-O
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section O-O
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.0177	ft/ft
Water Surface Elevation	1,546.25	ft
Elevation Range	1,543.01 to 1,556.00	
Discharge	1,630	cfs



Unnamed Wash 5 - Approximate Method Section P-P
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section P-P
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0027	ft/ft
Discharge	1,630	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.053	
Water Surface Elevation	*1,561.67*	*ft*
Elevation Range	1,558.50 to 1,572.00	
Flow Area	719.2	ft²
Wetted Perimeter	369.80	ft
Top Width	369.71	ft
Actual Depth	3.17	ft
Critical Elevation	1,560.34	ft
Critical Slope	0.0409	ft/ft
Velocity	2.27	ft/s
Velocity Head	0.08	ft
Specific Energy	1,561.75	ft
Froude Number	0.29	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	2+00.28	0.070
2+00.28	4+59.54	0.045
4+59.54	6+25.46	0.070

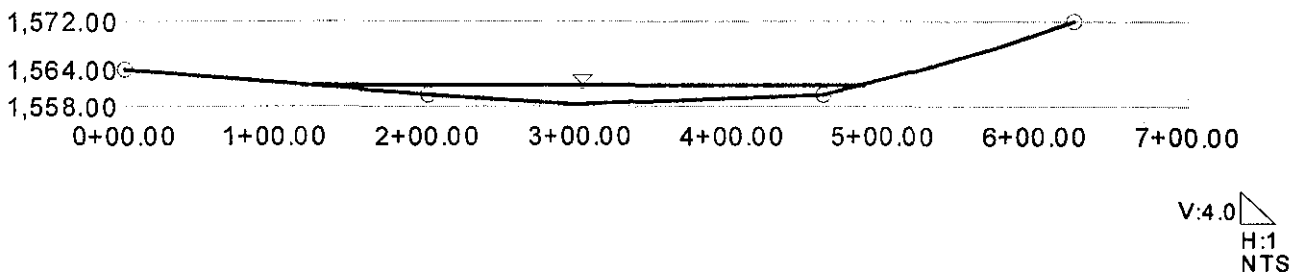
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,564.00
2+00.28	1,560.00
2+96.55	1,558.50
4+59.54	1,560.00
5+24.04	1,564.00
5+77.28	1,568.00
6+25.46	1,572.00

Unnamed Wash 5 - Approximate Method Section P-P
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section P-P
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.053	
Slope	0.0027	ft/ft
Water Surface Elevation	1,561.67	ft
Elevation Range	1,558.50 to 1,572.00	
Discharge	1,630	cfs



Unnamed Wash 5 - Approximate Method Section Q-Q
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section Q-Q
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0075	ft/ft
Discharge	1,630	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,566.48	ft
Elevation Range	1,563.20 to 1,576.00	
Flow Area	424.4	ft²
Wetted Perimeter	272.73	ft
Top Width	272.64	ft
Actual Depth	3.28	ft
Critical Elevation	1,565.80	ft
Critical Slope	0.0276	ft/ft
Velocity	3.84	ft/s
Velocity Head	0.23	ft
Specific Energy	1,566.71	ft
Froude Number	0.54	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	3+95.96	0.070
3+95.96	8+03.20	0.045
8+03.20	10+82.47	0.070

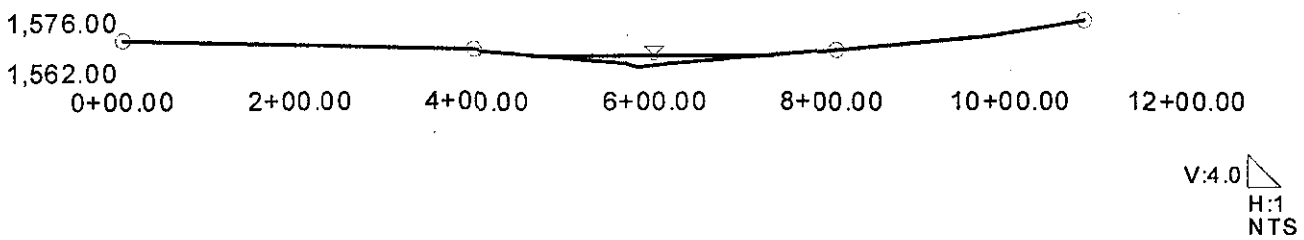
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,570.50
3+95.96	1,568.00
5+65.07	1,564.00
5+78.72	1,563.20
6+17.46	1,564.00
8+03.20	1,568.00
9+73.46	1,572.00
10+82.47	1,576.00

Unnamed Wash 5 - Approximate Method Section Q-Q
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section Q-Q
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.0075	ft/ft
Water Surface Elevation	1,566.48	ft
Elevation Range	1,563.20 to 1,576.00	
Discharge	1,630	cfs



Unnamed Wash 5 - Approximate Method Section R-R
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section R-R
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0085	ft/ft
Discharge	1,630	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.045	
Water Surface Elevation	1,570.15	ft
Elevation Range	1,567.80 to 1,580.00	
Flow Area	487.7	ft²
Wetted Perimeter	424.04	ft
Top Width	424.01	ft
Actual Depth	2.35	ft
Critical Elevation	1,569.66	ft
Critical Slope	0.0305	ft/ft
Velocity	3.34	ft/s
Velocity Head	0.17	ft
Specific Energy	1,570.32	ft
Froude Number	0.55	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	4+27.43	0.070
4+27.43	11+93.34	0.045
11+93.34	14+31.33	0.070

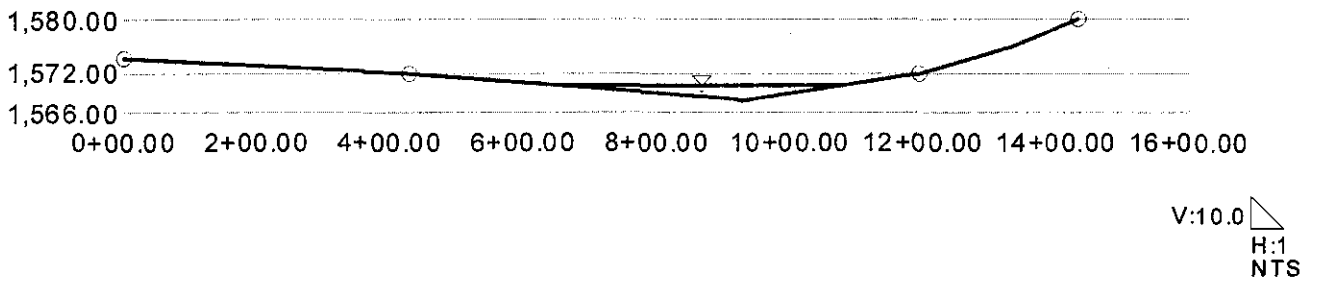
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,574.30
4+27.43	1,572.00
9+16.62	1,568.00
9+26.70	1,567.80
9+44.25	1,568.00
11+93.34	1,572.00
13+32.63	1,576.00
14+31.33	1,580.00

Unnamed Wash 5 - Approximate Method Section R-R
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 5 - Approximate Method Section R-R
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.045	
Slope	0.0085	ft/ft
Water Surface Elevation	1,570.15	ft
Elevation Range	1,567.80 to 1,580.00	
Discharge	1,630	cfs



Unnamed Wash 6 – Approximate Method Reach

Unnamed Wash 6 - Approximate Method Section A-A
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0124	ft/ft
Discharge	1,380	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,333.53	ft
Elevation Range	1,329.50 to 1,340.00	
Flow Area	201.0	ft²
Wetted Perimeter	94.01	ft
Top Width	93.50	ft
Actual Depth	4.03	ft
Critical Elevation	1,333.22	ft
Critical Slope	0.0187	ft/ft
Velocity	6.87	ft/s
Velocity Head	0.73	ft
Specific Energy	1,334.26	ft
Froude Number	0.83	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+11.48	0.050
0+11.48	1+52.23	0.040
1+52.23	1+69.50	0.050

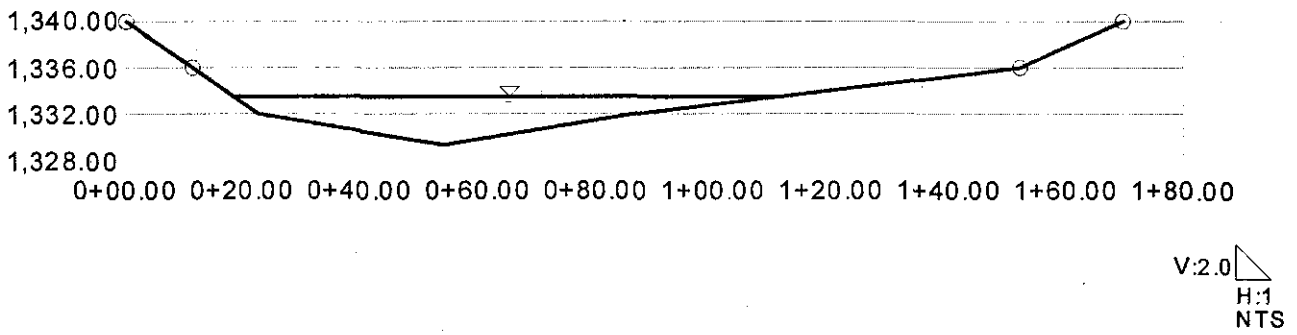
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,340.00
0+11.48	1,336.00
0+22.77	1,332.00
0+54.09	1,329.50
0+86.93	1,332.00
1+52.23	1,336.00
1+69.50	1,340.00

Unnamed Wash 6 - Approximate Method Section A-A
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0124	ft/ft
Water Surface Elevation	1,333.53	ft
Elevation Range	1,329.50 to 1,340.00	
Discharge	1,380	cfs



Unnamed Wash 6 - Approximate Method Section B-B
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0199	ft/ft
Discharge	1,380	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,351.81	ft
Elevation Range	1,348.60 to 1,380.00	
Flow Area	192.3	ft²
Wetted Perimeter	120.04	ft
Top Width	119.86	ft
Actual Depth	3.21	ft
Critical Elevation	1,351.81	ft
Critical Slope	0.0200	ft/ft
Velocity	7.18	ft/s
Velocity Head	0.80	ft
Specific Energy	1,352.61	ft
Froude Number	1.00	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+89.90	0.050
0+89.90	2+16.89	0.040
2+16.89	2+74.32	0.050

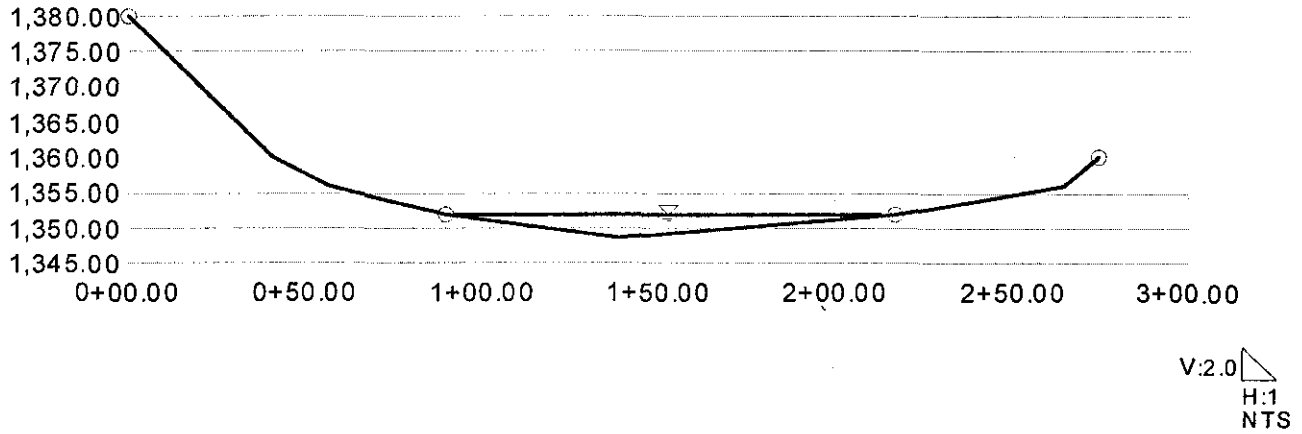
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,380.00
0+41.06	1,360.00
0+56.88	1,356.00
0+89.90	1,352.00
1+38.40	1,348.60
2+16.89	1,352.00
2+64.14	1,356.00
2+74.32	1,360.00

Unnamed Wash 6 - Approximate Method Section B-B
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0199	ft/ft
Water Surface Elevation	1,351.81	ft
Elevation Range	1,348.60 to 1,380.00	
Discharge	1,380	cfs



Unnamed Wash 6 - Approximate Method Section C-C
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0275	ft/ft
Discharge	1,380	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,375.35	ft
Elevation Range	1,372.50 to 1,408.00	
Flow Area	176.9	ft²
Wetted Perimeter	124.19	ft
Top Width	124.01	ft
Actual Depth	2.85	ft
Critical Elevation	1,375.52	ft
Critical Slope	0.0204	ft/ft
Velocity	7.80	ft/s
Velocity Head	0.95	ft
Specific Energy	1,376.30	ft
Froude Number	1.15	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+27.11	0.050
1+27.11	2+79.22	0.040
2+79.22	4+32.76	0.050

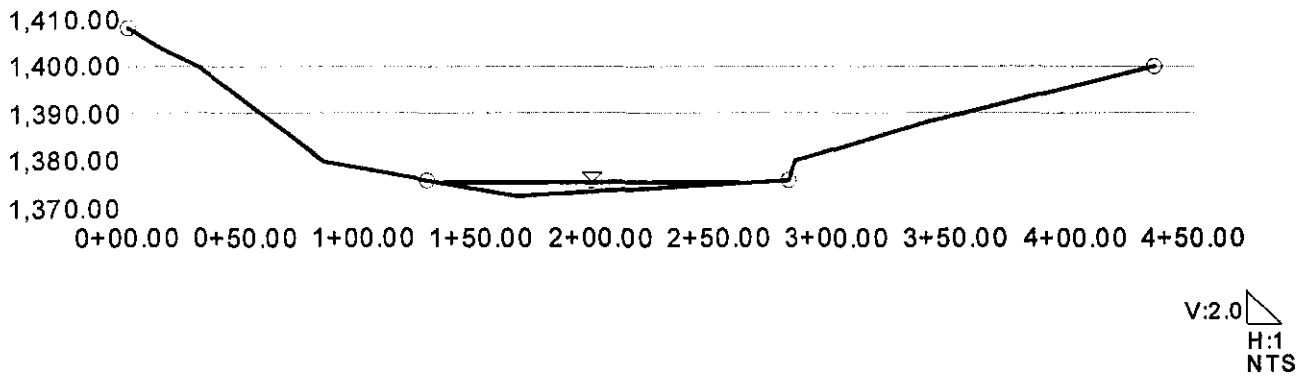
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,408.00
0+12.88	1,404.00
0+29.26	1,400.00
0+82.55	1,380.00
1+27.11	1,376.00
1+64.05	1,372.50
2+79.22	1,376.00
2+82.18	1,380.00
3+36.82	1,388.00
4+32.76	1,400.00

Unnamed Wash 6 - Approximate Method Section C-C
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0275	ft/ft
Water Surface Elevation	1,375.35	ft
Elevation Range	1,372.50 to 1,408.00	
Discharge	1,380	cfs



Unnamed Wash 6 - Approximate Method Section D-D
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0123	ft/ft
Discharge	1,380	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,397.40	ft
Elevation Range	1,393.90 to 1,412.00	
Flow Area	206.3	ft²
Wetted Perimeter	99.72	ft
Top Width	99.26	ft
Actual Depth	3.50	ft
Critical Elevation	1,397.10	ft
Critical Slope	0.0190	ft/ft
Velocity	6.69	ft/s
Velocity Head	0.70	ft
Specific Energy	1,398.09	ft
Froude Number	0.82	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+07.34	0.050
1+07.34	2+45.67	0.040
2+45.67	3+18.08	0.050

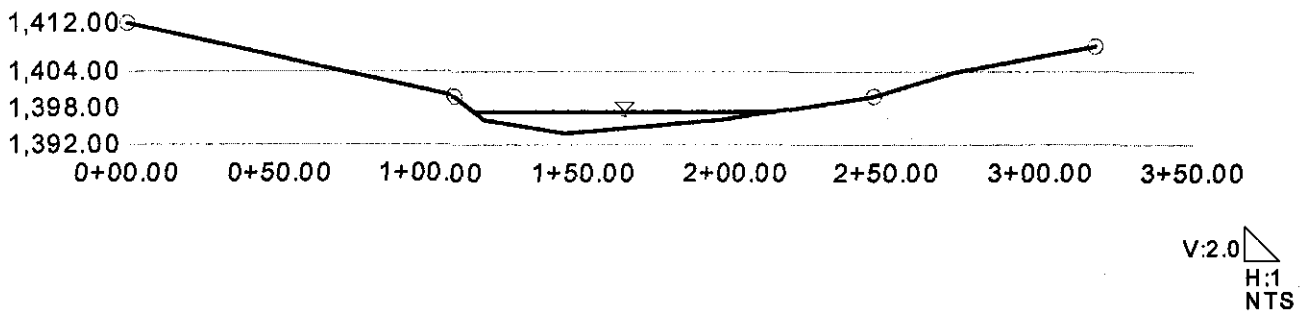
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,412.00
1+07.34	1,400.00
1+16.75	1,396.00
1+43.89	1,393.90
1+95.00	1,396.00
2+45.67	1,400.00
2+72.80	1,404.00
3+18.08	1,408.00

Unnamed Wash 6 - Approximate Method Section D-D
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0123	ft/ft
Water Surface Elevation	1,397.40	ft
Elevation Range	1,393.90 to 1,412.00	
Discharge	1,380	cfs



Unnamed Wash 6 - Approximate Method Section E-E
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0165	ft/ft
Discharge	1,380	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,410.96	ft
Elevation Range	1,406.80 to 1,420.00	
Flow Area	150.8	ft²
Wetted Perimeter	56.81	ft
Top Width	55.98	ft
Actual Depth	4.16	ft
Critical Elevation	1,410.92	ft
Critical Slope	0.0171	ft/ft
Velocity	9.15	ft/s
Velocity Head	1.30	ft
Specific Energy	1,412.26	ft
Froude Number	0.98	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+62.33	0.050
0+62.33	1+26.50	0.040
1+26.50	1+60.26	0.050

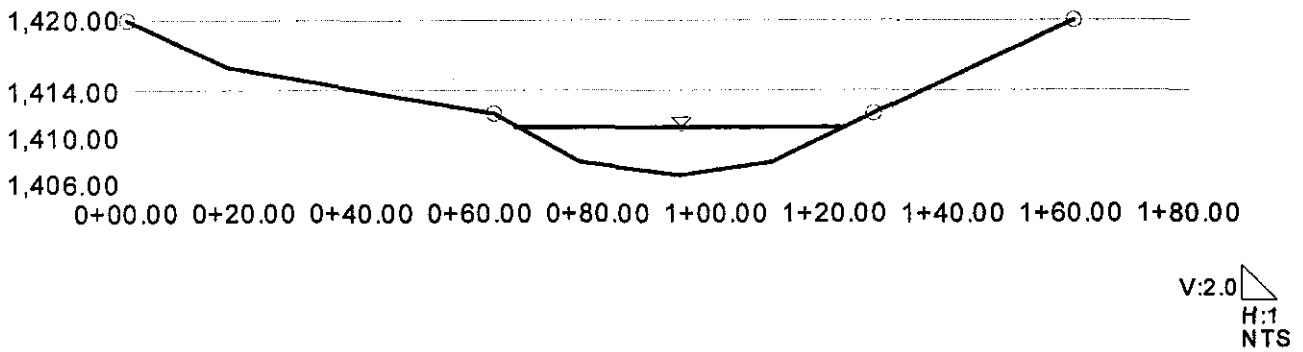
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,420.00
0+17.09	1,416.00
0+62.33	1,412.00
0+76.91	1,408.00
0+93.81	1,406.80
1+09.62	1,408.00
1+26.50	1,412.00
1+60.26	1,420.00

Unnamed Wash 6 - Approximate Method Section E-E
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0165	ft/ft
Water Surface Elevation	1,410.96	ft
Elevation Range	1,406.80 to 1,420.00	
Discharge	1,380	cfs



Unnamed Wash 6 - Approximate Method Section F-F
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0071	ft/ft
Discharge	1,380	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,325.43	ft
Elevation Range	1,323.60 to 1,332.00	
Flow Area	386.8	ft²
Wetted Perimeter	317.80	ft
Top Width	317.77	ft
Actual Depth	1.83	ft
Critical Elevation	1,324.97	ft
Critical Slope	0.0239	ft/ft
Velocity	3.57	ft/s
Velocity Head	0.20	ft
Specific Energy	1,325.63	ft
Froude Number	0.57	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
3+87.20	9+49.80	0.040
9+49.80	10+21.55	0.050

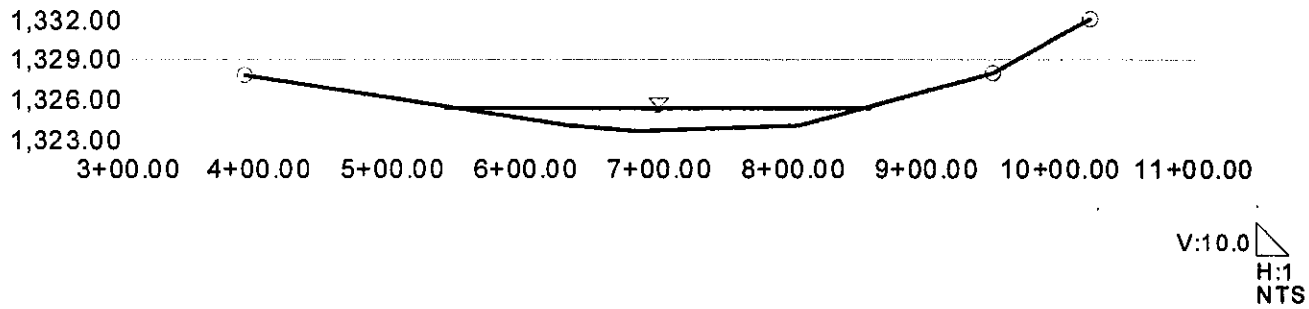
Natural Channel Points

Station (ft)	Elevation (ft)
3+87.20	1,327.80
6+30.06	1,324.00
6+82.63	1,323.60
8+04.54	1,324.00
9+49.80	1,328.00
10+21.55	1,332.00

Unnamed Wash 6 - Approximate Method Section F-F
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0071	ft/ft
Water Surface Elevation	1,325.43	ft
Elevation Range	1,323.60 to 1,332.00	
Discharge	1,380	cfs



Unnamed Wash 6- Approximate Method Section G-G
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section G-G
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0062	ft/ft
Discharge	1,380	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,430.90	ft
Elevation Range	1,427.60 to 1,436.00	
Flow Area	294.4	ft²
Wetted Perimeter	145.07	ft
Top Width	144.87	ft
Actual Depth	3.30	ft
Critical Elevation	1,430.13	ft
Critical Slope	0.0200	ft/ft
Velocity	4.69	ft/s
Velocity Head	0.34	ft
Specific Energy	1,431.24	ft
Froude Number	0.58	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+99.22	0.050
0+99.22	2+79.59	0.040
2+79.59	8+79.92	0.050

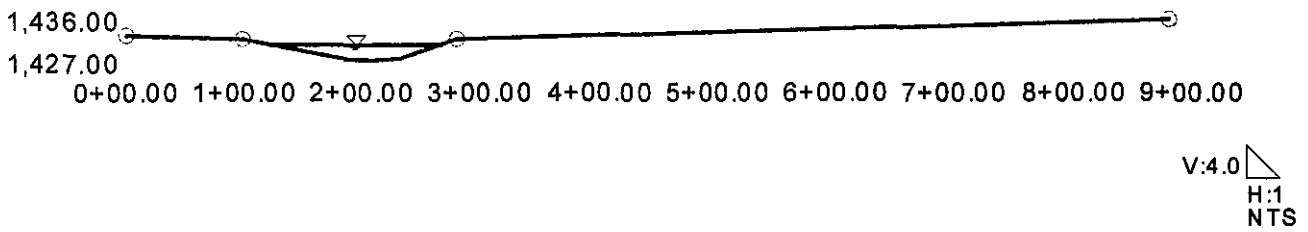
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,432.70
0+99.22	1,432.00
1+82.01	1,428.00
2+07.46	1,427.60
2+32.91	1,428.00
2+79.59	1,432.00
8+79.92	1,436.00

Unnamed Wash 6 - Approximate Method Section G-G
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section G-G
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0062	ft/ft
Water Surface Elevation	1,430.90	ft
Elevation Range	1,427.60 to 1,436.00	
Discharge	1,380	cfs



Unnamed Wash 6 - Approximate Method Section H-H
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section H-H
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0079	ft/ft
Discharge	1,380	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,434.50	ft
Elevation Range	1,430.85 to 1,440.00	
Flow Area	288.0	ft²
Wetted Perimeter	165.22	ft
Top Width	165.04	ft
Actual Depth	3.65	ft
Critical Elevation	1,433.93	ft
Critical Slope	0.0206	ft/ft
Velocity	4.79	ft/s
Velocity Head	0.36	ft
Specific Energy	1,434.86	ft
Froude Number	0.64	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	2+05.67	0.050
2+05.67	4+42.75	0.040
4+42.75	7+37.50	0.050

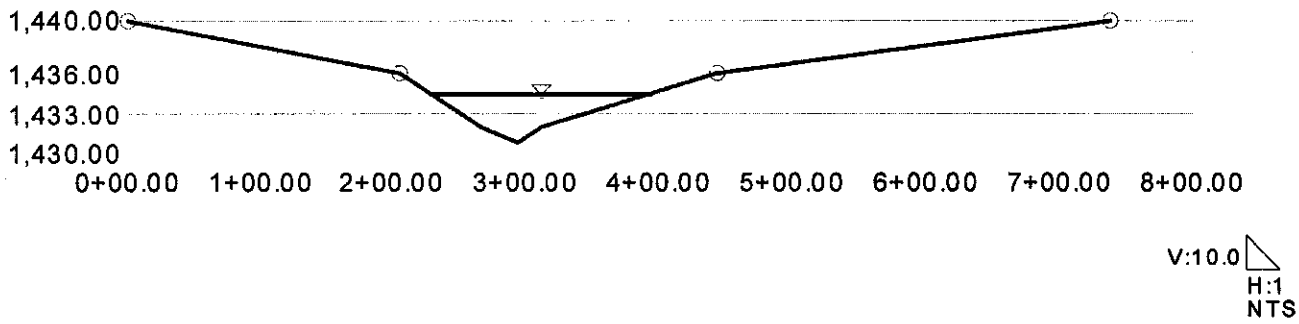
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,440.00
2+05.67	1,436.00
2+66.60	1,432.00
2+93.18	1,430.85
3+11.21	1,432.00
4+42.75	1,436.00
7+37.50	1,440.00

Unnamed Wash 6 - Approximate Method Section H-H
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section H-H
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0079	ft/ft
Water Surface Elevation	1,434.50	ft
Elevation Range	1,430.85 to 1,440.00	
Discharge	1,380	cfs



Unnamed Wash 6 - Approximate Method Section I-I
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section I-I
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0199	ft/ft
Discharge	1,380	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.043	
Water Surface Elevation	1,453.19	ft
Elevation Range	1,451.40 to 1,456.00	
Flow Area	335.1	ft²
Wetted Perimeter	428.63	ft
Top Width	428.53	ft
Actual Depth	1.79	ft
Critical Elevation	1,453.08	ft
Critical Slope	0.0304	ft/ft
Velocity	4.12	ft/s
Velocity Head	0.26	ft
Specific Energy	1,453.46	ft
Froude Number	0.82	
Flow Type	Subcritical	

Calculation Messages:
Flow is divided.

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+91.51	0.050
0+91.51	2+32.94	0.040
2+32.94	2+79.16	0.050
2+79.16	3+32.60	0.040
3+32.60	4+02.79	0.050
4+02.79	5+29.95	0.040
5+29.95	7+52.18	0.050

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,454.00
0+91.51	1,452.00
2+32.94	1,452.00
2+79.16	1,453.10

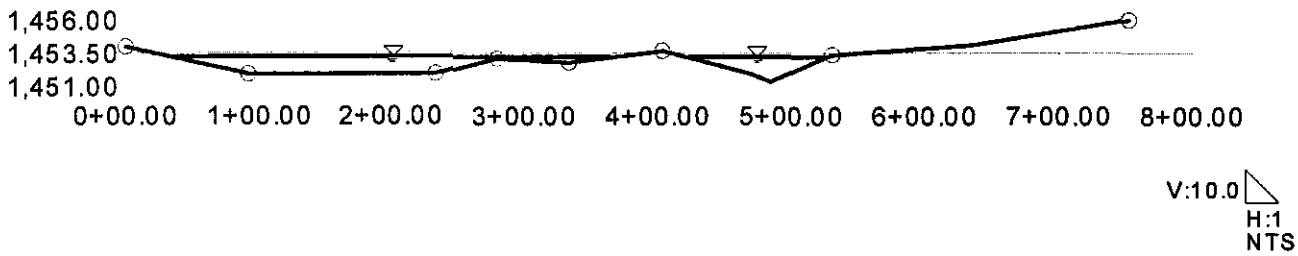
Unnamed Wash 6 - Approximate Method Section I-I
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
3+32.60	1,452.80
4+02.79	1,453.70
4+69.63	1,452.00
4+83.13	1,451.40
4+96.68	1,452.00
5+29.95	1,453.40
6+35.14	1,454.10
7+52.18	1,456.00

Unnamed Wash 6 - Approximate Method Section I-I
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section I-I
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.043	
Slope	0.0199	ft/ft
Water Surface Elevation	1,453.19	ft
Elevation Range	1,451.40 to 1,456.00	
Discharge	1,380	cfs



Unnamed Wash 6 - Approximate Method Section J-J
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section J-J
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0273	ft/ft
Discharge	1,380	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,474.16	ft
Elevation Range	1,470.70 to 1,484.00	
Flow Area	159.2	ft²
Wetted Perimeter	94.81	ft
Top Width	94.54	ft
Actual Depth	3.46	ft
Critical Elevation	1,474.39	ft
Critical Slope	0.0193	ft/ft
Velocity	8.67	ft/s
Velocity Head	1.17	ft
Specific Energy	1,475.33	ft
Froude Number	1.18	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+35.01	0.050
0+35.01	1+81.94	0.040
1+81.94	2+43.61	0.050

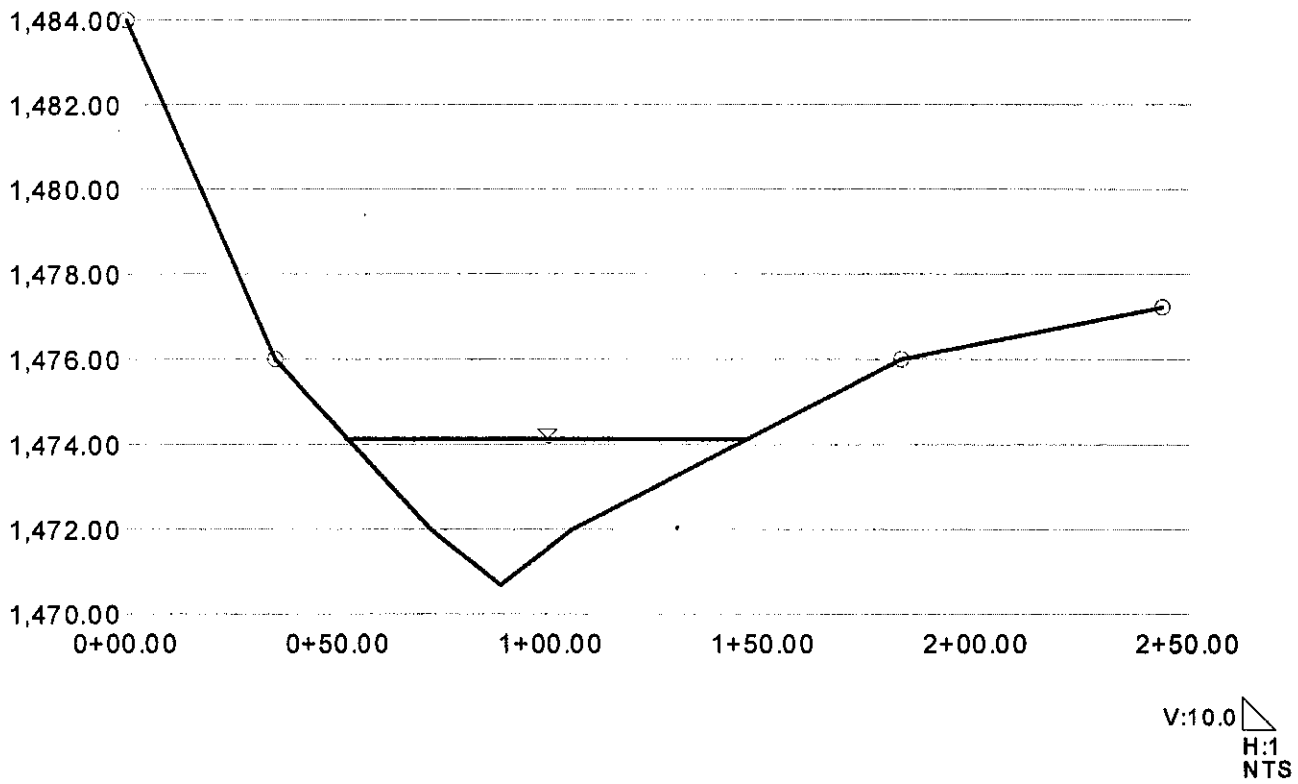
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,484.00
0+35.01	1,476.00
0+71.74	1,472.00
0+88.17	1,470.70
1+04.67	1,472.00
1+81.94	1,476.00
2+43.61	1,477.22

Unnamed Wash 6 - Approximate Method Section J-J
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 6 - Approximate Method Section J-J
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0273	ft/ft
Water Surface Elevation	1,474.16	ft
Elevation Range	1,470.70 to 1,484.00	
Discharge	1,380	cfs



Unnamed Wash 7 – Approximate Method Reach

Unnamed Wash 7 - Approximate Method Section A-A
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 7 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0063	ft/ft
Discharge	1,790	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,313.04	ft
Elevation Range	1,307.90 to 1,340.00	
Flow Area	331.3	ft²
Wetted Perimeter	133.57	ft
Top Width	133.04	ft
Actual Depth	5.14	ft
Critical Elevation	1,311.87	ft
Critical Slope	0.0176	ft/ft
Velocity	5.40	ft/s
Velocity Head	0.45	ft
Specific Energy	1,313.49	ft
Froude Number	0.60	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+71.23	0.050
0+71.23	3+31.19	0.040
3+31.19	4+01.25	0.050

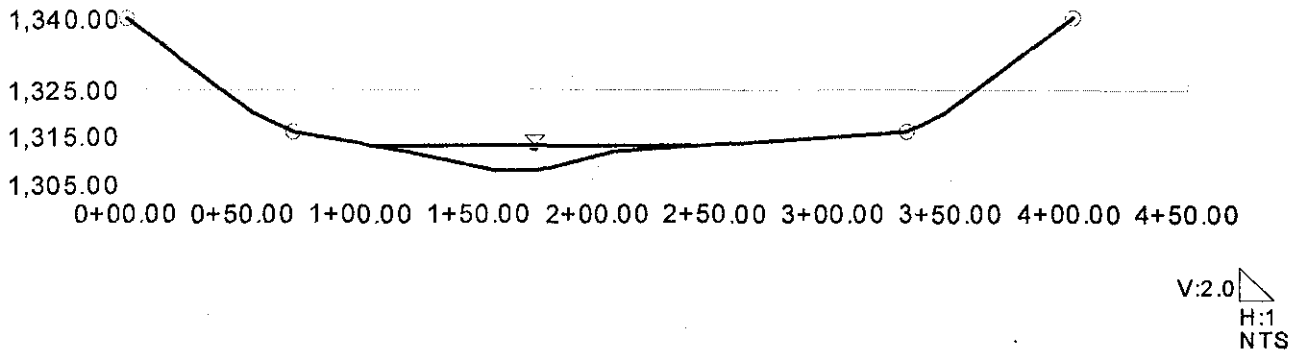
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,340.00
0+53.63	1,320.00
0+71.23	1,316.00
1+18.88	1,312.00
1+55.78	1,308.00
1+67.73	1,307.90
1+74.93	1,308.00
2+07.28	1,312.00
3+31.19	1,316.00
3+47.41	1,320.00
4+01.25	1,340.00

Unnamed Wash 7 - Approximate Method Section A-A
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 7 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0063	ft/ft
Water Surface Elevation	1,313.04	ft
Elevation Range	1,307.90 to 1,340.00	
Discharge	1,790	cfs



Unnamed Wash 7 - Approximate Method Section B-B
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 7 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0178	ft/ft
Discharge	1,790	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,327.80	ft
Elevation Range	1,323.40 to 1,360.00	
Flow Area	204.3	ft²
Wetted Perimeter	86.97	ft
Top Width	85.58	ft
Actual Depth	4.40	ft
Critical Elevation	1,327.80	ft
Critical Slope	0.0178	ft/ft
Velocity	8.76	ft/s
Velocity Head	1.19	ft
Specific Energy	1,328.99	ft
Froude Number	1.00	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+47.66	0.050
0+47.66	1+53.18	0.040
1+53.18	2+52.81	0.050

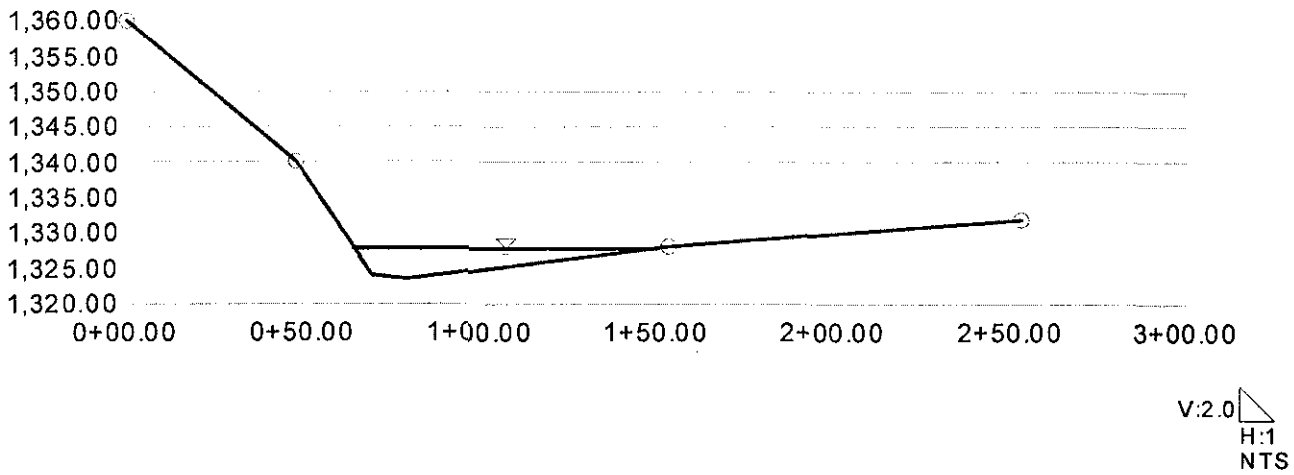
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,360.00
0+47.66	1,340.00
0+69.58	1,324.00
0+79.51	1,323.40
0+88.56	1,324.00
1+53.18	1,328.00
2+52.81	1,332.00

Unnamed Wash 7 - Approximate Method Section B-B
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 7 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0178	ft/ft
Water Surface Elevation	1,327.80	ft
Elevation Range	1,323.40 to 1,360.00	
Discharge	1,790	cfs



Unnamed Wash 7 - Approximate Method Section C-C
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 7 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0157	ft/ft
Discharge	1,790	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.042	
Water Surface Elevation	1,349.16	ft
Elevation Range	1,344.40 to 1,360.00	
Flow Area	223.5	ft²
Wetted Perimeter	91.43	ft
Top Width	90.86	ft
Actual Depth	4.76	ft
Critical Elevation	1,348.96	ft
Critical Slope	0.0197	ft/ft
Velocity	8.01	ft/s
Velocity Head	1.00	ft
Specific Energy	1,350.15	ft
Froude Number	0.90	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+55.91	0.050
0+55.91	1+27.79	0.040
1+27.79	2+21.98	0.050

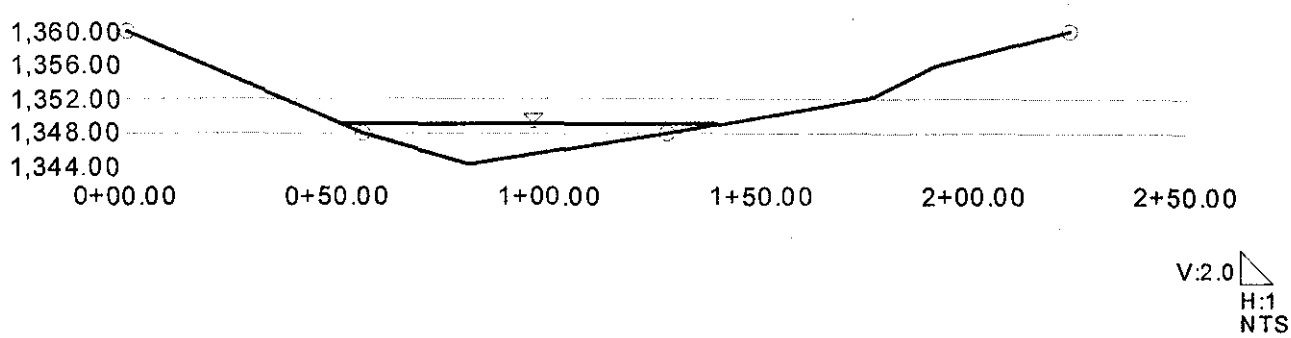
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,360.00
0+55.91	1,348.00
0+80.84	1,344.40
1+27.79	1,348.00
1+74.78	1,352.00
1+90.52	1,356.00
2+21.98	1,360.00

Unnamed Wash 7 - Approximate Method Section C-C
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 7 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.042	
Slope	0.0157	ft/ft
Water Surface Elevation	1,349.16	ft
Elevation Range	1,344.40 to 1,360.00	
Discharge	1,790	cfs



Unnamed Wash 7 - Approximate Method Section D-D
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 7 - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0146	ft/ft
Discharge	1,790	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,363.41	ft
Elevation Range	1,358.00 to 1,369.70	
Flow Area	180.2	ft²
Wetted Perimeter	54.77	ft
Top Width	53.15	ft
Actual Depth	5.41	ft
Critical Elevation	1,363.28	ft
Critical Slope	0.0163	ft/ft
Velocity	9.93	ft/s
Velocity Head	1.53	ft
Specific Energy	1,364.94	ft
Froude Number	0.95	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+92.14	0.050
1+92.14	2+48.76	0.040
2+48.76	3+90.31	0.050

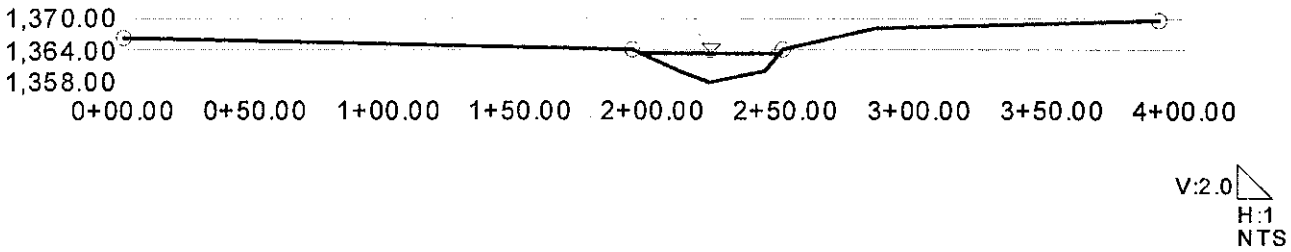
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,366.30
1+92.14	1,364.00
2+09.01	1,360.00
2+20.67	1,358.00
2+42.14	1,360.00
2+48.76	1,364.00
2+82.96	1,368.00
3+90.31	1,369.70

Unnamed Wash 7 - Approximate Method Section D-D
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 7 - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0146	ft/ft
Water Surface Elevation	1,363.41	ft
Elevation Range	1,358.00 to 1,369.70	
Discharge	1,790	cfs



Unnamed Wash 7 - Approximate Method Section E-E
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 7 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0093	ft/ft
Discharge	1,790	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,371.17	ft
Elevation Range	1,369.10 to 1,374.80	
Flow Area	462.5	ft²
Wetted Perimeter	411.78	ft
Top Width	411.73	ft
Actual Depth	2.07	ft
Critical Elevation	1,370.84	ft
Critical Slope	0.0242	ft/ft
Velocity	3.87	ft/s
Velocity Head	0.23	ft
Specific Energy	1,371.40	ft
Froude Number	0.64	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	3+03.50	0.050
3+03.50	8+13.16	0.040
8+13.16	9+67.79	0.050

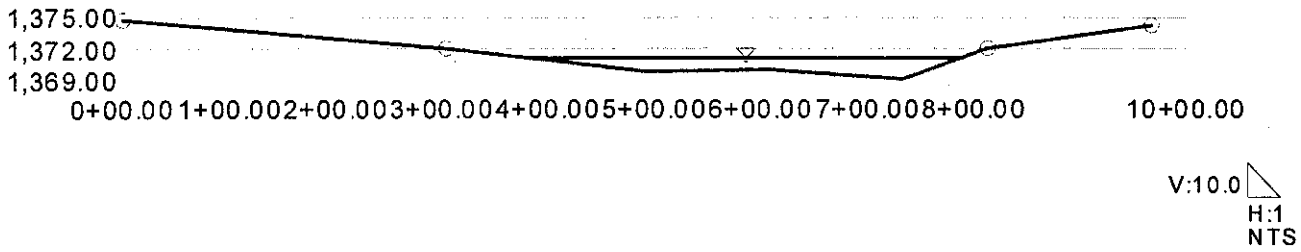
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,374.80
3+03.50	1,372.00
4+92.92	1,369.90
6+07.46	1,370.10
7+34.07	1,369.10
8+13.16	1,372.00
9+67.79	1,374.20

Unnamed Wash 7 - Approximate Method Section E-E
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 7 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0093	ft/ft
Water Surface Elevation	1,371.17	ft
Elevation Range	1,369.10 to 1,374.80	
Discharge	1,790	cfs



Unnamed Wash 7 - Approximate Method Section F-F
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 7 - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0083	ft/ft
Discharge	1,790	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,381.13	ft
Elevation Range	1,378.80 to 1,392.00	
Flow Area	420.1	ft²
Wetted Perimeter	297.36	ft
Top Width	297.28	ft
Actual Depth	2.33	ft
Critical Elevation	1,380.70	ft
Critical Slope	0.0225	ft/ft
Velocity	4.26	ft/s
Velocity Head	0.28	ft
Specific Energy	1,381.42	ft
Froude Number	0.63	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+07.42	0.050
1+07.42	4+85.73	0.040
4+85.73	6+11.38	0.050

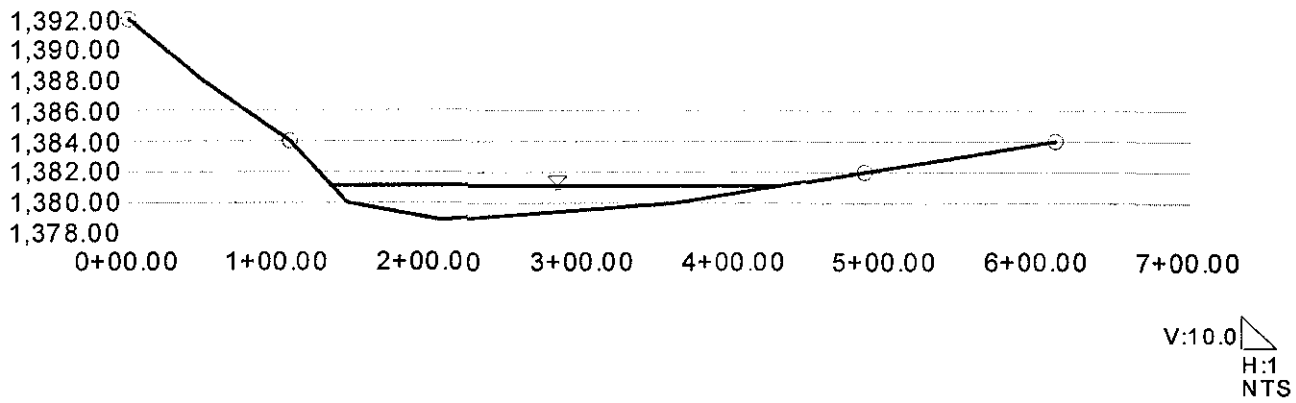
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,392.00
0+50.37	1,388.00
1+07.42	1,384.00
1+44.61	1,380.00
2+06.78	1,378.80
3+60.07	1,380.00
4+85.73	1,382.00
6+11.38	1,384.00

Unnamed Wash 7 - Approximate Method Section F-F
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 7 - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0083	ft/ft
Water Surface Elevation	1,381.13	ft
Elevation Range	1,378.80 to 1,392.00	
Discharge	1,790	cfs



Unnamed Wash 7 - Approximate Method Section G-G
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 7 - Approximate Method Section G-G
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0118	ft/ft
Discharge	1,790	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,396.02	ft
Elevation Range	1,392.60 to 1,412.00	
Flow Area	310.3	ft²
Wetted Perimeter	181.27	ft
Top Width	181.14	ft
Actual Depth	3.42	ft
Critical Elevation	1,395.69	ft
Critical Slope	0.0202	ft/ft
Velocity	5.77	ft/s
Velocity Head	0.52	ft
Specific Energy	1,396.54	ft
Froude Number	0.78	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	2+33.40	0.050
2+33.40	4+14.01	0.040
4+14.01	6+61.45	0.050

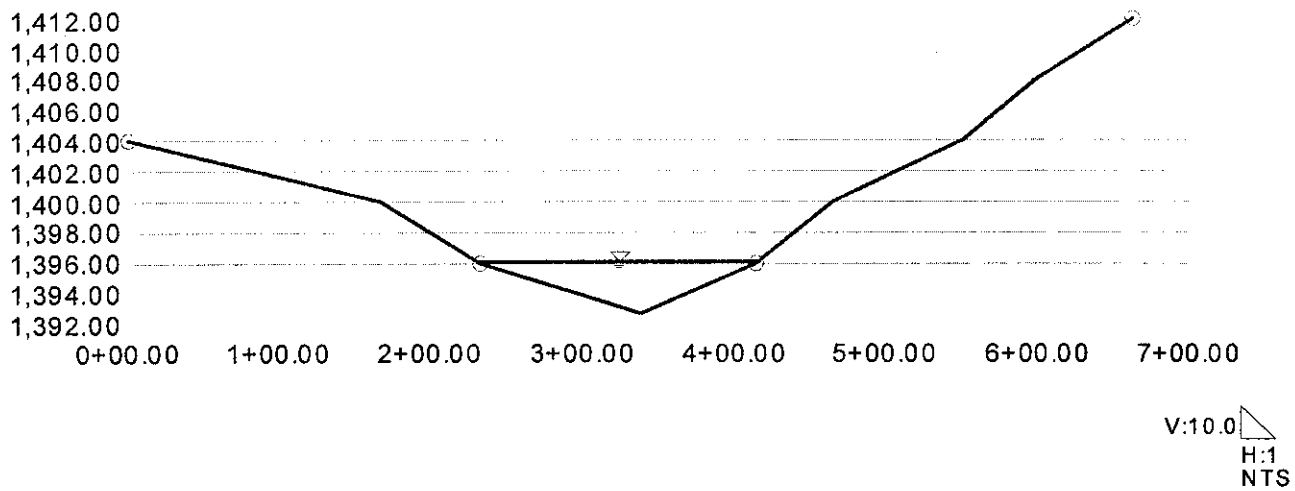
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,404.00
1+66.18	1,400.00
2+33.40	1,396.00
3+38.04	1,392.60
4+14.01	1,396.00
4+65.50	1,400.00
5+50.83	1,404.00
5+97.11	1,408.00
6+61.45	1,412.00

Unnamed Wash 7 - Approximate Method Section G-G
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 7 - Approximate Method Section G-G
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0118	ft/ft
Water Surface Elevation	1,396.02	ft
Elevation Range	1,392.60 to 1,412.00	
Discharge	1,790	cfs



Unnamed Wash 7 - Approximate Method Section H-H
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 7 - Approximate Method Section H-H
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0089	ft/ft
Discharge	1,790	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.042	
Water Surface Elevation	1,405.27	ft
Elevation Range	1,402.10 to 1,420.00	
Flow Area	360.6	ft²
Wetted Perimeter	195.47	ft
Top Width	195.35	ft
Actual Depth	3.17	ft
Critical Elevation	1,404.73	ft
Critical Slope	0.0231	ft/ft
Velocity	4.96	ft/s
Velocity Head	0.38	ft
Specific Energy	1,405.66	ft
Froude Number	0.64	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	4+36.73	0.050
4+36.73	5+85.60	0.040
5+85.60	8+45.54	0.050

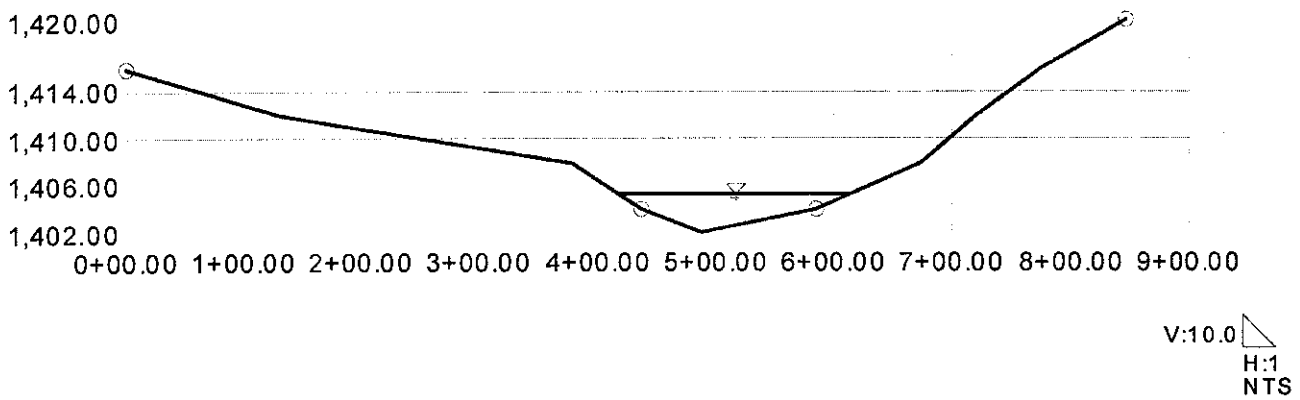
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,416.00
1+29.63	1,412.00
3+78.24	1,408.00
4+36.73	1,404.00
4+86.92	1,402.10
5+85.60	1,404.00
6+73.06	1,408.00
7+20.26	1,412.00
7+74.91	1,416.00
8+45.54	1,420.00

Unnamed Wash 7 - Approximate Method Section H-H
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 7 - Approximate Method Section H-H
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.042	
Slope	0.0089	ft/ft
Water Surface Elevation	1,405.27	ft
Elevation Range	1,402.10 to 1,420.00	
Discharge	1,790	cfs



Tributary 1 to Unnamed Wash 7 - Approximate Method Section A-A
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 7 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0154	ft/ft
Discharge	1,790	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,357.65	ft
Elevation Range	1,352.05 to 1,376.00	
Flow Area	183.7	ft²
Wetted Perimeter	59.80	ft
Top Width	58.62	ft
Actual Depth	5.60	ft
Critical Elevation	1,357.58	ft
Critical Slope	0.0164	ft/ft
Velocity	9.74	ft/s
Velocity Head	1.48	ft
Specific Energy	1,359.12	ft
Froude Number	0.97	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+55.87	0.050
1+55.87	2+29.10	0.040
2+29.10	4+13.69	0.050

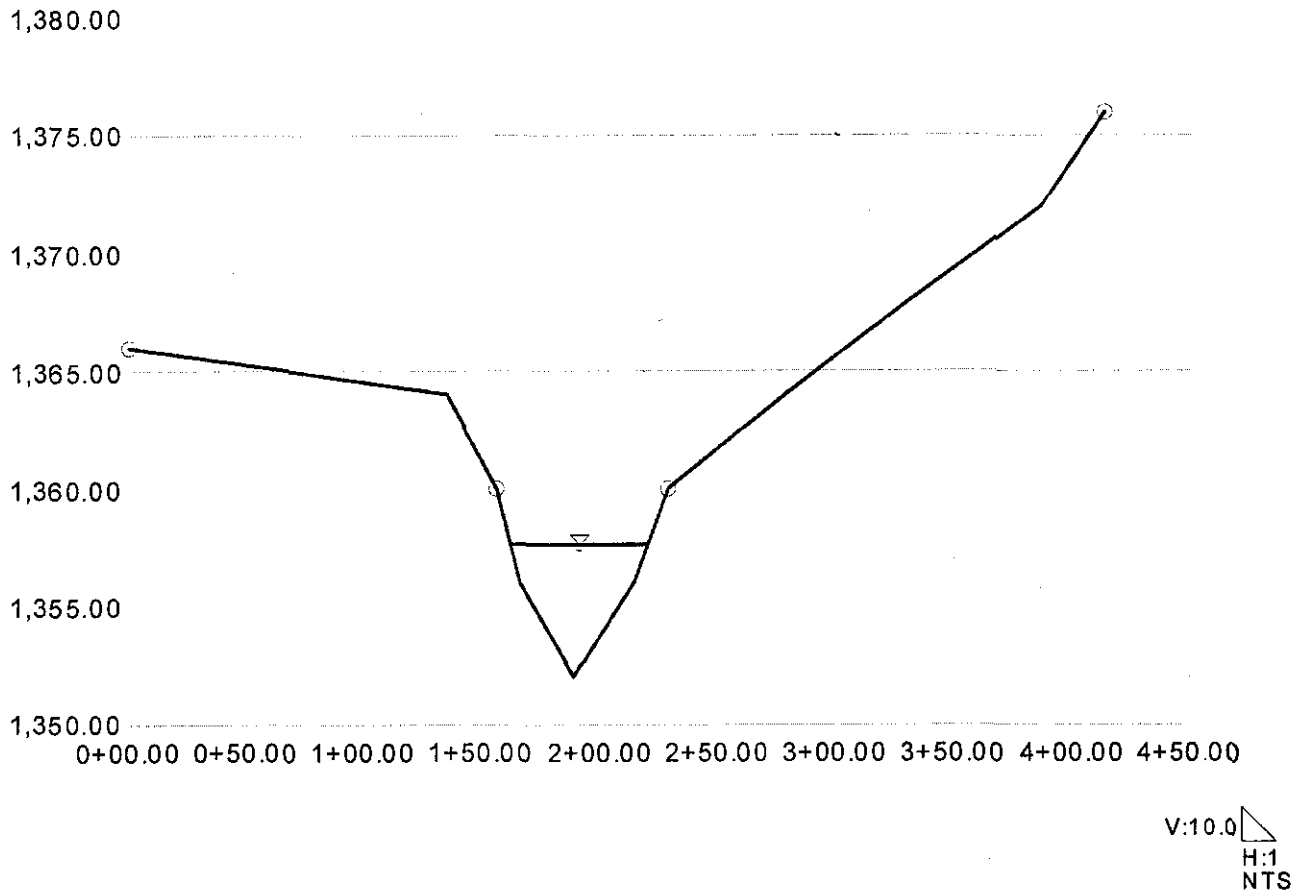
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,366.00
1+34.86	1,364.00
1+55.87	1,360.00
1+65.65	1,356.00
1+88.61	1,352.05
2+14.02	1,356.00
2+29.10	1,360.00
2+78.95	1,364.00
3+31.12	1,368.00
3+86.14	1,372.00
4+13.69	1,376.00

Tributary 1 to Unnamed Wash 7 - Approximate Method Section A-A
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 7 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0154	ft/ft
Water Surface Elevation	1,357.65	ft
Elevation Range	1,352.05 to 1,376.00	
Discharge	1,790	cfs



Tributary 1 to Unnamed Wash 7 - Approximate Method Section B-B
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 7 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0135	ft/ft
Discharge	1,790	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,370.69	ft
Elevation Range	1,368.61 to 1,378.00	
Flow Area	349.2	ft²
Wetted Perimeter	269.78	ft
Top Width	269.74	ft
Actual Depth	2.08	ft
Critical Elevation	1,370.46	ft
Critical Slope	0.0221	ft/ft
Velocity	5.13	ft/s
Velocity Head	0.41	ft
Specific Energy	1,371.09	ft
Froude Number	0.79	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	*1+71.64*	*0.050*
1+71.64	5+59.54	0.040
5+59.54	8+34.88	0.050

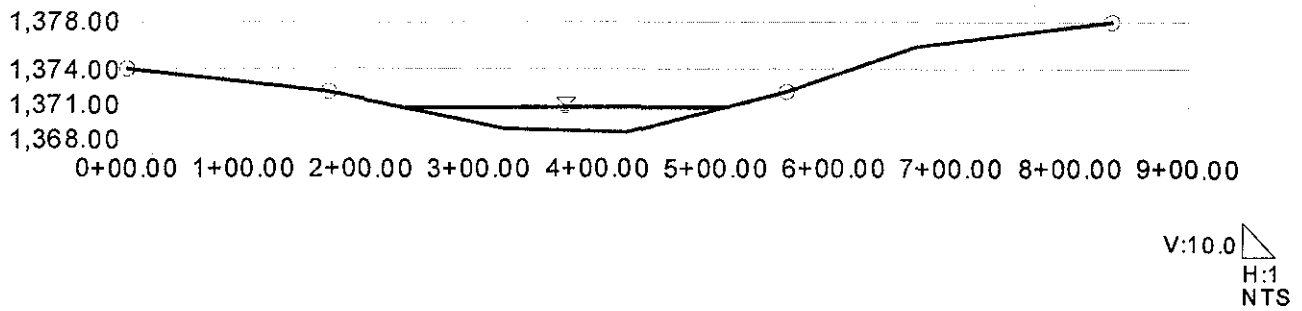
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,374.00
1+71.64	1,372.00
3+20.77	1,369.02
4+24.56	1,368.61
5+59.54	1,372.00
6+73.69	1,376.00
8+34.88	1,378.00

Tributary 1 to Unnamed Wash 7 - Approximate Method Section B-B
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 7 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0135	ft/ft
Water Surface Elevation	1,370.69	ft
Elevation Range	1,368.61 to 1,378.00	
Discharge	1,790	cfs



Tributary 1 to Unnamed Wash 7 - Approximate Method Section C-C
Worksheet for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 7 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0049	ft/ft
Discharge	1,790	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,386.08	ft
Elevation Range	1,381.82 to 1,396.00	
Flow Area	368.3	ft²
Wetted Perimeter	143.87	ft
Top Width	143.54	ft
Actual Depth	4.26	ft
Critical Elevation	1,385.05	ft
Critical Slope	0.0190	ft/ft
Velocity	4.86	ft/s
Velocity Head	0.37	ft
Specific Energy	1,386.45	ft
Froude Number	0.54	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+91.61	0.050
0+91.61	2+72.80	0.040
2+72.80	*6+26.61*	*0.050*

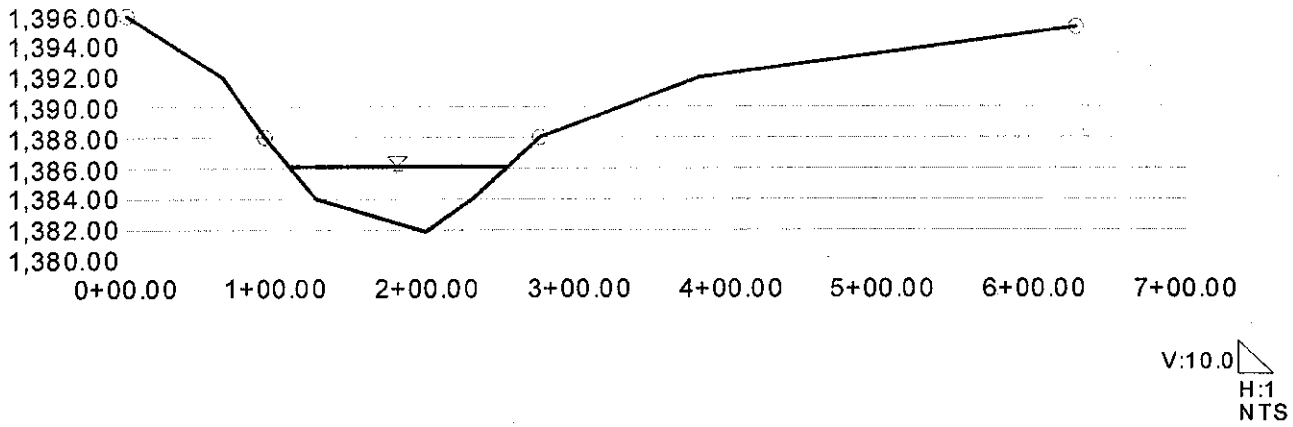
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,396.00
0+64.48	1,392.00
0+91.61	1,386.00
1+25.94	1,384.00
1+97.96	1,381.82
2+28.61	1,384.00
2+72.80	1,388.00
3+78.79	1,392.00
6+26.61	1,395.29

Tributary 1 to Unnamed Wash 7 - Approximate Method Section C-C
Cross Section for Irregular Channel

Project Description	
Worksheet	Tributary 1 to Unnamed Wash 7 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0049	ft/ft
Water Surface Elevation	1,386.08	ft
Elevation Range	1,381.82 to 1,396.00	
Discharge	1,790	cfs



Unnamed Wash 8 – Approximate Method Reach

Unnamed Wash 8 - Approximate Method Section A-A
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0194	ft/ft
Discharge	1,150	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,290.62	ft
Elevation Range	1,288.00 to 1,300.00	
Flow Area	175.5	ft²
Wetted Perimeter	123.18	ft
Top Width	123.00	ft
Actual Depth	2.62	ft
Critical Elevation	1,290.59	ft
Critical Slope	0.0208	ft/ft
Velocity	6.55	ft/s
Velocity Head	0.67	ft
Specific Energy	1,291.29	ft
Froude Number	0.97	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+19.28	0.050
0+19.28	2+01.10	0.040
2+01.10	3+00.15	0.050

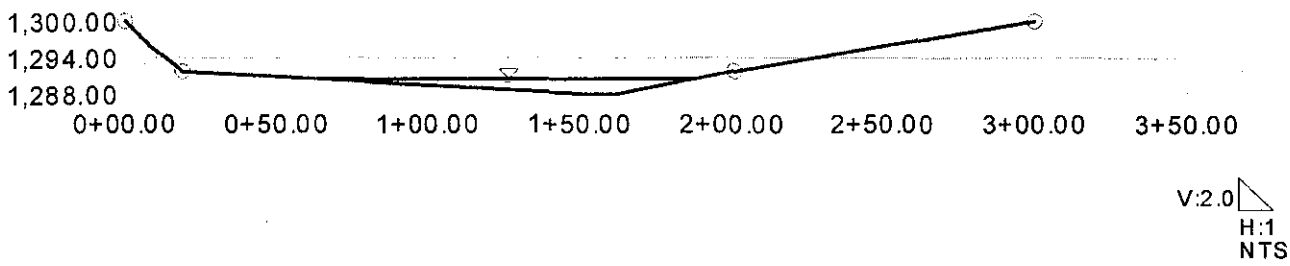
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,300.00
0+08.46	1,296.00
0+19.28	1,292.00
1+51.62	1,288.00
1+59.70	1,288.00
1+62.36	1,288.00
2+01.10	1,292.00
2+49.86	1,296.00
3+00.15	1,300.00

Unnamed Wash 8 - Approximate Method Section A-A
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0194	ft/ft
Water Surface Elevation	1,290.62	ft
Elevation Range	1,288.00 to 1,300.00	
Discharge	1,150	cfs



Unnamed Wash 8 - Approximate Method Section B-B
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0146	ft/ft
Discharge	1,150	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,310.98	ft
Elevation Range	1,307.30 to 1,324.00	
Flow Area	162.4	ft²
Wetted Perimeter	81.97	ft
Top Width	81.20	ft
Actual Depth	3.68	ft
Critical Elevation	1,310.78	ft
Critical Slope	0.0191	ft/ft
Velocity	7.08	ft/s
Velocity Head	0.78	ft
Specific Energy	1,311.75	ft
Froude Number	0.88	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+30.69	0.050
0+30.69	1+32.06	0.040
1+32.06	1+84.12	0.050

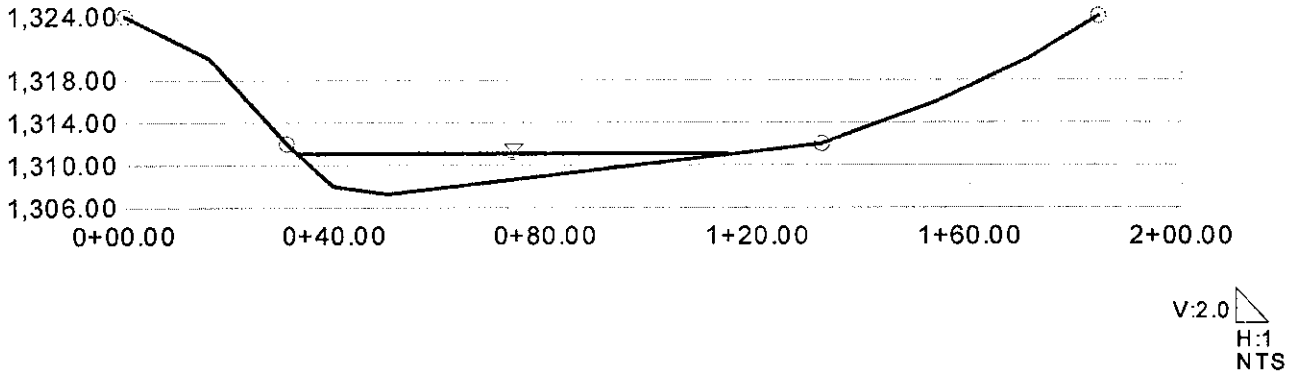
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,324.00
0+16.27	1,320.00
0+30.69	1,312.00
0+39.58	1,308.00
0+49.56	1,307.30
0+62.23	1,308.00
1+32.06	1,312.00
1+53.77	1,316.00
1+70.96	1,320.00
1+84.12	1,324.00

Unnamed Wash 8 - Approximate Method Section B-B
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0146	ft/ft
Water Surface Elevation	1,310.98	ft
Elevation Range	1,307.30 to 1,324.00	
Discharge	1,150	cfs



Unnamed Wash 8 - Approximate Method Section C-C
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0150	ft/ft
Discharge	1,150	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,325.53	ft
Elevation Range	1,321.50 to 1,348.00	
Flow Area	154.5	ft²
Wetted Perimeter	73.81	ft
Top Width	73.28	ft
Actual Depth	4.03	ft
Critical Elevation	1,325.36	ft
Critical Slope	0.0186	ft/ft
Velocity	7.44	ft/s
Velocity Head	0.86	ft
Specific Energy	1,326.39	ft
Froude Number	0.90	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+91.82	0.050
0+91.82	2+37.31	0.040
2+37.31	2+79.09	0.050

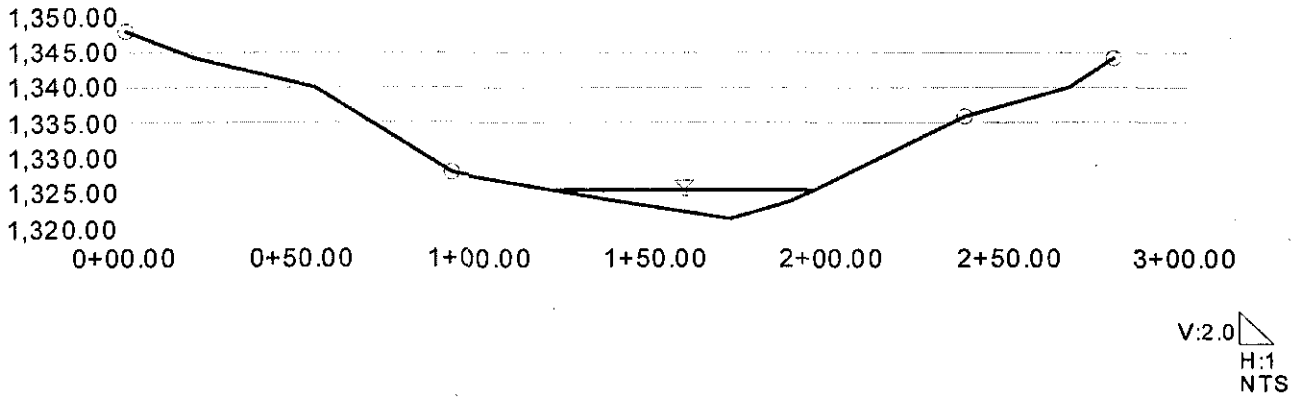
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,348.00
0+19.70	1,344.00
0+53.59	1,340.00
0+78.82	1,332.00
0+91.82	1,328.00
1+39.14	1,324.00
1+71.08	1,321.50
1+88.12	1,324.00
2+37.31	1,336.00
2+66.31	1,340.00
2+79.09	1,344.00

Unnamed Wash 8 - Approximate Method Section C-C
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0150	ft/ft
Water Surface Elevation	1,325.53	ft
Elevation Range	1,321.50 to 1,348.00	
Discharge	1,150	cfs



Unnamed Wash 8 - Approximate Method Section D-D
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0117	ft/ft
Discharge	1,150	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,338.57	ft
Elevation Range	1,334.60 to 1,348.00	
Flow Area	166.2	ft²
Wetted Perimeter	73.55	ft
Top Width	72.79	ft
Actual Depth	3.97	ft
Critical Elevation	1,338.21	ft
Critical Slope	0.0185	ft/ft
Velocity	6.92	ft/s
Velocity Head	0.74	ft
Specific Energy	1,339.31	ft
Froude Number	0.81	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+29.20	0.050
0+29.20	1+22.13	0.040
1+22.13	1+75.12	0.050

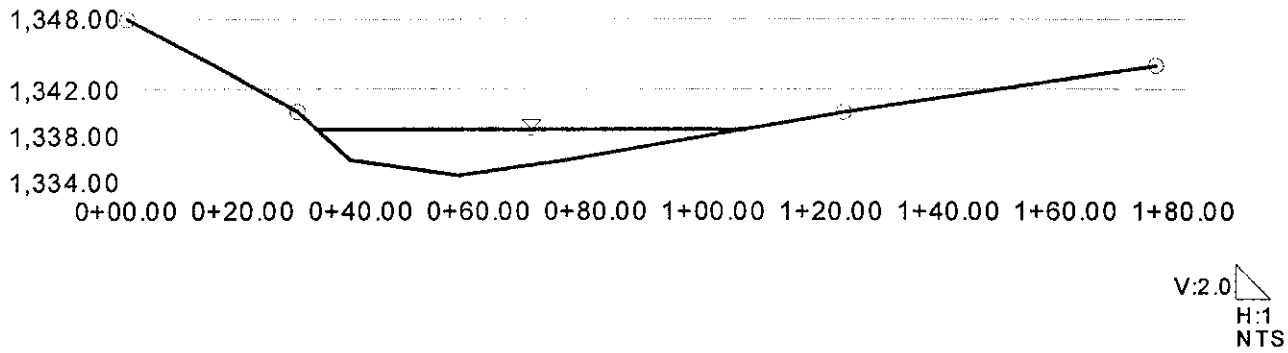
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,348.00
0+15.11	1,344.00
0+29.20	1,340.00
0+38.23	1,336.00
0+56.53	1,334.60
0+74.84	1,336.00
1+22.13	1,340.00
1+75.12	1,344.00

Unnamed Wash 8 - Approximate Method Section D-D
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0117	ft/ft
Water Surface Elevation	1,338.57	ft
Elevation Range	1,334.60 to 1,348.00	
Discharge	1,150	cfs



Unnamed Wash 8 - Approximate Method Section E-E
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0118	ft/ft
Discharge	1,150	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,349.52	ft
Elevation Range	1,346.10 to 1,356.00	
Flow Area	177.5	ft²
Wetted Perimeter	87.26	ft
Top Width	86.93	ft
Actual Depth	3.42	ft
Critical Elevation	1,349.19	ft
Critical Slope	0.0192	ft/ft
Velocity	6.48	ft/s
Velocity Head	0.65	ft
Specific Energy	1,350.17	ft
Froude Number	0.80	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	2+28.58	0.050
2+28.58	3+50.93	0.040
3+50.93	4+74.28	0.050

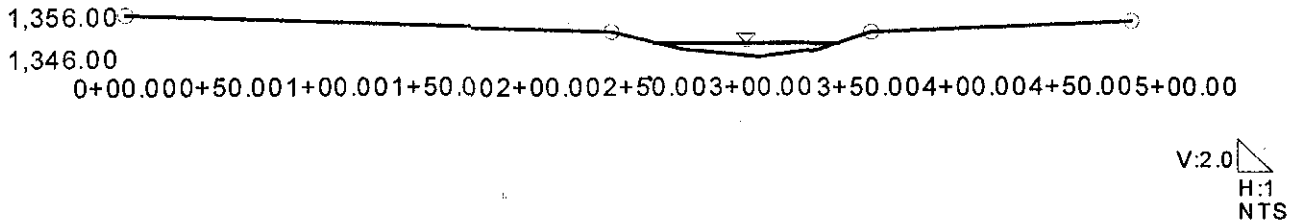
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,356.00
2+28.58	1,352.00
2+61.75	1,348.00
2+98.32	1,346.10
3+27.03	1,348.00
3+50.93	1,352.00
4+74.28	1,354.40

Unnamed Wash 8 - Approximate Method Section E-E
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0118	ft/ft
Water Surface Elevation	1,349.52	ft
Elevation Range	1,346.10 to 1,356.00	
Discharge	1,150	cfs



Unnamed Wash 8 - Approximate Method Section F-F
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0102	ft/ft
Discharge	1,150	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,357.56	ft
Elevation Range	1,355.60 to 1,360.00	
Flow Area	308.5	ft²
Wetted Perimeter	311.53	ft
Top Width	311.50	ft
Actual Depth	1.96	ft
Critical Elevation	1,357.25	ft
Critical Slope	0.0247	ft/ft
Velocity	3.73	ft/s
Velocity Head	0.22	ft
Specific Energy	1,357.77	ft
Froude Number	0.66	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+85.00	0.050
1+85.00	6+43.47	0.040
6+43.47	10+89.20	0.050

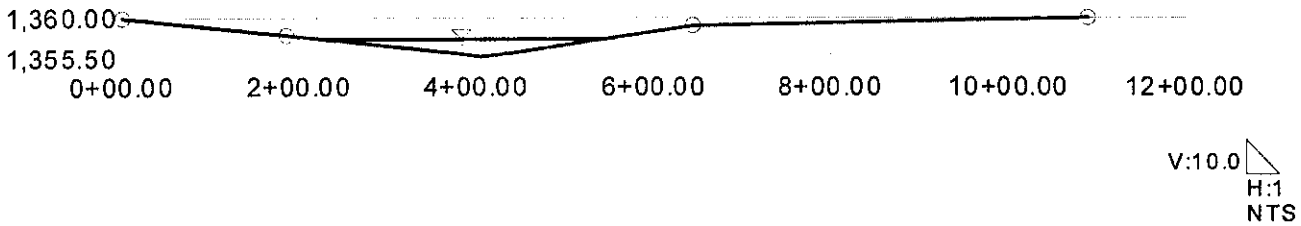
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,360.00
1+85.00	1,358.01
3+72.06	1,356.00
4+04.05	1,355.60
4+39.85	1,356.00
6+43.47	1,359.20
10+89.20	1,360.00

Unnamed Wash 8 - Approximate Method Section F-F
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0102	ft/ft
Water Surface Elevation	1,357.56	ft
Elevation Range	1,355.60 to 1,360.00	
Discharge	1,150	cfs



Unnamed Wash 8 - Approximate Method Section G-G
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section G-G
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0067	ft/ft
Discharge	1,150	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	*0.040*	
Water Surface Elevation	1,366.25	ft
Elevation Range	1,363.70 to 1,372.00	
Flow Area	311.6	ft²
Wetted Perimeter	233.11	ft
Top Width	233.05	ft
Actual Depth	2.55	ft
Critical Elevation	1,365.70	ft
Critical Slope	0.0229	ft/ft
Velocity	3.69	ft/s
Velocity Head	0.21	ft
Specific Energy	1,366.46	ft
Froude Number	0.56	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	3+84.37	0.040
3+84.37	8+20.62	0.050

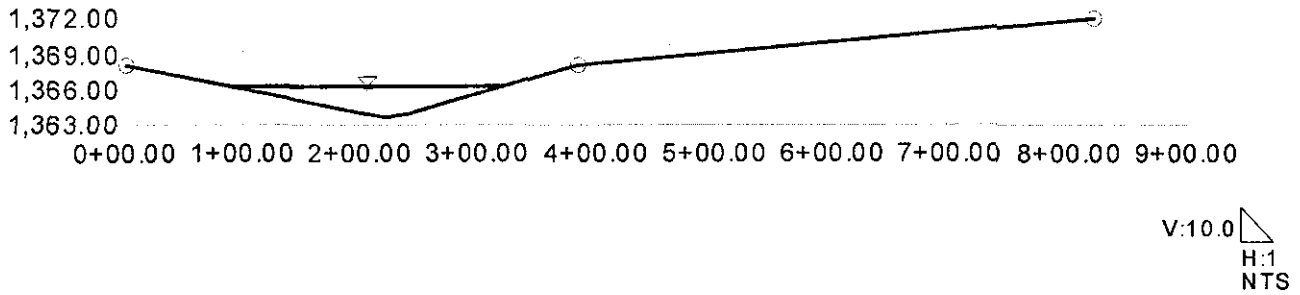
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,368.00
2+01.29	1,364.00
2+20.62	1,363.70
2+40.42	1,364.00
3+84.37	1,368.00
8+20.62	1,372.00

Unnamed Wash 8 - Approximate Method Section G-G
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section G-G
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0067	ft/ft
Water Surface Elevation	1,366.25	ft
Elevation Range	1,363.70 to 1,372.00	
Discharge	1,150	cfs



Unnamed Wash 8 - Approximate Method Section H-H
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section H-H
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0062	ft/ft
Discharge	1,150	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,371.54	ft
Elevation Range	1,369.70 to 1,376.00	
Flow Area	416.3	ft²
Wetted Perimeter	453.70	ft
Top Width	453.68	ft
Actual Depth	1.84	ft
Critical Elevation	1,371.10	ft
Critical Slope	0.0263	ft/ft
Velocity	2.76	ft/s
Velocity Head	0.12	ft
Specific Energy	1,371.65	ft
Froude Number	0.51	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	2+79.25	0.050
2+79.25	8+47.78	0.040
8+47.78	14+62.17	0.050

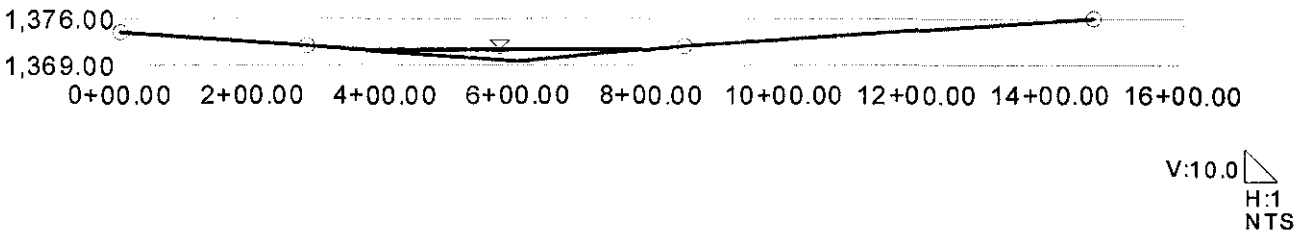
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,374.00
2+79.25	1,372.00
5+97.90	1,369.70
8+47.78	1,372.00
14+62.17	1,376.00

Unnamed Wash 8 - Approximate Method Section H-H
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section H-H
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0062	ft/ft
Water Surface Elevation	1,371.54	ft
Elevation Range	1,369.70 to 1,376.00	
Discharge	1,150	cfs



Unnamed Wash 8 - Approximate Method Section I-I
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section I-I
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0061	ft/ft
Discharge	1,150	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.042	
Water Surface Elevation	1,376.27	ft
Elevation Range	1,374.50 to 1,378.00	
Flow Area	456.4	ft²
Wetted Perimeter	527.50	ft
Top Width	527.49	ft
Actual Depth	1.77	ft
Critical Elevation	1,375.81	ft
Critical Slope	0.0293	ft/ft
Velocity	2.52	ft/s
Velocity Head	0.10	ft
Specific Energy	1,376.37	ft
Froude Number	0.48	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	*0+88.48*	*0.050*
0+88.48	5+24.11	0.040
5+24.11	6+85.71	0.050

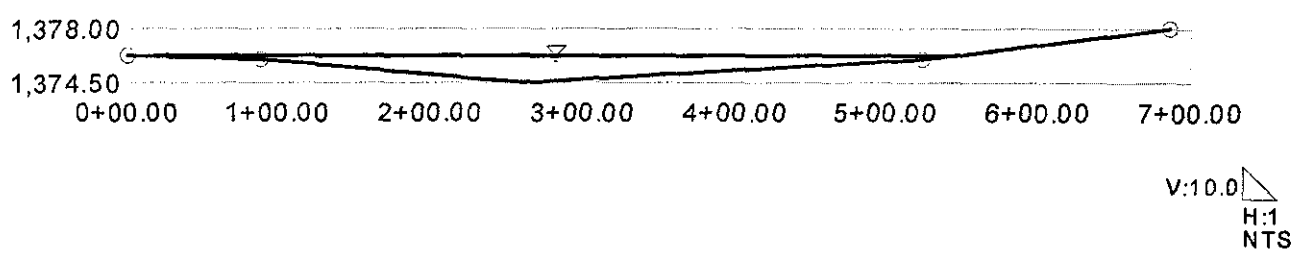
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,376.34
0+88.48	1,376.00
2+60.28	1,374.50
5+24.11	1,376.00
6+85.71	1,378.00

Unnamed Wash 8 - Approximate Method Section I-I
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 8 - Approximate Method Section I-I
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.042	
Slope	0.0061	ft/ft
Water Surface Elevation	1,376.27	ft
Elevation Range	1,374.50 to 1,378.00	
Discharge	1,150	cfs



Unnamed Wash 9 – Approximate Method Reach

Unnamed Wash 9 - Approximate Method Section A-A
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 9 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0171	ft/ft
Discharge	1,130	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,293.54	ft
Elevation Range	1,290.20 to 1,304.00	
Flow Area	143.8	ft²
Wetted Perimeter	69.93	ft
Top Width	69.50	ft
Actual Depth	3.34	ft
Critical Elevation	1,293.48	ft
Critical Slope	0.0186	ft/ft
Velocity	7.86	ft/s
Velocity Head	0.96	ft
Specific Energy	1,294.50	ft
Froude Number	0.96	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+24.07	0.050
0+24.07	1+18.26	0.040
1+18.26	2+13.15	0.050

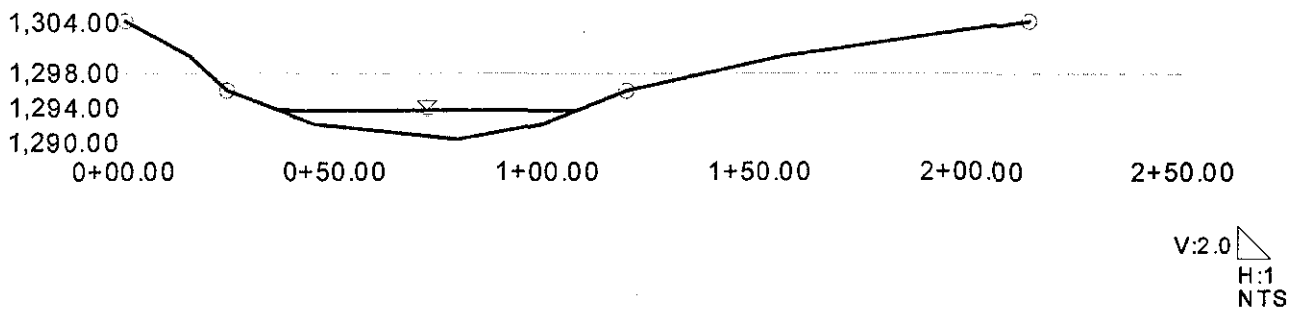
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,304.00
0+14.90	1,300.00
0+24.07	1,296.00
0+44.32	1,292.00
0+78.57	1,290.20
0+98.33	1,292.00
1+18.26	1,296.00
1+55.39	1,300.00
2+13.15	1,304.00

Unnamed Wash 9 - Approximate Method Section A-A
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 9 - Approximate Method Section A-A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0171	ft/ft
Water Surface Elevation	1,293.54	ft
Elevation Range	1,290.20 to 1,304.00	
Discharge	1,130	cfs



Unnamed Wash 9 - Approximate Method Section B-B
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 9 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0258	ft/ft
Discharge	1,130	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,311.72	ft
Elevation Range	1,309.00 to 1,332.00	
Flow Area	154.4	ft²
Wetted Perimeter	113.61	ft
Top Width	113.40	ft
Actual Depth	2.72	ft
Critical Elevation	1,311.83	ft
Critical Slope	0.0208	ft/ft
Velocity	7.32	ft/s
Velocity Head	0.83	ft
Specific Energy	1,312.56	ft
Froude Number	1.11	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+43.79	0.050
0+43.79	1+68.74	0.040
1+68.74	2+38.29	0.050

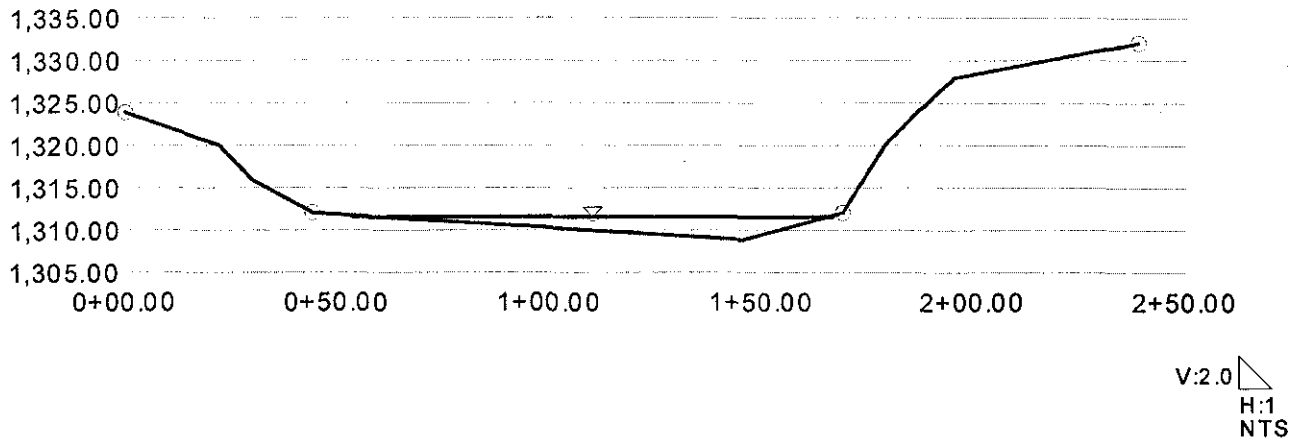
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,324.00
0+22.17	1,320.00
0+30.02	1,316.00
0+43.79	1,312.00
1+45.43	1,309.00
1+68.74	1,312.00
1+79.00	1,320.00
1+86.45	1,324.00
1+95.21	1,328.00
2+38.29	1,332.00

Unnamed Wash 9 - Approximate Method Section B-B
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 9 - Approximate Method Section B-B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0258	ft/ft
Water Surface Elevation	1,311.72	ft
Elevation Range	1,309.00 to 1,332.00	
Discharge	1,130	cfs



Unnamed Wash 9 - Approximate Method Section C-C
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 9 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0114	ft/ft
Discharge	1,130	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	*0.040*	
Water Surface Elevation	1,330.60	ft
Elevation Range	1,327.10 to 1,340.00	
Flow Area	193.5	ft²
Wetted Perimeter	108.31	ft
Top Width	108.07	ft
Actual Depth	3.50	ft
Critical Elevation	1,330.24	ft
Critical Slope	0.0199	ft/ft
Velocity	5.84	ft/s
Velocity Head	0.53	ft
Specific Energy	1,331.13	ft
Froude Number	0.77	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	*1+60.77*	*0.050*
1+60.77	3+10.81	0.040
3+10.81	5+54.38	0.050

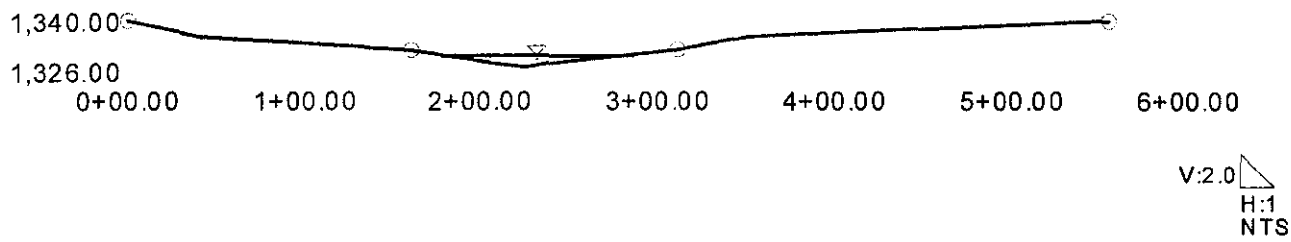
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,340.00
0+40.62	1,336.00
1+60.77	1,332.00
2+07.64	1,328.00
2+24.82	1,327.10
2+38.06	1,328.00
3+10.81	1,332.00
3+50.74	1,336.00
5+54.38	1,340.00

Unnamed Wash 9 - Approximate Method Section C-C
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 9 - Approximate Method Section C-C
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0114	ft/ft
Water Surface Elevation	1,330.60	ft
Elevation Range	1,327.10 to 1,340.00	
Discharge	1,130	cfs



Unnamed Wash 9 - Approximate Method Section D-D
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 9 - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0195	ft/ft
Discharge	1,130	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	*0.040*	
Water Surface Elevation	1,348.06	ft
Elevation Range	1,345.70 to 1,359.20	
Flow Area	193.3	ft²
Wetted Perimeter	161.24	ft
Top Width	161.12	ft
Actual Depth	2.36	ft
Critical Elevation	1,348.01	ft
Critical Slope	0.0223	ft/ft
Velocity	5.85	ft/s
Velocity Head	0.53	ft
Specific Energy	1,348.59	ft
Froude Number	0.94	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	*2+08.24*	*0.050*
2+08.24	3+68.53	0.040
3+68.53	5+72.95	0.050

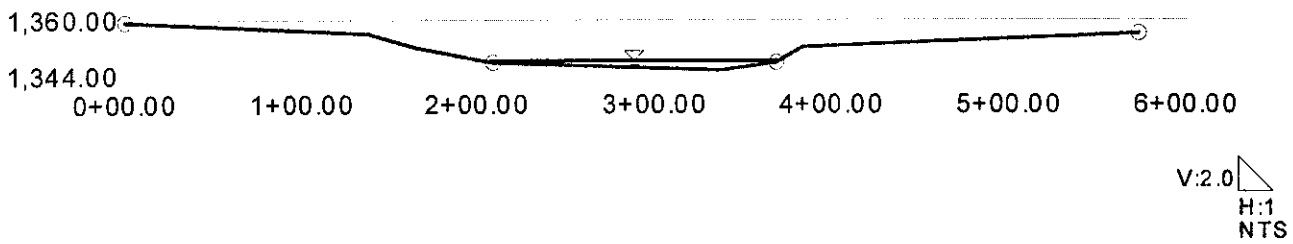
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,359.20
1+37.10	1,356.00
1+63.75	1,352.00
2+08.24	1,348.00
3+36.70	1,345.70
3+68.53	1,348.00
3+83.74	1,352.00
5+72.95	1,356.00

Unnamed Wash 9 - Approximate Method Section D-D
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 9 - Approximate Method Section D-D
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.040
Slope	0.0195 ft/ft
Water Surface Elevation	1,348.06 ft
Elevation Range	1,345.70 to 1,359.20
Discharge	1,130 cfs



Unnamed Wash 9 - Approximate Method Section E-E
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 9 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0161	ft/ft
Discharge	1,130	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,364.12	ft
Elevation Range	1,360.70 to 1,380.00	
Flow Area	167.5	ft²
Wetted Perimeter	96.99	ft
Top Width	96.69	ft
Actual Depth	3.42	ft
Critical Elevation	1,363.99	ft
Critical Slope	0.0201	ft/ft
Velocity	6.75	ft/s
Velocity Head	0.71	ft
Specific Energy	1,364.83	ft
Froude Number	0.90	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+86.00	0.050
1+86.00	2+80.61	0.040
2+80.61	3+90.75	0.050

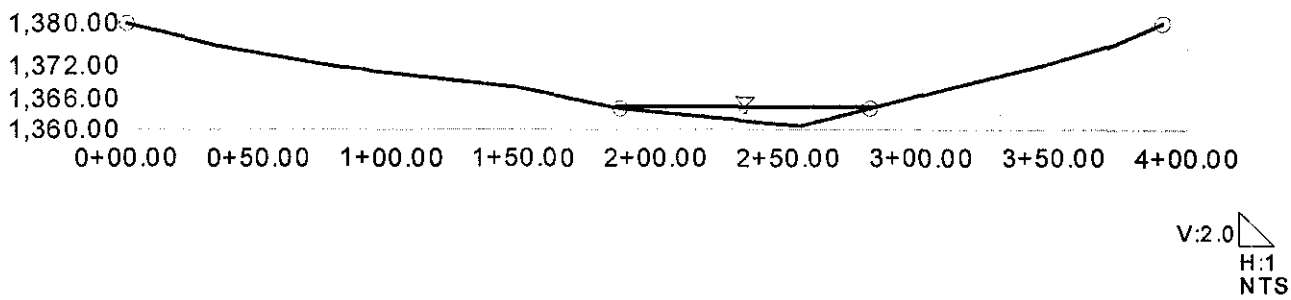
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,380.00
0+32.94	1,376.00
0+77.56	1,372.00
1+46.89	1,368.00
1+86.00	1,364.00
2+54.16	1,360.70
2+80.61	1,364.00
3+11.28	1,368.00
3+44.88	1,372.00
3+72.57	1,376.00
3+90.75	1,380.00

Unnamed Wash 9 - Approximate Method Section E-E
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 9 - Approximate Method Section E-E
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0161	ft/ft
Water Surface Elevation	1,364.12	ft
Elevation Range	1,360.70 to 1,380.00	
Discharge	1,130	cfs



Unnamed Wash 9 - Approximate Method Section F-F
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 9 - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0147	ft/ft
Discharge	1,130	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,378.52	ft
Elevation Range	1,375.40 to 1,400.00	
Flow Area	162.9	ft²
Wetted Perimeter	85.23	ft
Top Width	84.93	ft
Actual Depth	3.12	ft
Critical Elevation	1,378.34	ft
Critical Slope	0.0192	ft/ft
Velocity	6.94	ft/s
Velocity Head	0.75	ft
Specific Energy	1,379.27	ft
Froude Number	0.88	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+88.28	0.050
0+88.28	2+02.02	0.040
2+02.02	3+47.61	0.050

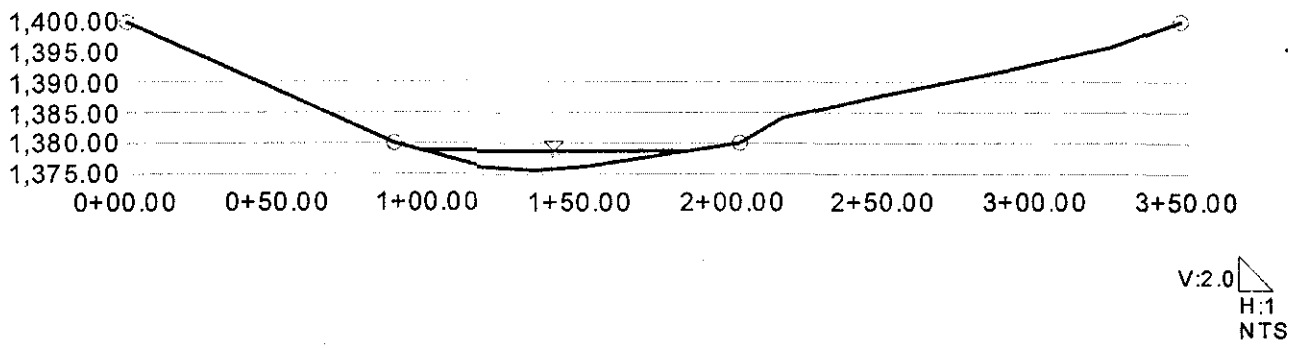
Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,400.00
0+88.28	1,380.00
1+16.54	1,376.00
1+34.78	1,375.40
1+52.20	1,376.00
2+02.02	1,380.00
2+16.26	1,384.00
2+49.53	1,388.00
2+90.97	1,392.00
3+24.58	1,396.00
3+47.61	1,400.00

Unnamed Wash 9 - Approximate Method Section F-F
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 9 - Approximate Method Section F-F
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0147	ft/ft
Water Surface Elevation	1,378.52	ft
Elevation Range	1,375.40 to 1,400.00	
Discharge	1,130	cfs



Unnamed Wash 9 - Approximate Method Section G-G
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 9 - Approximate Method Section G-G
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0144	ft/ft
Discharge	1,130	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,392.69	ft
Elevation Range	1,389.21 to 1,413.51	
Flow Area	162.3	ft²
Wetted Perimeter	83.19	ft
Top Width	82.83	ft
Actual Depth	3.48	ft
Critical Elevation	1,392.51	ft
Critical Slope	0.0192	ft/ft
Velocity	6.96	ft/s
Velocity Head	0.75	ft
Specific Energy	1,393.44	ft
Froude Number	0.88	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+08.45	0.050
1+08.45	2+19.94	0.040
2+19.94	3+71.17	0.050

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,413.51
0+25.22	1,412.00
0+50.17	1,408.00
0+75.31	1,404.00
0+99.85	1,400.00
1+08.45	1,396.00
1+27.21	1,392.00
1+71.24	1,389.21
2+04.06	1,392.00
2+19.94	1,396.00
2+57.60	1,400.00

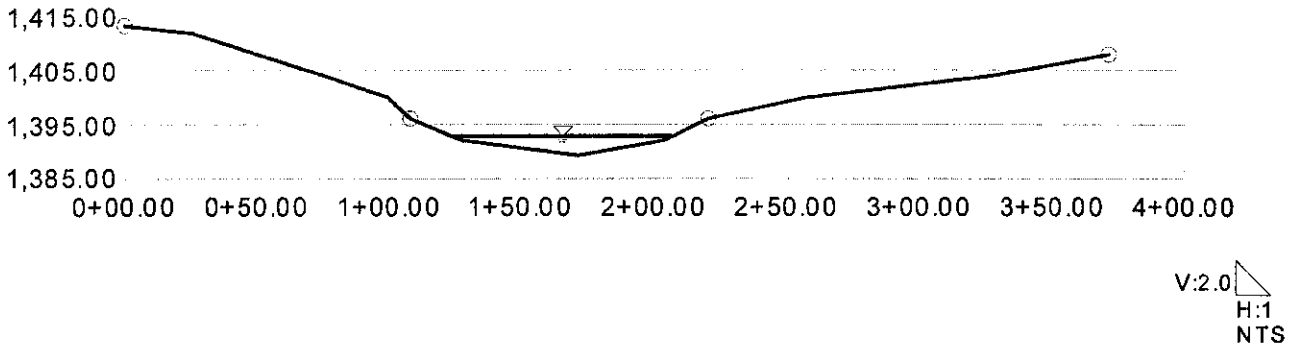
Unnamed Wash 9 - Approximate Method Section G-G
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
3+26.57	1,404.00
3+71.17	1,408.00

Unnamed Wash 9 - Approximate Method Section G-G
Cross Section for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 9 - Approximate Method Section G-G
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0144	ft/ft
Water Surface Elevation	1,392.69	ft
Elevation Range	1,389.21 to 1,413.51	
Discharge	1,130	cfs



Unnamed Wash 9 - Approximate Method Section H-H
Worksheet for Irregular Channel

Project Description	
Worksheet	Unnamed Wash 9 - Approximate Method Section H-H
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.0170	ft/ft
Discharge	860	cfs

Options	
Current Roughness Method	Horton's Method
Open Channel Weighting Method	Horton's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.040	
Water Surface Elevation	1,407.51	ft
Elevation Range	1,404.10 to 1,420.00	
Flow Area	139.3	ft²
Wetted Perimeter	96.81	ft
Top Width	96.01	ft
Actual Depth	3.41	ft
Critical Elevation	1,407.39	ft
Critical Slope	0.0211	ft/ft
Velocity	6.17	ft/s
Velocity Head	0.59	ft
Specific Energy	1,408.10	ft
Froude Number	0.90	
Flow Type	Subcritical	

Calculation Messages:
Flow is divided.

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	1+29.90	0.050
1+29.90	1+84.34	0.040
1+84.34	3+39.96	0.050
3+39.96	3+98.35	0.040
3+98.35	4+75.05	0.050

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	1,420.00
0+52.37	1,416.00
0+96.59	1,412.00
1+29.90	1,408.00
1+67.07	1,404.10
1+84.34	1,408.00

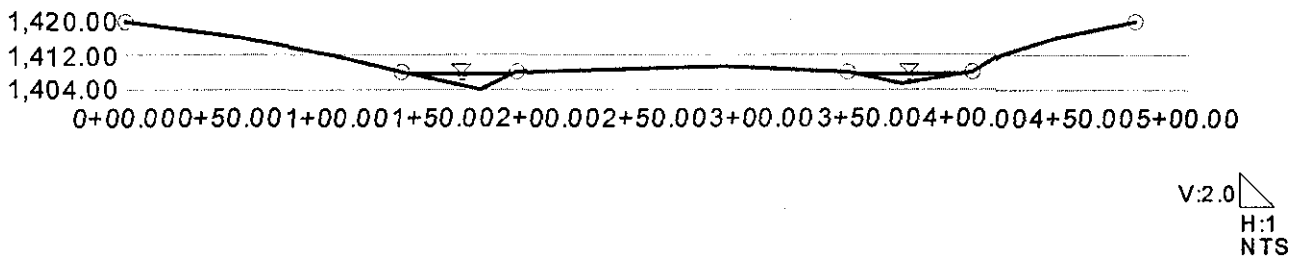
Unnamed Wash 9 - Approximate Method Section H-H
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
2+81.93	1,409.50
3+39.96	1,408.00
3+64.56	1,405.10
3+98.35	1,408.00
4+12.27	1,412.00
4+38.30	1,416.00
4+75.05	1,420.00

Unnamed Wash 9 - Approximate Method Section H-H
Cross Section for Irregular Channel

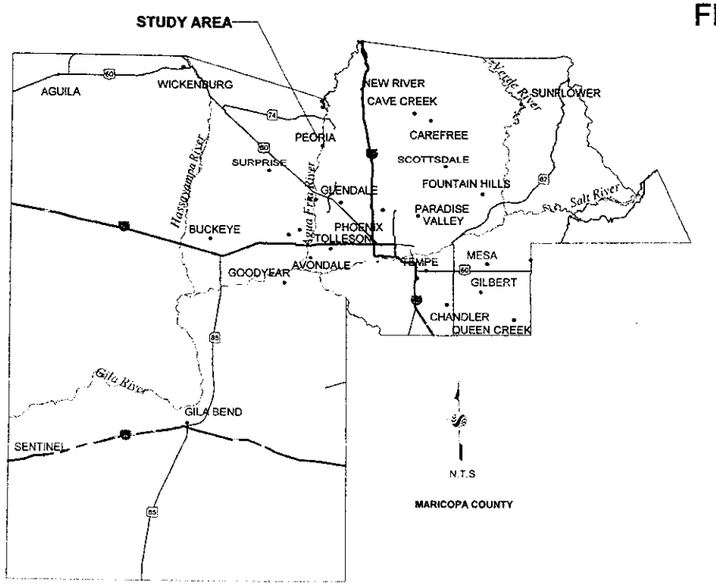
Project Description	
Worksheet	Unnamed Wash 9 - Approximate Method Section H-H
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.040	
Slope	0.0170	ft/ft
Water Surface Elevation	1,407.51	ft
Elevation Range	1,404.10 to 1,420.00	
Discharge	860	cfs

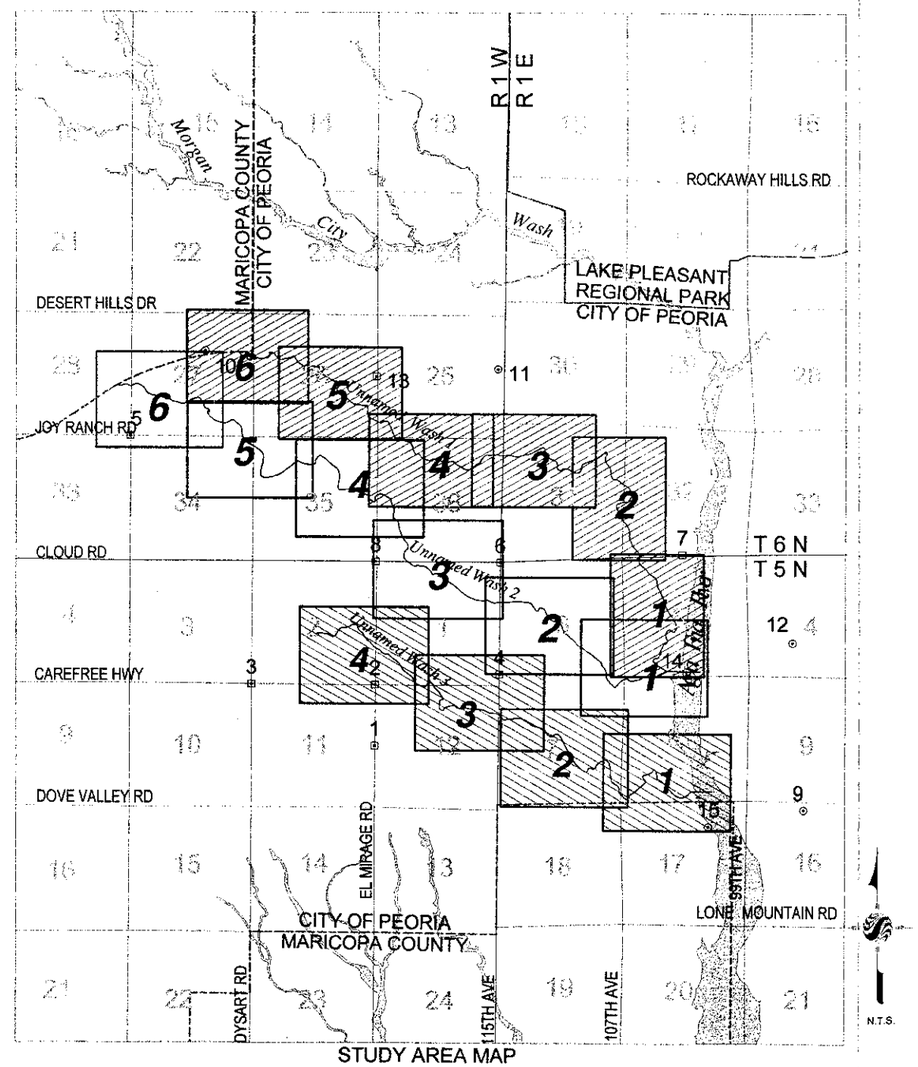


APPENDIX N: REDUCED SCALE FLOODPLAIN AND FLOODWAY WORK MAPS

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
NORTH PEORIA AREA DRAINAGE MASTER PLAN
DETAIL FLOODPLAIN MAPS
FCD CONTRACT NO. 99-45



LOCATION MAP



STUDY AREA MAP
AND INDEX SHEET

DATUM
HORIZONTAL: North American Datum of 1983
VERTICAL: National Geodetic Vertical Datum of 1929

STATEMENTS BY PROFESSIONAL REGISTRANTS

The following statements apply to the individual seals affixed to each of the maps following this cover sheet.

The ground control survey was prepared under my direct supervision:

The photogrammetry and topographic mapping were prepared under my direct supervision:

The hydrologic values used for the floodplain and floodway delineation and the floodplain and floodway delineation were prepared under my direct supervision:

MICHAEL C. GERLACH
ARIZONA U.S.A.

AERIAL MAPPING
Cooper Aerial Surveys Co.
11402 N. Cave Creek Road
Phoenix, AZ 85020
(602) 678-5111

GROUND CONTROL
Valco Surveying Corporation
6426 E. Virginia Avenue
Scottsdale, AZ 85257
(480) 990-2412

HYDROLOGY
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Phoenix, AZ 85044-5355
(602) 438-2200

HYDRAULICS
Stantec Consulting Inc.
8211 South 48th Street
Phoenix, AZ 85044-5355
(602) 438-2200

LEGEND

- Study Wash
- Plate 4 Sheets
- Plate 5 Sheets
- Plate 6 Sheets
- 1 Sheet Number
- 09 Section Label
- Section Lines
- Corporate Limits
- 12 Control Point with ERM Reference Number
- 1 Section Corner with ERM Reference Number

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Phoenix, Az 85044-5355 U.S.A.
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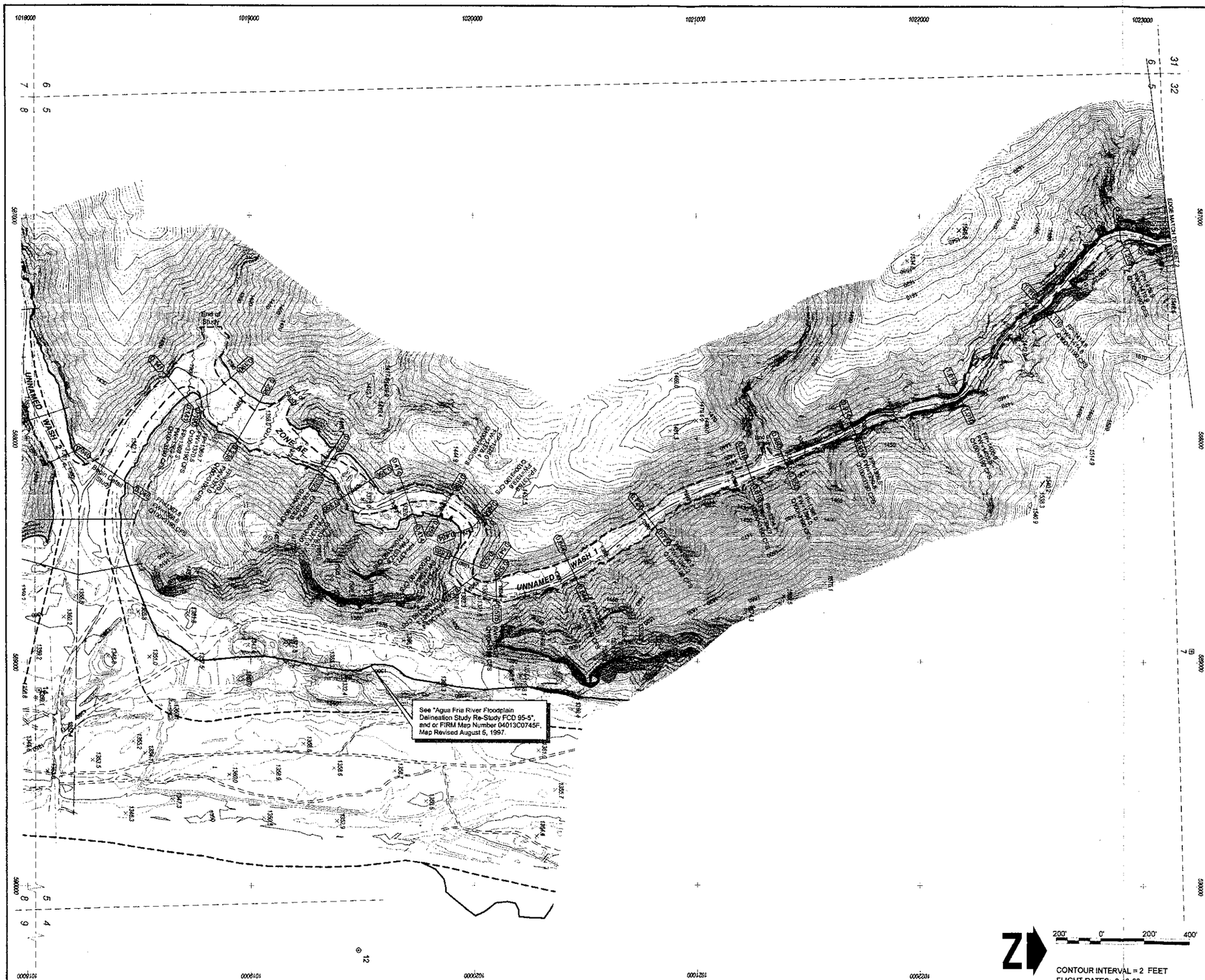
DESIGN CHK	PJE	04/01
PLANS	NKD	04/01
PLANS CHK	PJE	04/01

COVER SHEET SHEET 1 OF 1

THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS FOR 1"= 400' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS.

COOPER AERIAL SURVEYS CO.

GROUND CONTROL SURVEY DATA PROVIDED BY VALCO SURVEYING CORP.



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

COOPER AERIAL SURVEYS CO.

GROUND CONTROL SURVEY DATA PROVIDED BY VALCO SURVEYING CORP.

LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 — M13.0
CROSS SECTION	0.100 — FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION) FW= 1889.54 Q100 = CFS (SHOCKACHED WATER SURFACE ELEVATION 100 YEAR DISCHARGE) (CROSS SECTION RIVER MILE DESIGNATION)
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
CORPORATE LIMITS	Corporate Limits
COUNTY, PARISH, STATE OR INTERNATIONAL BOUNDARY	County Boundary
SECTION LINES	

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

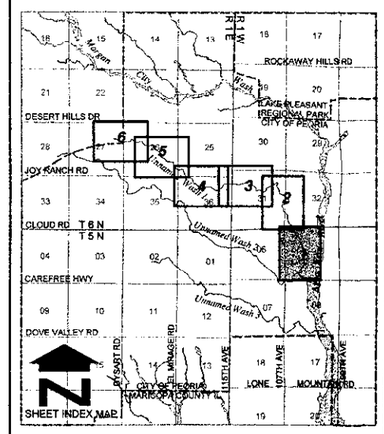
I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
7	1499.825	GLO BRASS CAP 1/4 CORNER SECTIONS 5 & 32 T 6 N, R 1 E, N: 1023210.001 E: 568949.105
12	1440.686	CHISLED "+" ON STRUCTURE, VALCO TBM 65 - NORTHEAST CORNER OF CONCRETE BARRIER ON BRIDGE OVER BEARDSLEY CANAL +-1.8 MILES WEST OF LAKE PLEASANT ROAD AND WEST CAREFREE HIGHWAY. N: 1019462.853 E: 593588.029

NOTES

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

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET. NGVD 1929 ELEVATIONS WERE DERIVED BY SUBTRACTING THE PUBLISHED DIFFERENCE OF 2.07 FEET AT BM S-386 FROM THE ADJUSTED NAVD 1998 VALUES.

3- ALL SECTION LINES ARE APPROXIMATE.



NO	REVISION	BY	DATE

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP UNNAMED WASH 1 F.C.D. CONTRACT NO. 99-45

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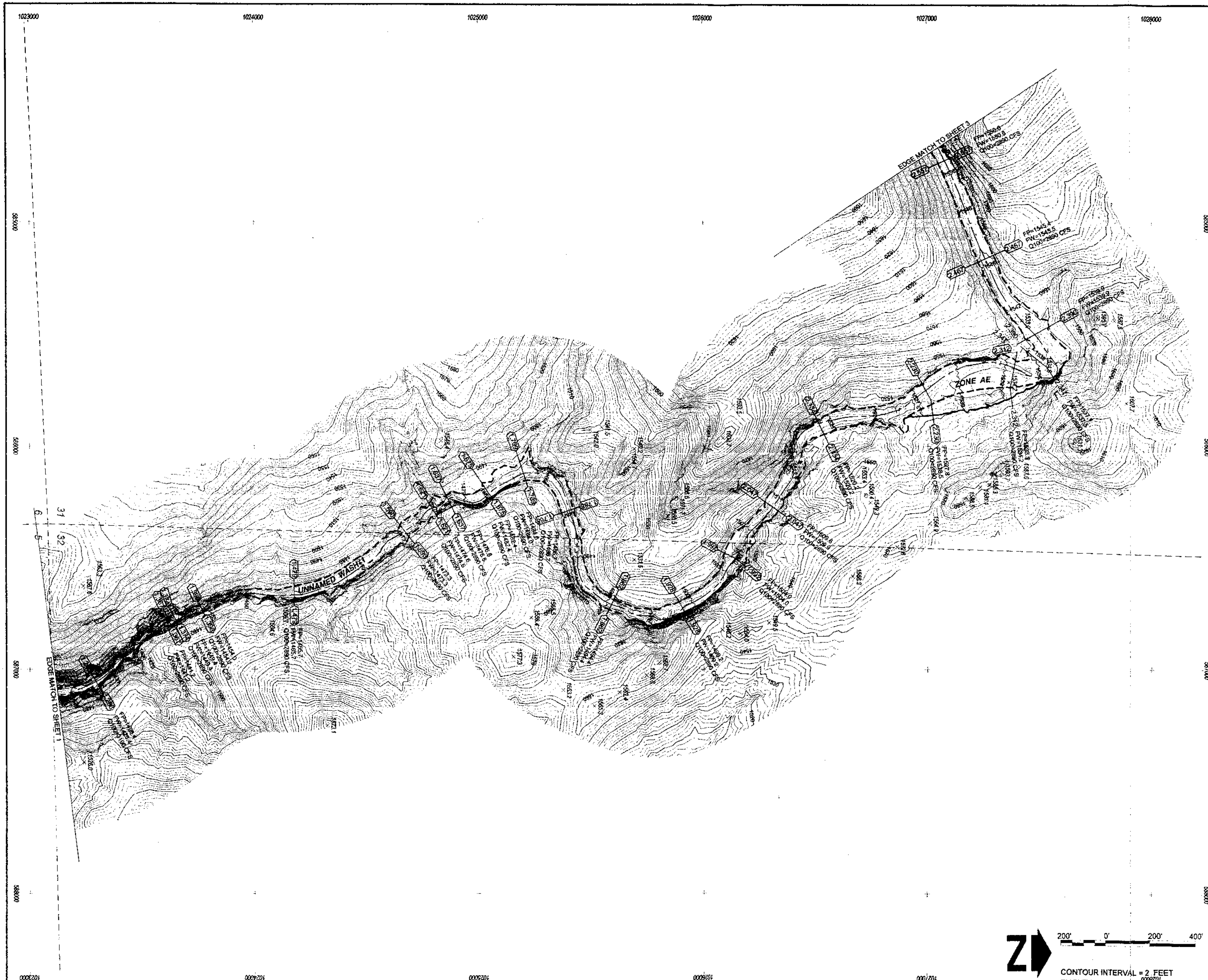
PLANS CHK.	PJE	04/01

PLATE 4 SHEET 1 OF 5



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

COOPER AERIAL SURVEYS CO.

GROUND CONTROL SURVEY DATA PROVIDED BY VALCO SURVEYING CORP

LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 M13.0
CROSS SECTION	0.100 FP= 1888.74 FW= 1889.54 Q100 = CFS
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
CORPORATE LIMITS	Corporate Limits
COUNTY, PARISH, STATE OR INTERNATIONAL BOUNDARY	County Boundary
SECTION LINES	

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

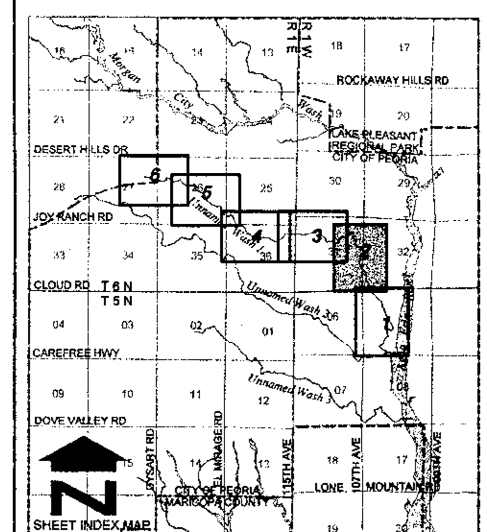
I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION

NOTES

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

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET. NGVD 1929 ELEVATIONS WERE DERIVED BY SUBTRACTING THE PUBLISHED DIFFERENCE OF 2.07 FEET AT BM S-366 FROM THE ADJUSTED NAVD 1998 VALUES.

3- ALL SECTION LINES ARE APPROXIMATE.



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP UNNAMED WASH 1 F.C.D. CONTRACT NO. 99-45

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35150 R. MICHAEL C. GERLACH ARIZONA U.S.A.

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PLANS	NKD	04/01
PLANS CHK.	PJE	04/01

PLATE 4 SHEET 2 OF 6

LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 M13.0
CROSS SECTION	0.100 FP= 1888.74 FW= 1889.54 Q100 = CFS
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
CORPORATE LIMITS	Corporate Limits
COUNTY, PARISH, STATE OR INTERNATIONAL BOUNDARY	County Boundary
SECTION LINES	

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

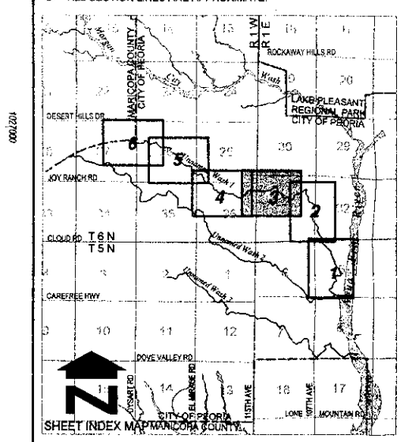
I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
11 ⊙	1731.577	ADOT DISK STAMPED "LAKE" IN ROCK OUTCROP, LAKE - IN SOUTH R/W SR 74, 1 MILE SW OF LAKE PLEASANT AT MILEPOST 19.20. THE STATION IS 3 FEET INSIDE THE SOUTH R/W FENCE AND MARKED BY A WITNESS POST & SIGN. N: 1031113.905 E: 581053.811

NOTES

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

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET. NGVD 1929 ELEVATIONS WERE DERIVED BY SUBTRACTING THE PUBLISHED DIFFERENCE OF 2.07 FEET AT BM S-368 FROM THE ADJUSTED NAVD 1988 VALUES.

3- ALL SECTION LINES ARE APPROXIMATE.



SHEET INDEX MAP MARICOPA COUNTY

NO	REVISION	BY	DATE
2			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP UNNAMED WASH 1 F.C.D. CONTRACT NO. 99-45

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PLANS CHK.	PJE	04/01

PLATE 4 SHEET 3 OF 6

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

COOPER AERIAL SURVEYS CO.

GROUND CONTROL SURVEY DATA PROVIDED BY VALCO SURVEYING CORP.

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

COOPER AERIAL SURVEYS CO.

GROUND CONTROL SURVEY DATA PROVIDED BY VALCO SURVEYING CORP.

LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 — M13.0
CROSS SECTION	0.100 — FP= 1888.74 FW= 1889.54 Q100 = CFS
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
CORPORATE LIMITS	Corporate Limits
COUNTY, PARISH, STATE OR INTERNATIONAL BOUNDARY	County Boundary
SECTION LINES	

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929

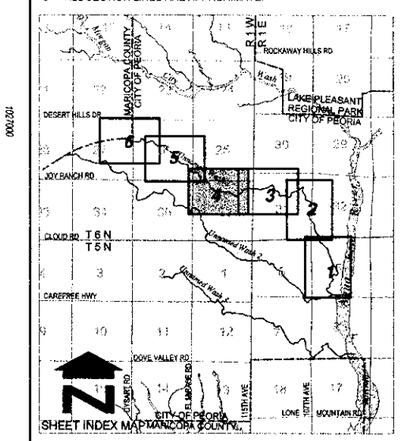
I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION

NOTES

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

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET. NGVD 1929 ELEVATIONS WERE DERIVED BY SUBTRACTING THE PUBLISHED DIFFERENCE OF 2.07 FEET AT BM S-366 FROM THE ADJUSTED NAVD 1996 VALUES.

3- ALL SECTION LINES ARE APPROXIMATE.



NO	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

NORTH PEORIA
AREA DRAINAGE MASTER PLAN
FLOODWAY AND FLOODPLAIN MAP
UNNAMED WASH 1
F.C.D. CONTRACT NO. 99-45

R. MICHAEL C. GERLACH 35150 ARIZONA U.S.A.

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DESIGN	MCG	04/01
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PLANS	NKD	04/01
PLANS CHK.	PJE	04/01

PLATE 4 SHEET 4 OF 6

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

COOPER AERIAL SURVEYS CO.

GROUND CONTROL SURVEY DATA PROVIDED BY VALCO SURVEYING CORP.

LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 M13.0
CROSS SECTION	0.100 — FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION) FW= 1889.54 (FLOODWAY WATER SURFACE ELEVATION) Q100 = CFS (100 YEAR DISCHARGE) (CROSS SECTION STATION MILE DESCRIPTION)
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
CORPORATE LIMITS	Corporate Limits
COUNTY, PARISH, STATE OR INTERNATIONAL BOUNDARY	County Boundary
SECTION LINES	

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

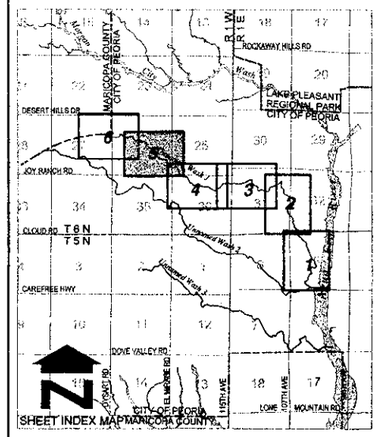
I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
13	1747.520	GLO BRASS CAP, 1/4 CORNER SECTION 26 AND 25, T 6 N, R 1 W N: 1030780.041 E: 575913.787

NOTES

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

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET. NGVD 1929 ELEVATIONS WERE DERIVED BY SUBTRACTING THE PUBLISHED DIFFERENCE OF 2.07 FEET AT BM S-366 FROM THE ADJUSTED NAVD 1998 VALUES.

3- ALL SECTION LINES ARE APPROXIMATE.



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP UNNAMED WASH 1 F.C.D. CONTRACT NO. 99-45

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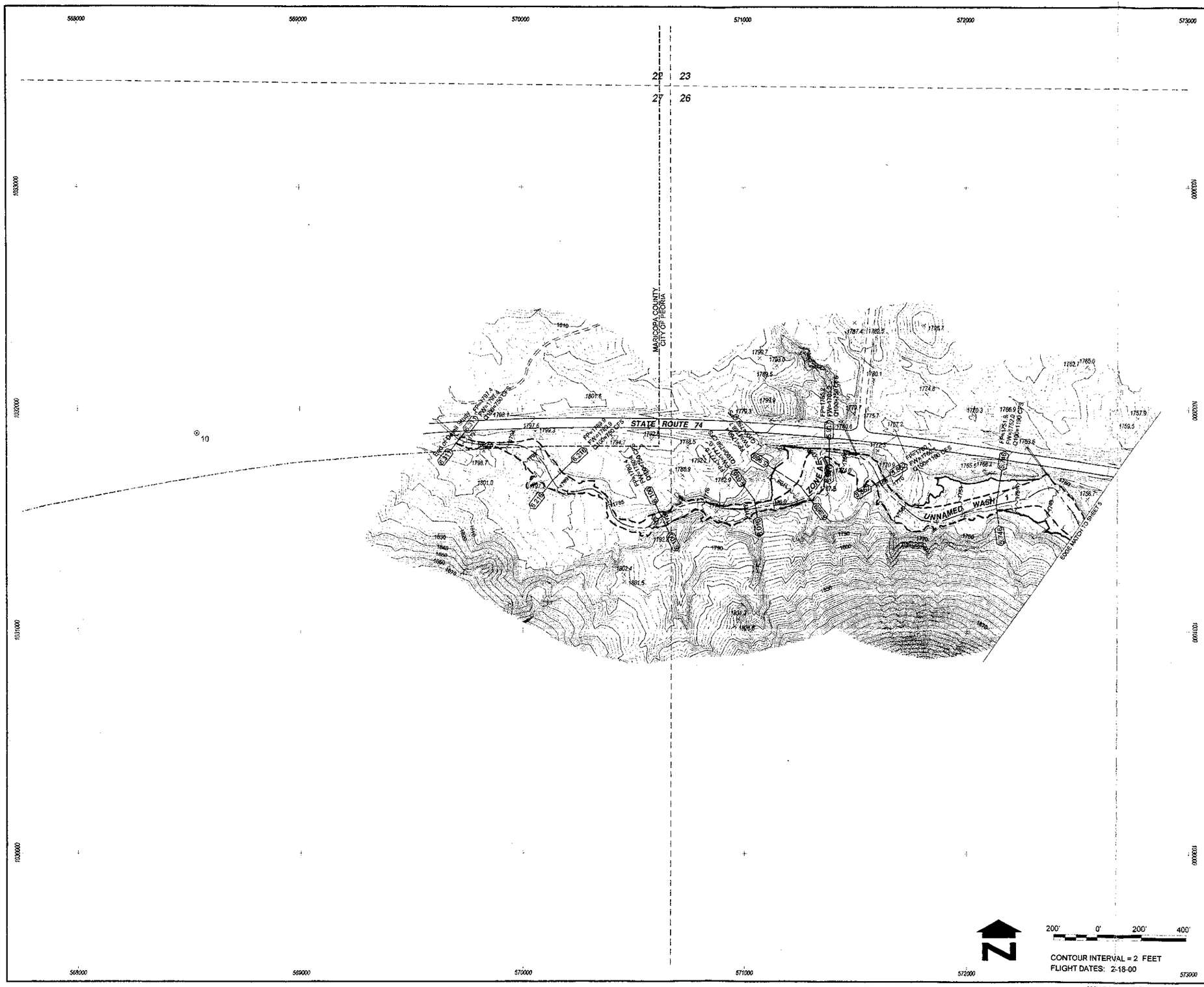
PLANS	NKD	01/01
PLANS CHK	PJE	01/01

PLATE 4 SHEET 6 OF 8



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

COOPER AERIAL SURVEYS CO.

GROUND CONTROL SURVEY DATA PROVIDED BY VALCO SURVEYING CORP.

LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 — M13.0
CROSS SECTION	0.100 — FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION) FW= 1889.54 (ENCROACHED WATER SURFACE ELEVATION) Q100 = CFS (100 YEAR DISCHARGE) (CROSS SECTION RIVER MILE DESIGNATION)
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
CORPORATE LIMITS	Corporate Limits
COUNTY, PARISH, STATE OR INTERNATIONAL BOUNDARY	County Boundary
SECTION LINES	

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

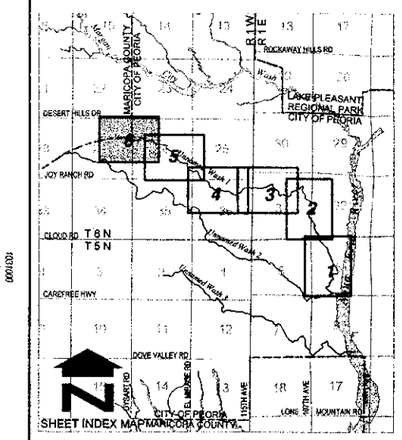
I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
10 ⊙	1856.402	ADOT DISK STAMPED "CUT" IN 10" CONC. MONUMENT, CUT- IN NORTH R/W SR74, 5 MI WSW OF LAKE PLEASANT AT MILEPOST 16.98. THE MARK IS 3.5 FEET SOUTH OF THE NORTH R/W FENCE ON TOP OF A 15 FOOT CUTBANK. N: 1031888.332 E: 568536.274

NOTES

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

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET. NGVD 1929 ELEVATIONS WERE DERIVED BY SUBTRACTING THE PUBLISHED DIFFERENCE OF 2.07 FEET AT BM S-366 FROM THE ADJUSTED NAVD 1998 VALUES.

3- ALL SECTION LINES ARE APPROXIMATE.



NO	REVISION	BY	DATE
2			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP UNNAMED WASH 1 F.C.D. CONTRACT NO. 99-45

35150
R. MICHAEL C. GERLACH
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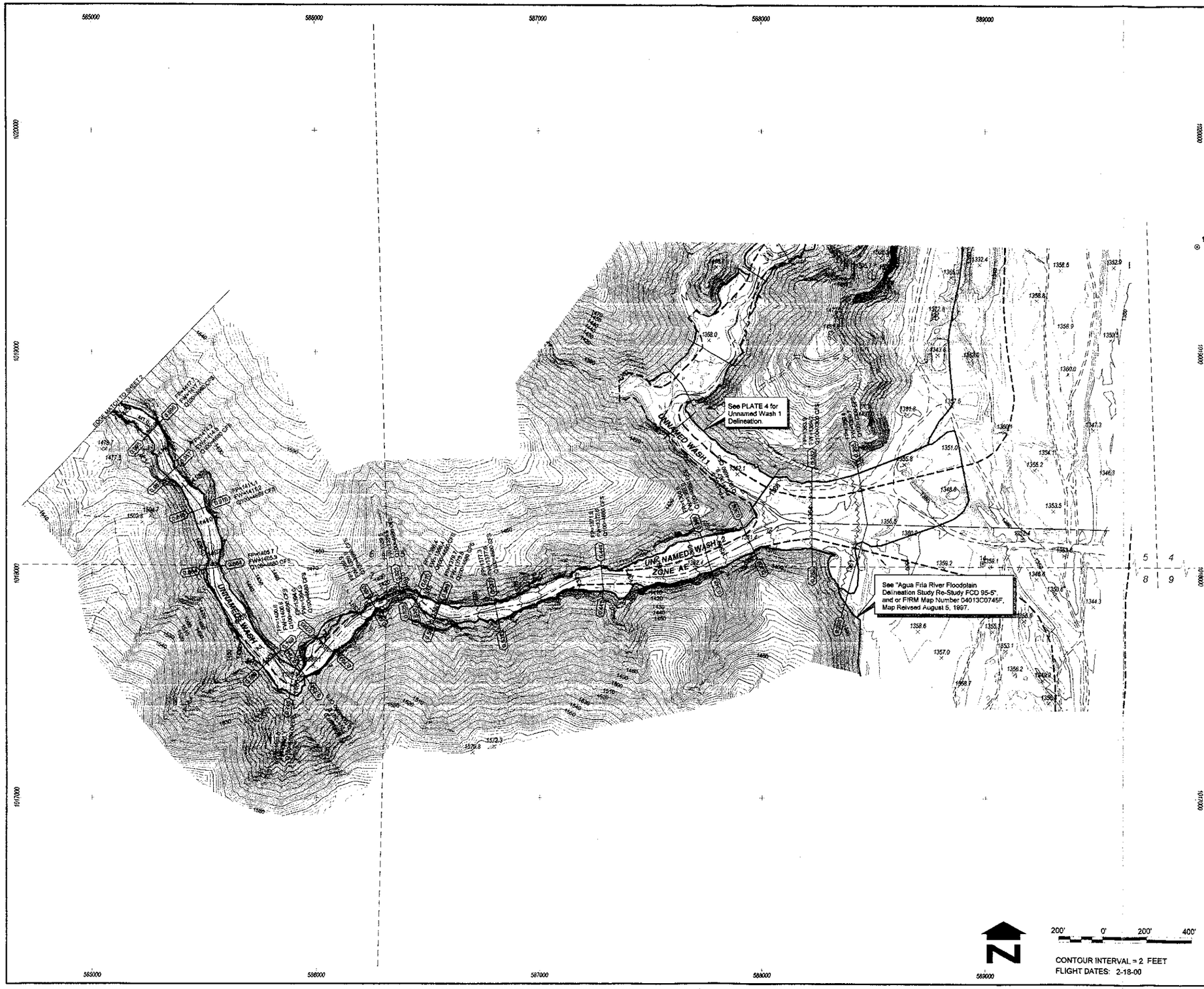
PLANS	NKD	04/01
PLANS CHK.	PJE	04/01

PLATE 4 SHEET 6 OF 6



LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 M13.0
CROSS SECTION	0.100 FP= 1888.74 FW= 1889.54 Q100 = CFS
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
CORPORATE LIMITS	Corporate Limits
COUNTY, PARISH, STATE OR INTERNATIONAL BOUNDARY	County Boundary
SECTION LINES	

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

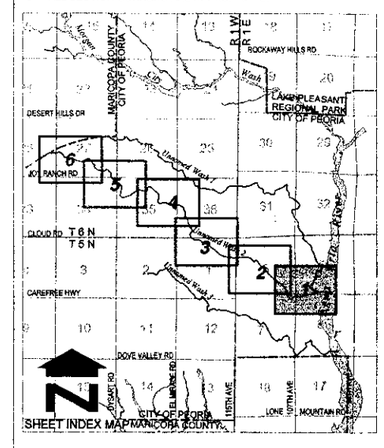
I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
14	1356.700	DEPT. OF INTERIOR ALUM. CAP, 1/4 CORNER SECTIONS 5 & 8 T5N, R1E N: 1018052.383 E: 589126.608
12	1440.688	CHISLED "+" ON STRUCTURE, VALCO TBM 65 - NORTHEAST CORNER OF CONCRETE BARRIER ON BRIDGE OVER BEARDSLEY CANAL +-1.8 MILES WEST OF LAKE PLEASANT ROAD AND WEST CAREFREE HIGHWAY. N: 1019482.853 E: 593588.029

NOTES

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

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET. NGVD 1929 ELEVATIONS WERE DERIVED BY SUBTRACTING THE PUBLISHED DIFFERENCE OF 2.07 FEET AT BM S-366 FROM THE ADJUSTED NAVD 1996 VALUES.

3- ALL SECTION CORNERS ARE APPROXIMATE.



NO.	REVISION	BY	DATE
3			
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP UNNAMED WASH 2 F.C.D. CONTRACT NO. 99-45

Registered Professional Engineer (Civil) CERTIFICATE NO. 35150 R. MICHAEL C. GERLACH Date Signed 6-4-01 ARIZONA U.S.A.

Stantec Consulting Inc.
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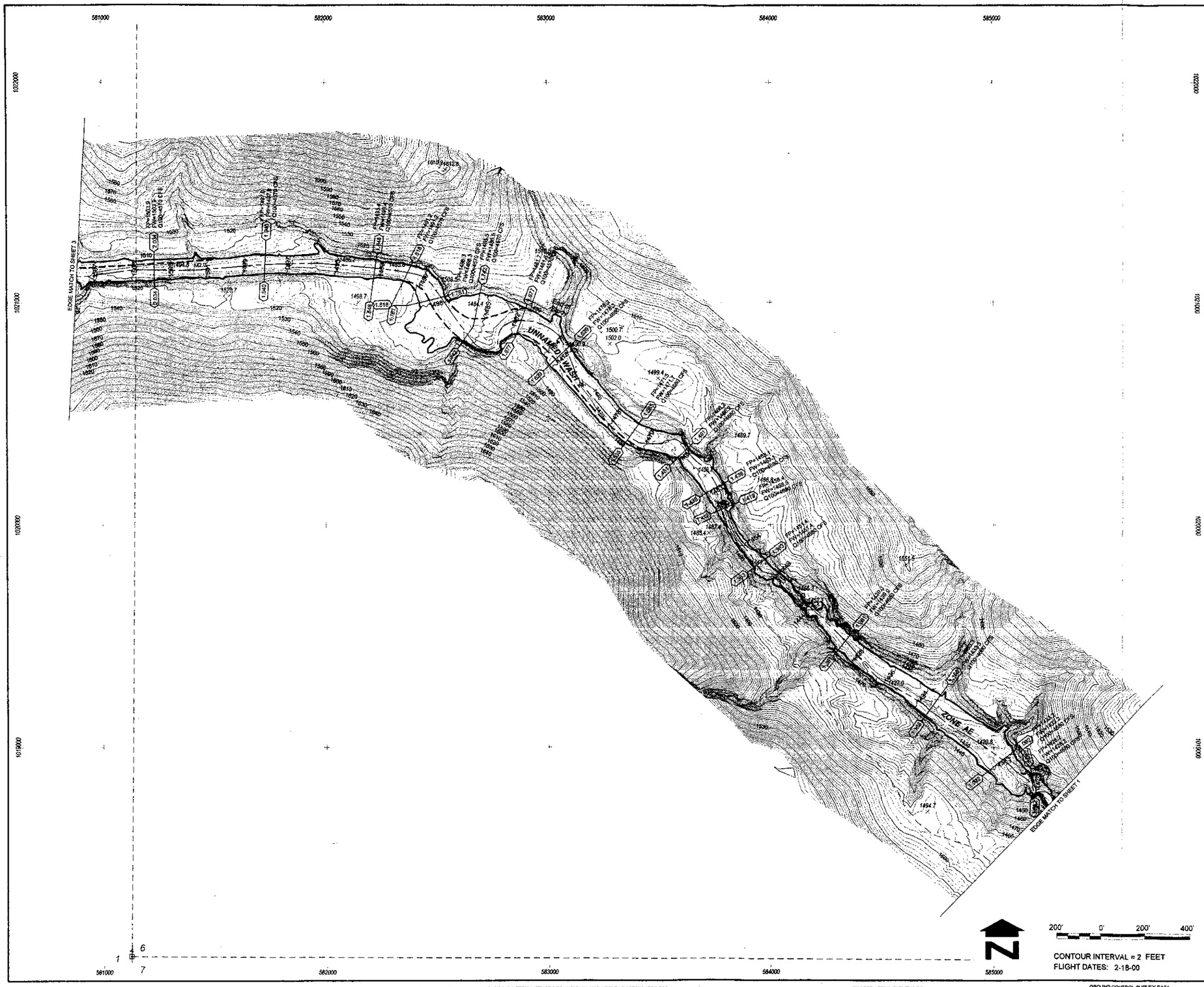
PLANS	NKD	04/01
PLANS CHK	PJE	04/01

PLATE 5 SHEET 1 OF 8

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

COOPER AERIAL SURVEYS CO.

GROUND CONTROL SURVEY DATA PROVIDED BY VALCO SURVEYING CORP.



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

COOPER AERIAL SURVEYS CO.

GROUND CONTROL SURVEY DATA PROVIDED BY VALCO SURVEYING CORP.

LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 M13.0
CROSS SECTION	0.100 FP= 1888.74 FW= 1889.54 Q100 = CFS
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
CORPORATE LIMITS	Corporate Limits
COUNTY, PARISH, STATE OR INTERNATIONAL BOUNDARY	County Boundary
SECTION LINES	

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

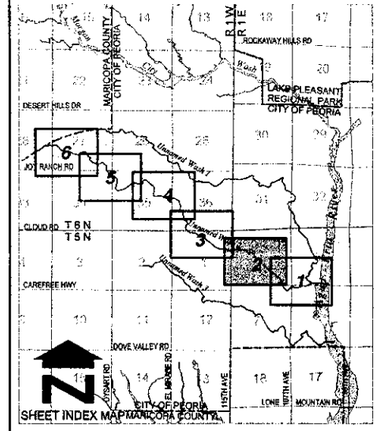
I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
4	1744.668	GLO BRASS CAP SECTION CORNER, SECTIONS 1, 6, 7, T5N, R1W & R1E N: 1018061.909 E: 581123.399

NOTES

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

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET. NGVD 1929 ELEVATIONS WERE DERIVED BY SUBTRACTING THE PUBLISHED DIFFERENCE OF 2.07 FEET AT BM S-366 FROM THE ADJUSTED NAVD 1998 VALUES.

3- ALL SECTION LINES ARE APPROXIMATE.



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP UNNAMED WASH 2 F.C.D. CONTRACT NO. 99-45

Stantec Consulting Inc.
8211 South 48th Street
Phoenix, AZ 85044-5366 U.S.A.
Tel.: (602) 436-2200
Fax: (602) 431-9562
www.stantec.com

R. MICHAEL C. GERLACH 35150 ARIZONA U.S.A.

	BY	DATE
DESIGN	MCG	04/01
DESIGN CHK.	PJE	04/01
PLANS	NKD	04/01
PLANS CHK.	PJE	04/01

PLATE 5 SHEET 2 OF 8

LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 — M13.0
CROSS SECTION	0.100 — FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION); FW= 1889.54 (FLOODWAY WATER SURFACE ELEVATION); Q100 = CFS (100 YEAR DISCHARGE); CROSS SECTION NUMBER OR DESIGNATION
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
CORPORATE LIMITS	Corporate Limits
COUNTY, PARISH, STATE OR INTERNATIONAL BOUNDARY	County Boundary
SECTION LINES	

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

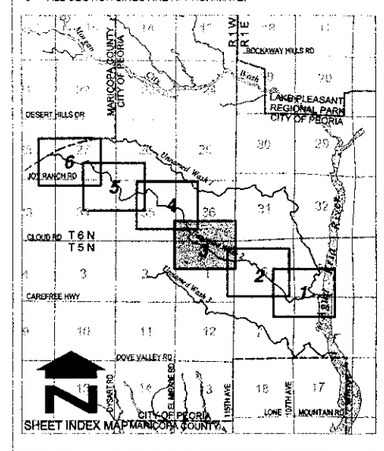
I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
6	1743.227	GLO BRASS CAP SECTION CORNER, SECTIONS 31, 36, 1, 6 T5N, T6N, R1E, R1W N: 1022840.322 E: 581157.608
8	1713.615	GLO BRASS CAP SECTION CORNER, SECTIONS 35, 36, 1, 2 T5N,T6N, R1W N: 1022868.043 E: 575881.369

NOTES

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

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET. NGVD 1929 ELEVATIONS WERE DERIVED BY SUBTRACTING THE PUBLISHED DIFFERENCE OF 2.07 FEET AT BM S-366 FROM THE ADJUSTED NAVD 1988 VALUES.

3- ALL SECTION LINES ARE APPROXIMATE.



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP UNNAMED WASH 2 F.C.D. CONTRACT NO. 99-45

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8211 South 48th Street
Phoenix, Az 85044-5355 U.S.A.
Tel.: (602) 438-2200
Fax: (602) 431-9562
www.stantec.com

Professional Engineer (Civil) CERTIFICATE NO. 35150 R. MICHAEL C. GERLACH Date Signed 9-8-00 ARIZONA U.S.A.

	BY	DATE
DESIGN	MCG	04/01
DESIGN CHK.	PJE	04/01
PLANS	NKD	04/01
PLANS CHK.	PJE	04/01

PLATE 5 SHEET 3 OF 6

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

COOPER AERIAL SURVEYS CO.

GROUND CONTROL SURVEY DATA PROVIDED BY VALCO SURVEYING CORP.

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

COOPER AERIAL SURVEYS CO.

GROUND CONTROL SURVEY DATA PROVIDED BY VALCO SURVEYING CORP.

LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 M13.0
CROSS SECTION	0.100 — FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION); FW= 1889.54 (FLOODWAY WATER SURFACE ELEVATION); Q100 = CFS (100-YEAR DISCHARGE) (CROSS SECTION RIVER MILE INFORMATION)
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
CORPORATE LIMITS	Corporate Limits
COUNTY, PARISH, STATE OR INTERNATIONAL BOUNDARY	County Boundary
SECTION LINES	

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

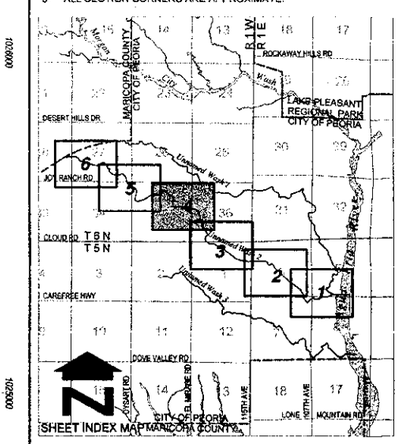
I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION

NOTES

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

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET. NGVD 1929 ELEVATIONS WERE DERIVED BY SUBTRACTING THE PUBLISHED DIFFERENCE OF 2.07 FEET AT BM S-366 FROM THE ADJUSTED NAVD 1998 VALUES.

3- ALL SECTION CORNERS ARE APPROXIMATE.



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP UNNAMED WASH 2 F.C.D. CONTRACT NO. 99-45

35150
R. MICHAEL C. GERLACH
ARIZONA U.S.A.

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8211 South 48th Street
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	BY	DATE
DESIGN	MCG	04/01
DESIGN CHK	PJE	04/01
PLANS	NKD	04/01
PLANS CHK	PJE	04/01

PLATE 5 SHEET 4 OF 9

LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 M13.0
CROSS SECTION	0.100 — FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION); FW= 1889.54 (FLOODWAY WATER SURFACE ELEVATION); Q100 = CFS (100-YEAR DISCHARGE); CROSS SECTION DESIGNATION; DISTANCE UPSTREAM OF RIVER MILE
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
CORPORATE LIMITS	Corporate Limits
COUNTY, PARISH, STATE OR INTERNATIONAL BOUNDARY	County Boundary
SECTION LINES	

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

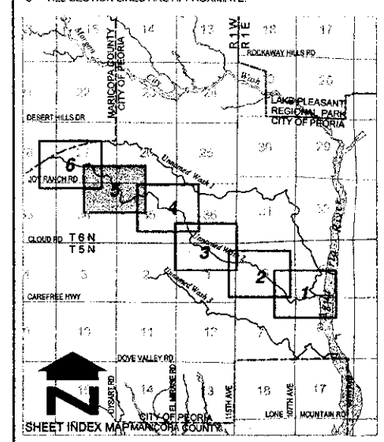
I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION

NOTES

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

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET. NGVD 1929 ELEVATIONS WERE DERIVED BY SUBTRACTING THE PUBLISHED DIFFERENCE OF 2.07 FEET AT BM S-366 FROM THE ADJUSTED NAVD 1998 VALUES.

3- ALL SECTION LINES ARE APPROXIMATE.



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP UNNAMED WASH 2 F.C.D. CONTRACT NO. 99-45

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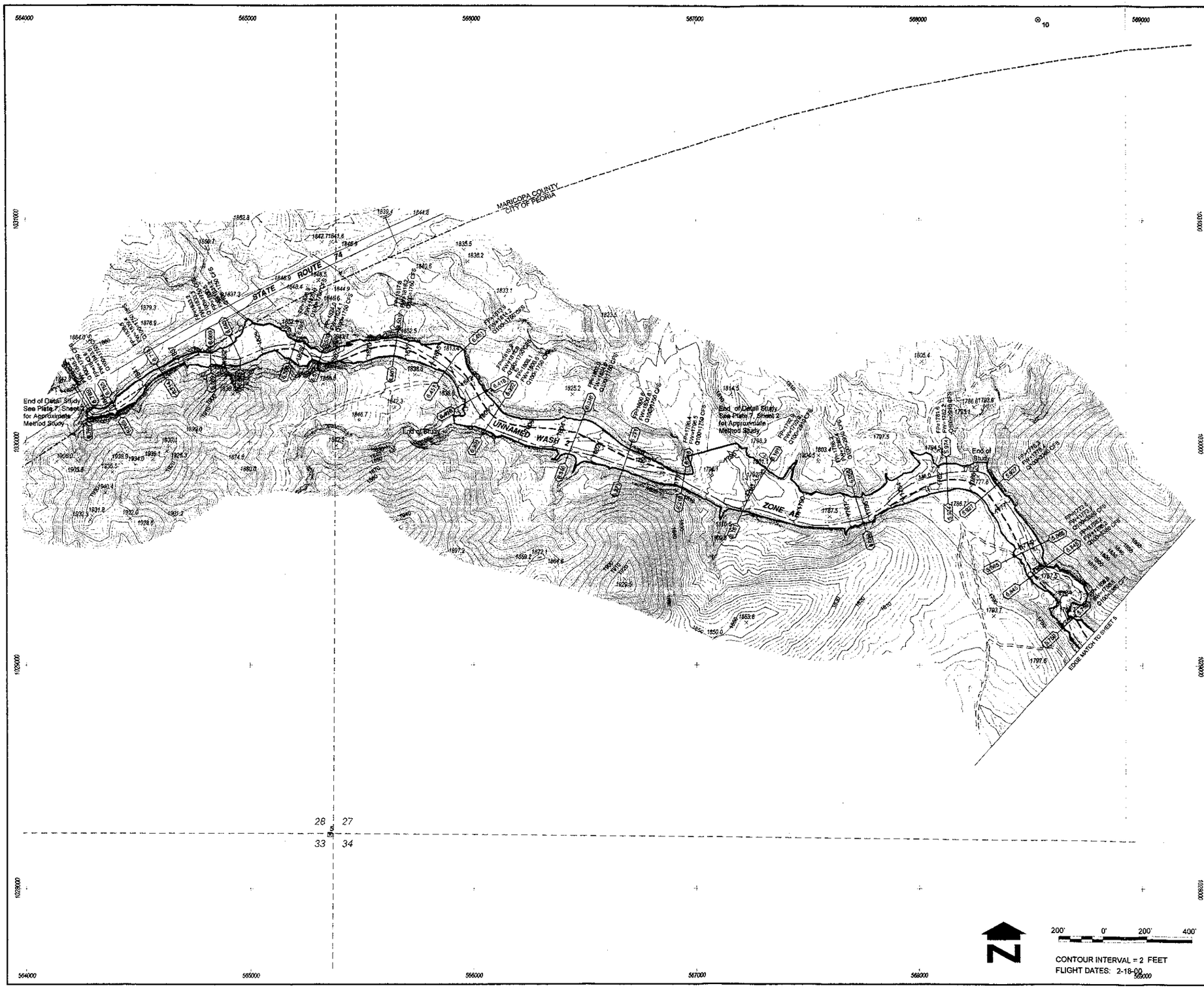
	BY	DATE
DESIGN	MCG	04/01
DESIGN CHK.	PJE	04/01
PLANS	NKD	04/01
PLANS CHK.	PJE	04/01

PLATE 5 SHEET 5 OF 6

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

COOPER AERIAL SURVEYS CO.

GROUND CONTROL SURVEY DATA PROVIDED BY VALCO SURVEYING CORP.



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

COOPER AERIAL SURVEYS CO.

GROUND CONTROL SURVEY DATA PROVIDED BY VALCO SURVEYING CORP

LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 — M13.0
CROSS SECTION	0.100 — FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION); FW= 1889.54 (FLOODWAY WATER SURFACE ELEVATION); Q100 = . CFS (100 YEAR DISCHARGE); CROSS SECTION RIVER MILE DESIGNATION
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
CORPORATE LIMITS	Corporate Limits
COUNTY, PARISH, STATE OR INTERNATIONAL BOUNDARY	County Boundary
SECTION LINES	

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929

I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
10 ⊙	1856.402	ADOT DISK STAMPED "CUT" IN 10" CONC. MONUMENT, CUT- IN NORTH R/W SR74, 5 MI WSW OF LAKE PLEASANT AT MILEPOST 18.99. THE MARK IS 3.5 FEET SOUTH OF THE NORTH R/W FENCE ON TOP OF A 15 FOOT CUTBANK. N: 1031888.332 E: 568538.274
5 ⊡	1868.563	GLO BRASS CAP. SECTION CORNER SECTIONS 27, 28, 33, 34, T6N, R1W N: 1029211.900 E: 565351.762

NOTES

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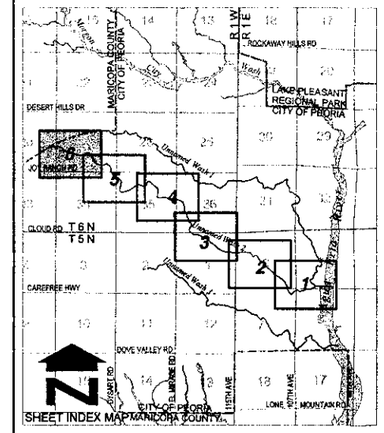
3- ALL SECTION LINES ARE APPROXIMATE.



SHEET INDEX MAP

NO	REVISION	BY	DATE

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

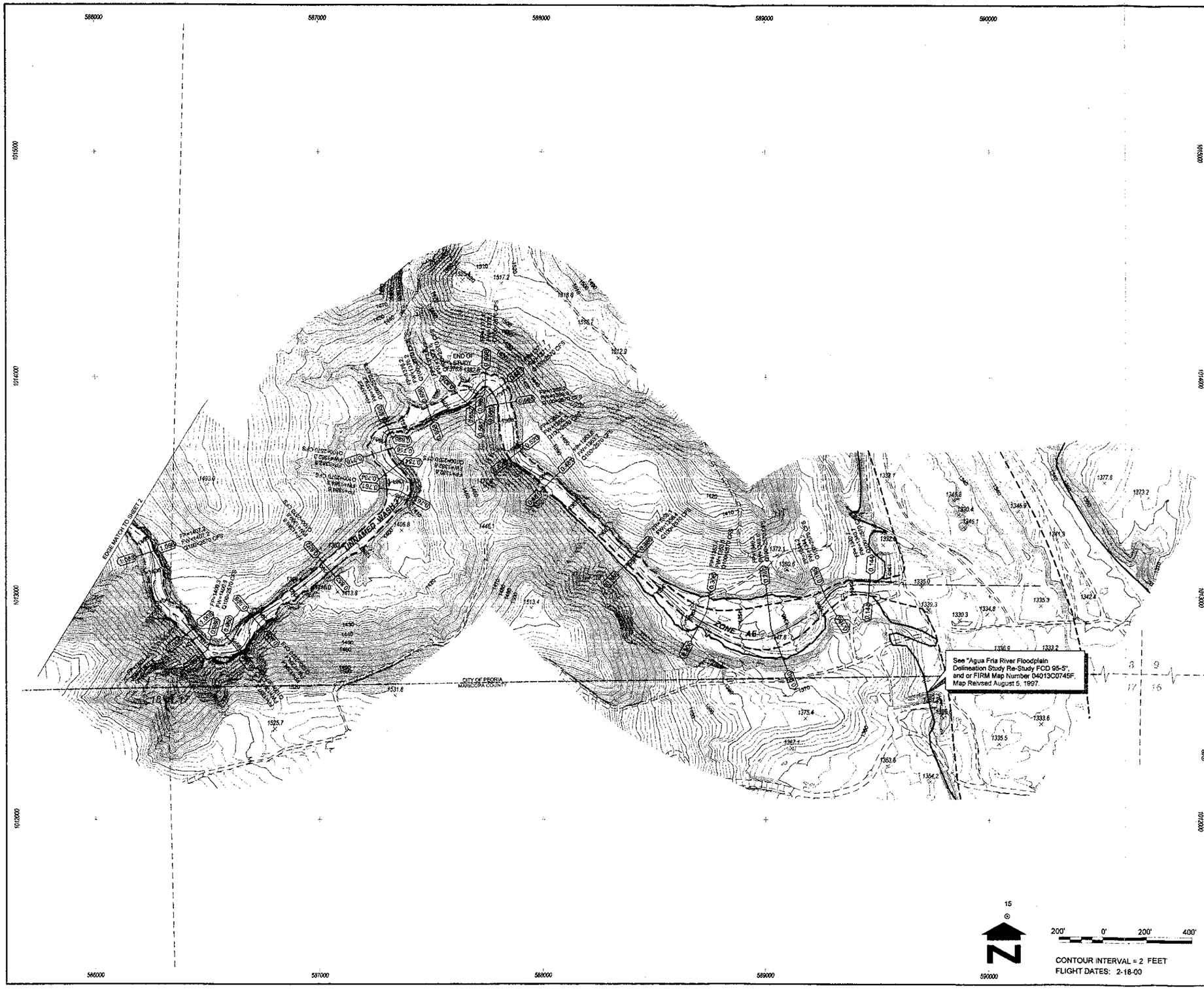
NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP UNNAMED WASH 2 F.C.D. CONTRACT NO. 99-45

REGISTERED PROFESSIONAL ENGINEER (CIVIL) CERTIFICATE NO. 35150 R. MICHAEL C. GERLACH ARIZONA U.S.A.

Stantec
Stantec Consulting Inc
8211 South 48th Street
Phoenix, Az 85044-5355 U.S.A.
Tel.: (602) 438-2200
Fax: (602) 431-9462
www.stantec.com

	BY	DATE
DESIGN	MCG	04/01
DESIGN CHK	PJE	04/01
PLANS	NKD	04/01
PLANS CHK	PJE	04/01

PLATE 8 SHEET 6 OF 6



LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 — M13.0
CROSS SECTION	0.100 — FP= 1888.74 (FLOODPLAIN WATER SURFACE ELEVATION); FW= 1889.54 (BOUNDARY WATER SURFACE ELEVATION); Q100 = . CFS (100 YEAR DISCHARGE); CROSS SECTION RIVER MILE DESIGNATION
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
CORPORATE LIMITS	Corporate Limits
COUNTY, PARISH, STATE OR INTERNATIONAL BOUNDARY	County Boundary
SECTION LINES	

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

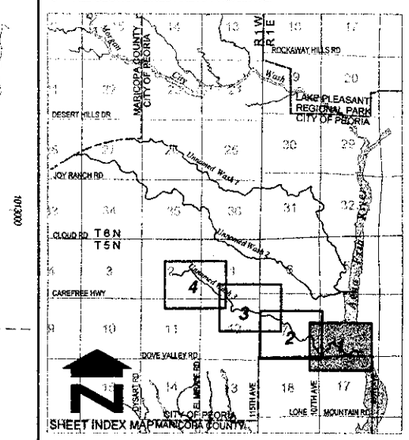
I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
15 ⊙	1353.720	+" TOP BOLT IN SW CORNER CONCRETE ABUTTMENT AT WEST END OF FLUME, WEST END BEARDSLEY CANAL FLUME CROSSING AGUA FRIA RIVER N: 1011568.327 E: 590082.699
9 ⊙	1434.830	CHISLED "+" NW COR. CONC. HEADWALL, CHUTE - SOUTH OF BEARDSLEY CANAL AND NORTH OF CAP SERVICE ROAD. +- 1.0 MILES WEST OF LAKE PLEASANT ROAD AND CAP BRIDGE. N: 1012280.199 E: 594087.160

NOTES

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

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET. NGVD 1929 ELEVATIONS WERE DERIVED BY SUBTRACTING THE PUBLISHED DIFFERENCE OF 2.07 FEET AT BM S-366 FROM THE ADJUSTED NAVD 1988 VALUES.

3- ALL SECTION LINES ARE APPROXIMATE.



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP UNNAMED WASH 3 F.C.D. CONTRACT NO. 99-45

Stantec Consulting Inc.
5211 South 48th Street
Phoenix, Az 85044-5355 U.S.A.
Tel.: (602) 438-2200
Fax: (602) 431-9562
www.stantec.com

	BY	DATE
DESIGN	MCG	04/01
DESIGN CHK.	PJE	04/01
PLANS	NKD	04/01
PLANS CHK.	PJE	04/01

PLATE 6 SHEET 1 OF 4

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

COOPER AERIAL SURVEYS CO.

GROUND CONTROL SURVEY DATA PROVIDED BY VALCO SURVEYING CORP.

LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 M13.0
CROSS SECTION	0.100 FP= 1888.74 FW= 1889.54 Q100 = CFS
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
CORPORATE LIMITS	Corporate Limits
COUNTY, PARISH, STATE OR INTERNATIONAL BOUNDARY	County Boundary
SECTION LINES	

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

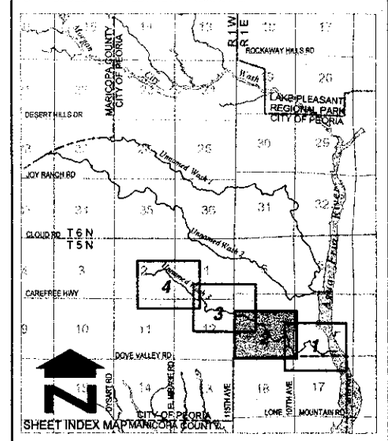
I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION

NOTES

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

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET. NGVD 1929 ELEVATIONS WERE DERIVED BY SUBTRACTING THE PUBLISHED DIFFERENCE OF 2.07 FEET AT BM S-366 FROM THE ADJUSTED NAVD 1988 VALUES.

3- ALL SECTION LINES ARE APPROXIMATE.



NO.	REVISION	BY	DATE

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP UNNAMED WASH 3 F.C.D. CONTRACT NO. 99-45

Stantec Consulting Inc.
6211 South 48th Street
Phoenix, Az 85044-5355 U.S.A.
Tel.: (602) 438-2200
Fax: (602) 431-9652
www.stantec.com

Registered Professional Engineer (Civil) 35150 R. MICHAEL C GERLACH Date Signed 2-11-01 ARIZONA U.S.A.

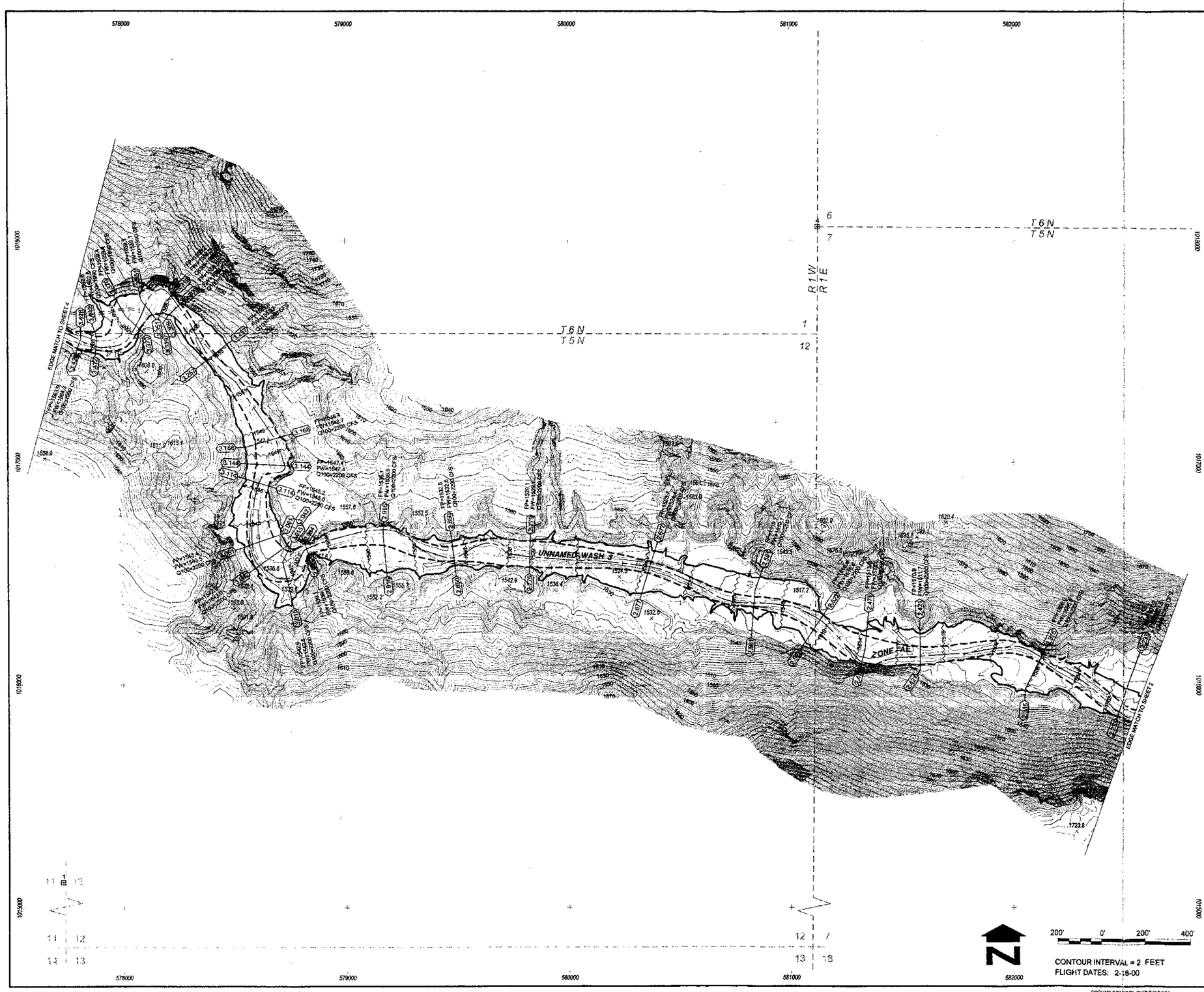
	BY	DATE
DESIGN	MCG	04/01
DESIGN CHK.	PJE	04/01
PLANS	NKD	04/01
PLANS CHK.	PJE	04/01

PLATE 8 SHEET 2 OF 4

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

COOPER AERIAL SURVEYS CO.

GROUND CONTROL SURVEY DATA PROVIDED BY VALCO SURVEYING CORP.



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COOPER AERIAL SURVEYS CO.

GROUND CONTROL SURVEY DATA PROVIDED BY: VALCO SURVEYING CORP.

LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 — M13.0
CROSS SECTION	0.100 — FP= 1888.74 / FW= 1889.54 / Q100 = CFS
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
CORPORATE LIMITS	Corporate Limits
COUNTY, PARISH, STATE OR INTERNATIONAL BOUNDARY	County Boundary
SECTION LINES	

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

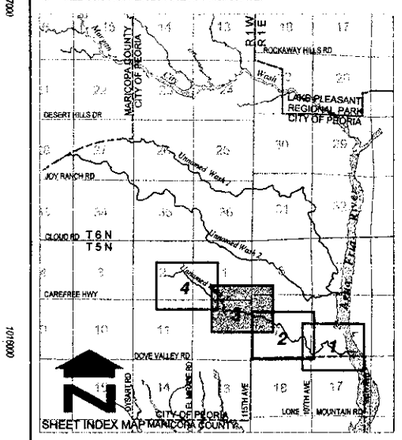
I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
4	1744.668	GLO BRASS CAP SECTION CORNER, SECTIONS 1, 6, 7, T5N, R1W & R1E N: 1018061.909 E: 581123.399
1	1611.931	GLO BRASS CAP 1/4 CORNER, SECTIONS 11 & 12 T5N, R1W N: 1014953.756 E: 575853.309

NOTES

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

2- COORDINATES ARE IN NAD 1983 HORIZONTAL AND NGVD 1929 VERTICAL. COORDINATES ARE GRID AND IN INTERNATIONAL FEET. NGVD 1929 ELEVATIONS WERE DERIVED BY SUBTRACTING THE PUBLISHED DIFFERENCE OF 2.07 FEET AT BM S-368 FROM THE ADJUSTED NAVD 1998 VALUES

3- ALL SECTION LINES ARE APPROXIMATE.



NO	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP UNNAMED WASH 3 F.C.D. CONTRACT NO. 99-45

REGISTERED PROFESSIONAL ENGINEER (CIVIL) CERTIFICATE NO. 35150 MICHAEL C. GERLACH ARIZONA U.S.A.

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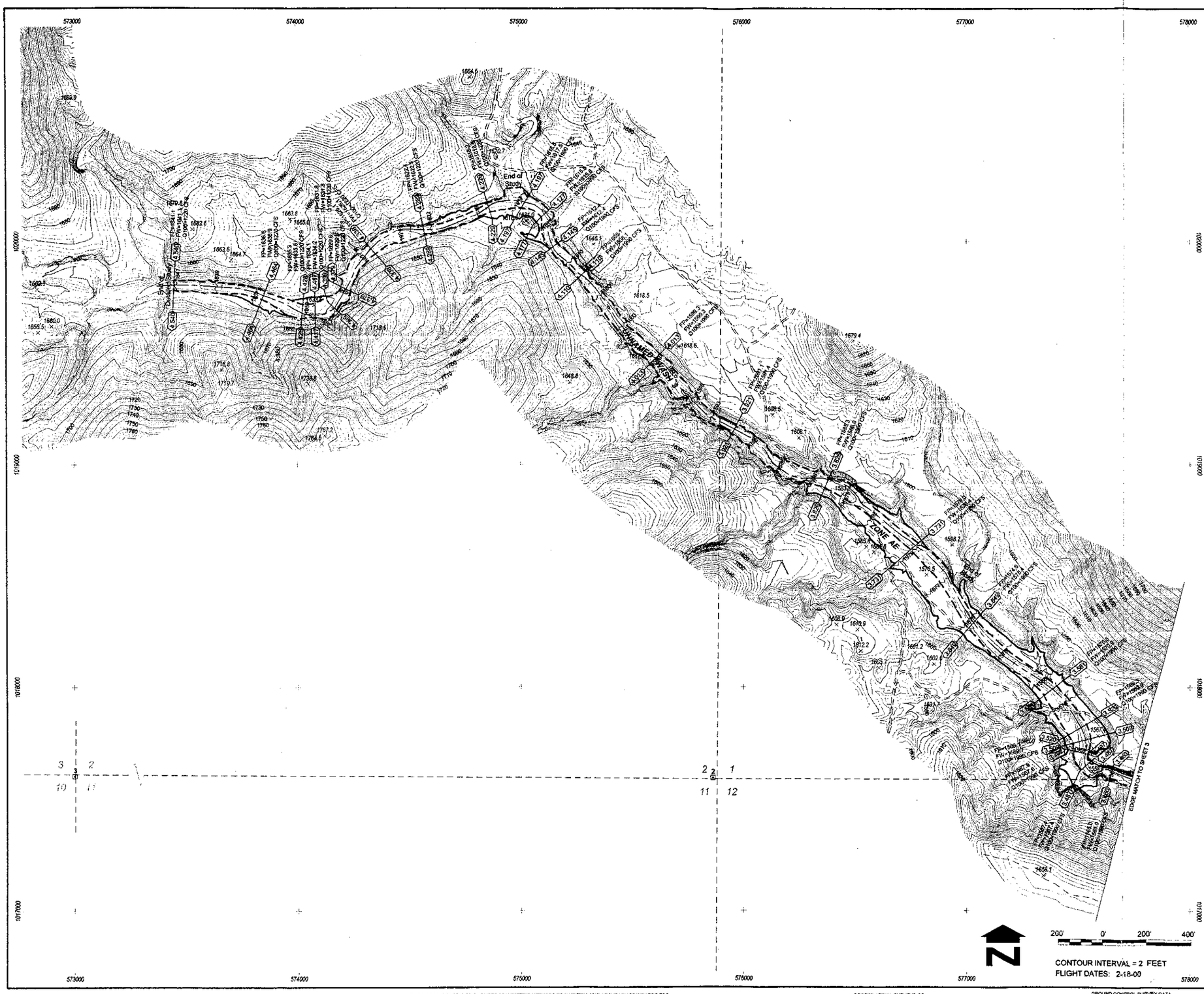
PLATE 6 SHEET 3 OF 4



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

COOPER AERIAL SURVEYS CO.

GROUND CONTROL SURVEY DATA PROVIDED BY: VALCO SURVEYING CORP.

LEGEND

100-YR FLOODPLAIN BOUNDARY	
FLOODWAY BOUNDARY	
HYDRAULIC BASE LINE WITH RIVER MILE	M12.0 M13.0
CROSS SECTION	0.100 FP= 1888.74 FW= 1889.54 Q100 = CFS
ELEVATION REFERENCE MARK	ERM XXX
BASE FLOOD ELEVATIONS	1221
ZONE DESIGNATIONS	ZONE AE
CORPORATE LIMITS	Corporate Limits
COUNTY, PARISH, STATE OR INTERNATIONAL BOUNDARY	County Boundary
SECTION LINES	

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929

I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
2	1624.244	GLO BRASS CAP SECTION CORNER, SECTIONS 1, 2, 11, 12 T5N, R1W N: 1017591.572 E: 575862.942
3	1646.762	GLO BRASS CAP SECTION CORNER, SECTIONS 2, 3, 10, 11 T5N, R1W N: 1017617.764 E: 570584.939

NOTES

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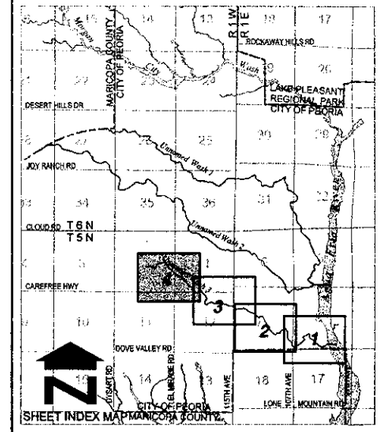
3- ALL SECTION LINES ARE APPROXIMATE.



NO.	REVISION	BY	DATE

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

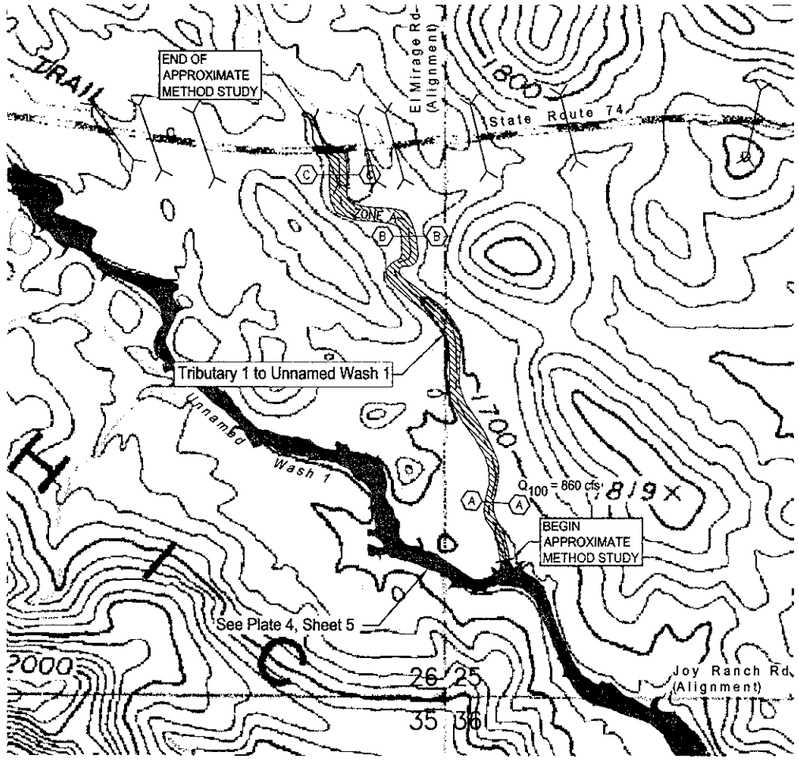
NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODWAY AND FLOODPLAIN MAP UNNAMED WASH 3 F.C.D. CONTRACT NO. 99-45

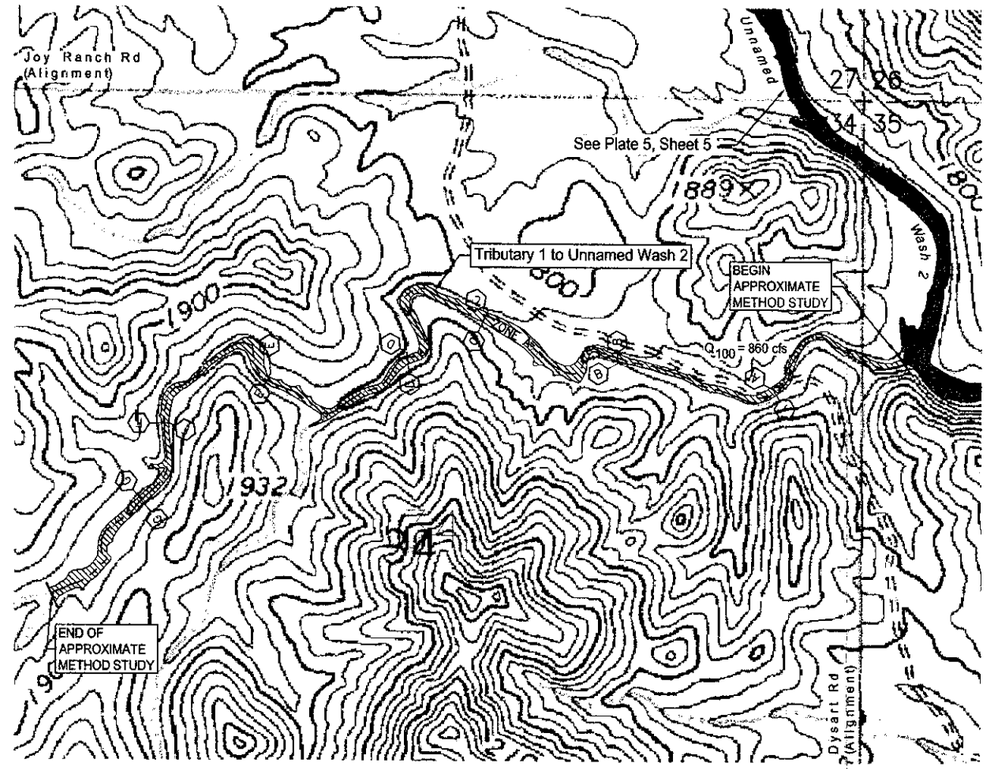
REGISTERED PROFESSIONAL ENGINEER (CIVIL) CERTIFICATE NO. 35150 MICHAEL C. GERLACH ARIZONA U.S.A.

Stantec Consulting Inc.
8211 South 48th Street
Phoenix, Az 85044-5355 U.S.A.
Tel.: (602) 438-2200
Fax: (602) 431-9562
www.stantec.com

	BY	DATE
DESIGN	MCG	04/01
DESIGN CHK	PJE	04/01
PLANS	NKD	04/01
PLANS CHK	PJE	04/01

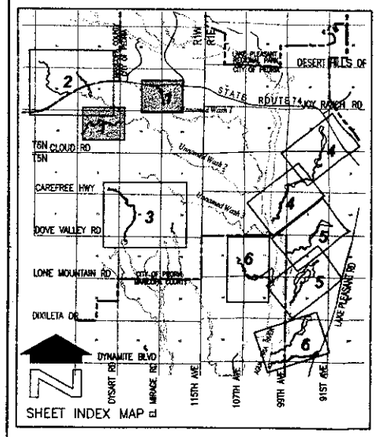
PLATE 8 SHEET 4 OF 4





LEGEND

SPECIAL FLOOD HAZARD AREA, ZONE A	
DETAILED STUDY FLOOD HAZARD AREA, ZONE AE	
END OF STUDY	EOS
CROSS SECTION LOCATION AND IDENTIFIER	A — A
100-YEAR PEAK DISCHARGE	Q_{100} = 860 cfs
HYDRAULIC BASE LINE	
CULVERT	
CORPORATE LIMITS	



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODPLAIN WORK MAP APPROXIMATE METHOD REACHES F.C.D. CONTRACT NO. 99-45

Stantec Consulting Inc.
8211 South 48th Street
Phoenix AZ 85044-5355 U.S.A.
Tel. 602 438 2200
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H. MICHAEL C. GERLACH

	BY	DATE
DESIGN	MMZ	12.15.00
DESIGN CHK.	MCG	01.25.01
PLANS	HAR	12.15.00
PLANS CHK.	MMZ	01.25.01

PLATE 7

SHEET 1 OF 6

400' 0' 400' 800'

CONTOUR INTERVAL = 20 FEET

PORTION OF USGS QUADRANGLE BALDY MOUNTAIN

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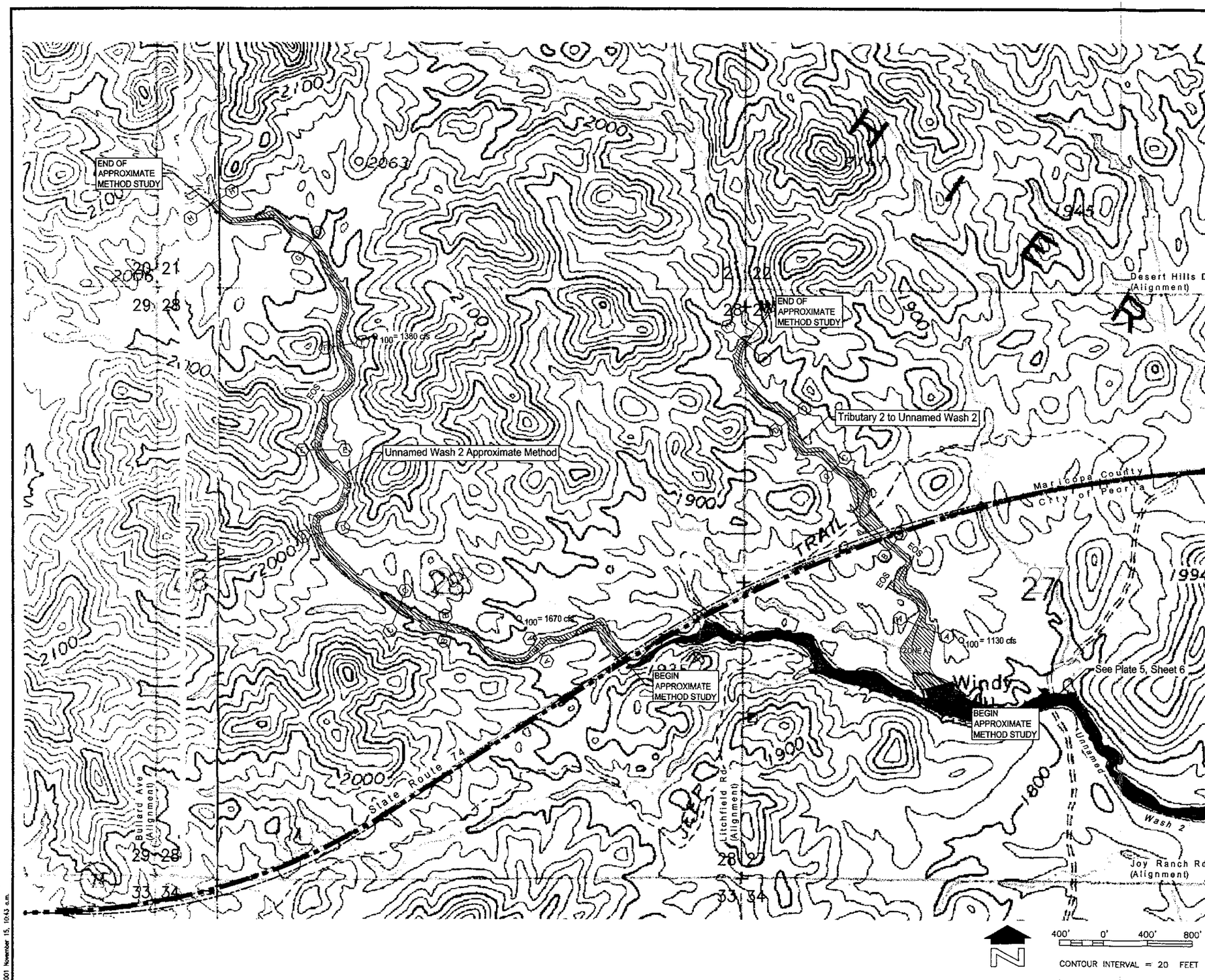
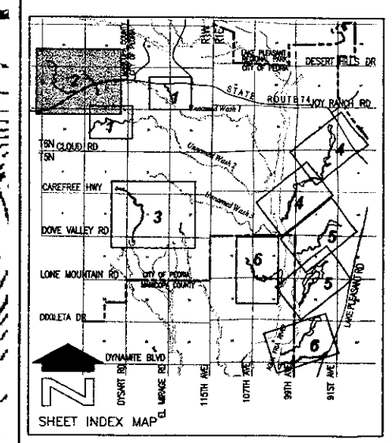
2001 November 15, 10:25 a.m.



PORTION OF USGS QUADRANGLE BALDY MOUNTAIN

LEGEND

SPECIAL FLOOD HAZARD AREA, ZONE A	
DETAILED STUDY FLOOD HAZARD AREA, ZONE AE	
END OF STUDY	EOS
CROSS SECTION LOCATION AND IDENTIFIER	A — A
100-YEAR PEAK DISCHARGE	Q_{100} = 860 cfs
HYDRAULIC BASE LINE	
CULVERT	
CORPORATE LIMITS	



NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODPLAIN WORK MAP APPROXIMATE METHOD REACHES F.C.D. CONTRACT NO. 99-45

Stantec Consulting Inc.
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Phoenix, AZ 85044-5355 U.S.A.
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REGISTERED PROFESSIONAL ENGINEER (CIVIL) MICHAEL C. GERLACH No. 19160 ARIZONA U.S.A.

	BY	DATE
DESIGN	MMZ	12.15.00
DESIGN CHK.	MCG	01.25.01
PLANS	HAR	12.15.00
PLANS CHK.	MMZ	01.12.01

PLATE 7

SHEET 2 OF 6

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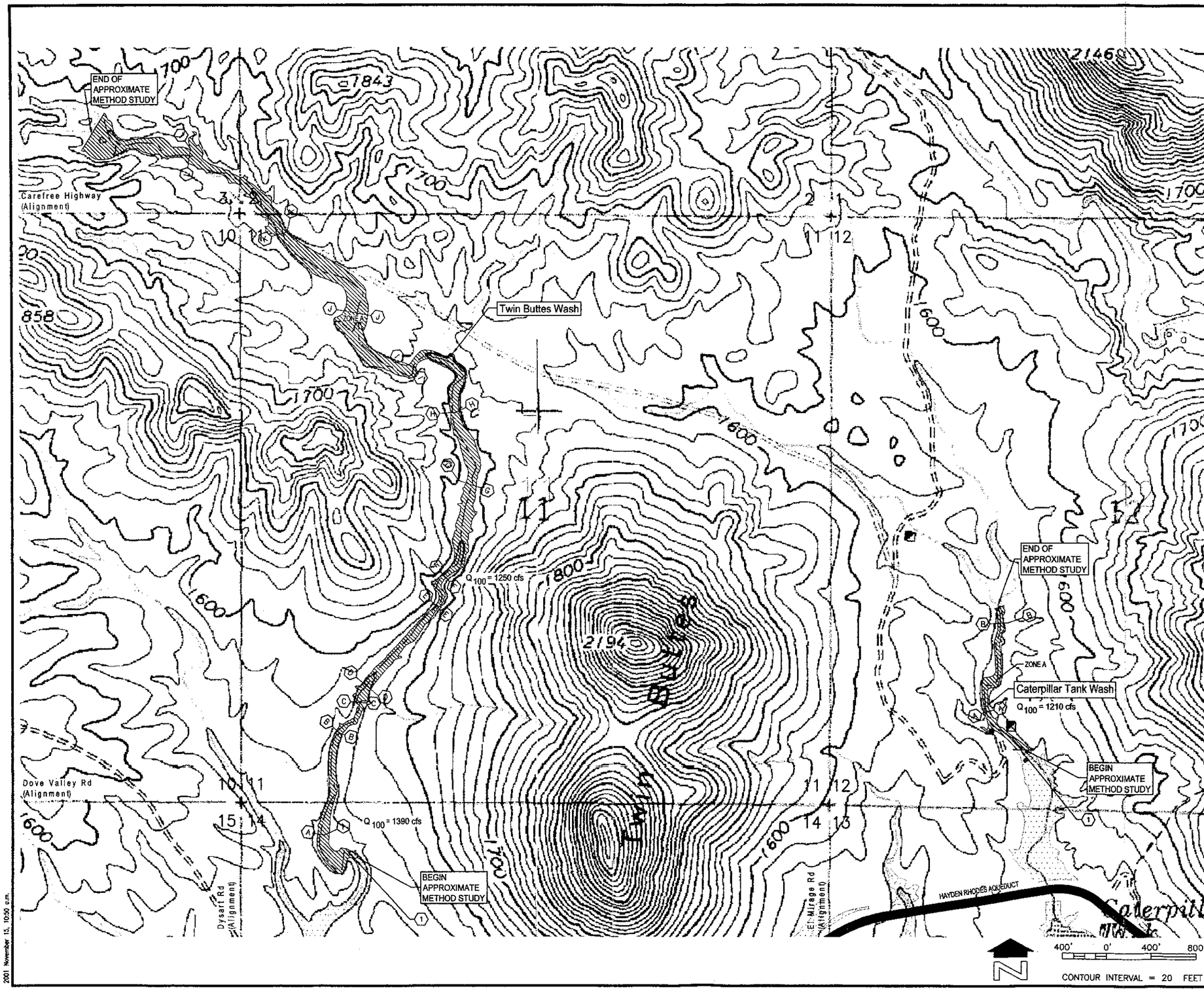

PORTION OF USGS QUADRANGLE BALDY MOUNTAIN

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LEGEND

SPECIAL FLOOD HAZARD AREA, ZONE A	
EFFECTIVE SPECIAL FLOOD HAZARD AREA, ZONE AE	
END OF STUDY	EOS
CROSS SECTION LOCATION AND IDENTIFIER	A — A
100-YEAR PEAK DISCHARGE	Q_{100} = 860 cfs
HYDRAULIC BASE LINE	
CULVERT	
CORPORATE LIMITS	

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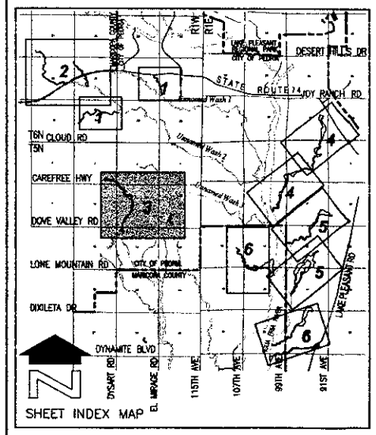

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODPLAIN WORK MAP APPROXIMATE METHOD REACHES F.C.D. CONTRACT NO. 99-45

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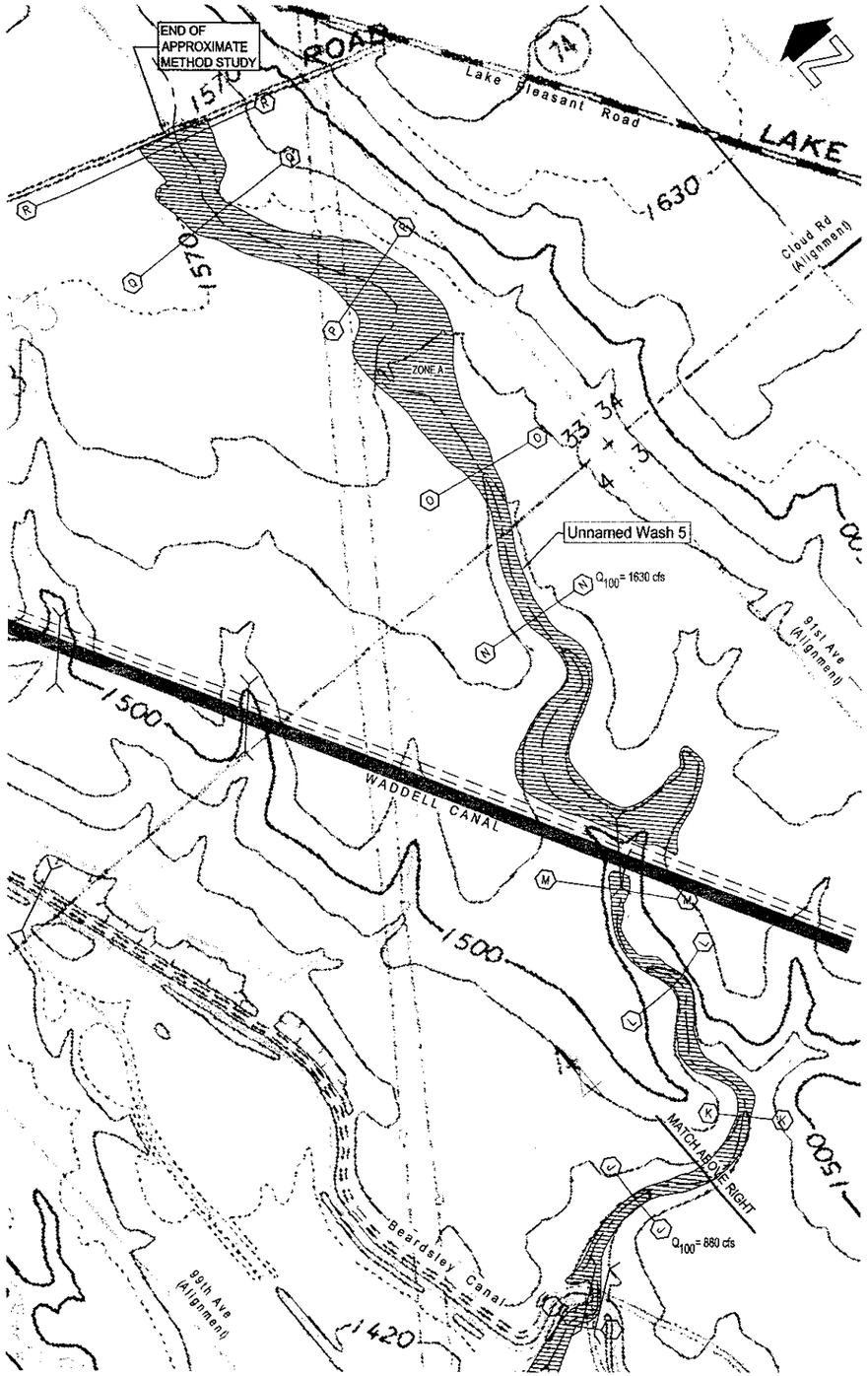
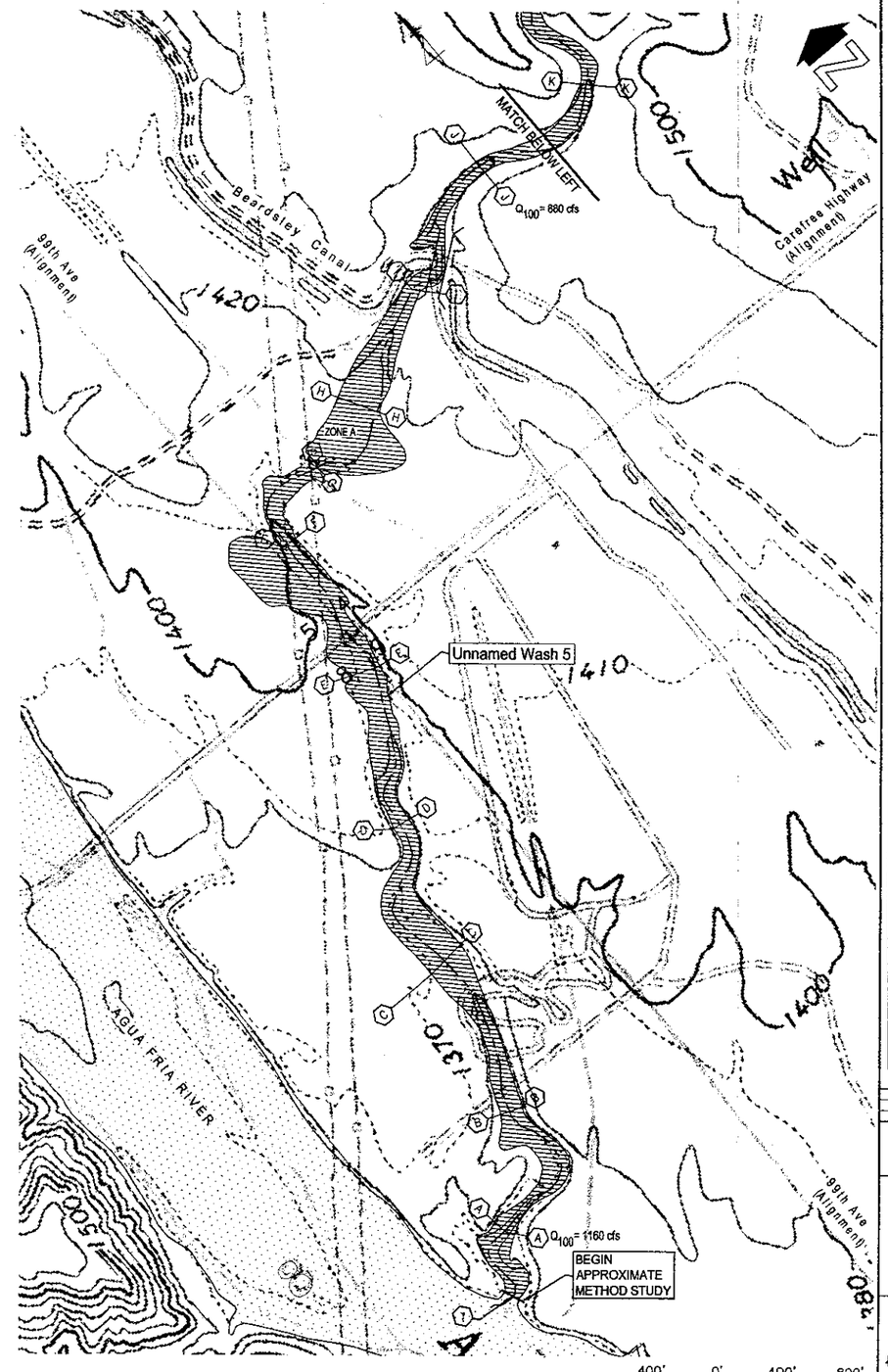
Registered Professional Engineer (Civil) CERTIFICATE NO. 35156 R. MICHAEL C. GERLACH ARIZONA U.S.A.

	BY	DATE
DESIGN	MMZ	12.15.00
DESIGN CHK.	MCG	01.25.01
PLANS	HAR	12.15.00
PLANS CHK.	MMZ	01.12.01

PLATE 7

SHEET 3 OF 6





CONTOUR INTERVAL = 20 FEET

LEGEND

SPECIAL FLOOD HAZARD AREA, ZONE A	
EFFECTIVE SPECIAL FLOOD HAZARD AREA, ZONE AE	
END OF STUDY	EOS
CROSS SECTION LOCATION AND IDENTIFIER	A — A
100-YEAR PEAK DISCHARGE	Q_{100}= 860 cfs
HYDRAULIC BASE LINE	
CULVERT	
CORPORATE LIMITS	

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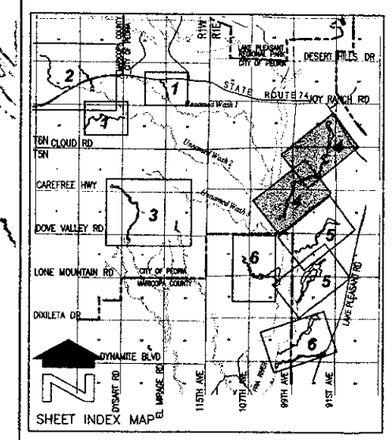

NO.	REVISION	BY	DATE
2			
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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODPLAIN WORK MAP APPROXIMATE METHOD REACHES F.C.D. CONTRACT NO. 99-45

Stantec Consulting Inc.
3211 South 48th Street
Phoenix AZ 85044-5305 U.S.A.
Tel 602.438.2000
Fax 602.431.9562
www.stantec.com

	BY	DATE
DESIGN	MMZ	12.15.00
DESIGN CHK.	MCG	01.25.01
PLANS	HAR	12.15.00
PLANS CHK.	MMZ	01.12.01

PLATE 7

SHEET 4 OF 5

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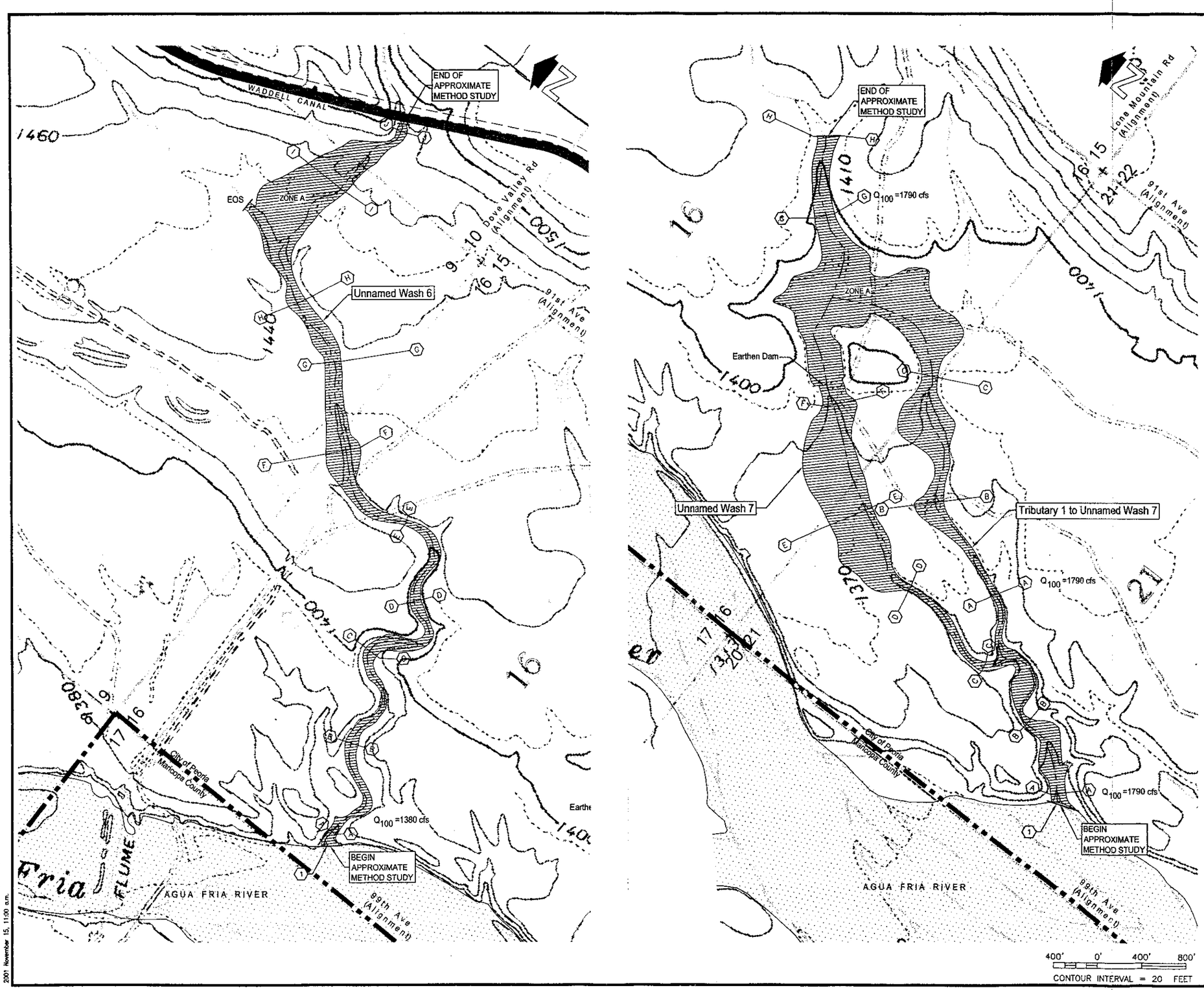
PORTION OF USGS QUADRANGLE BALDY MOUNTAIN



PORTION OF USGS QUADRANGLE BALDY MOUNTAIN

LEGEND

SPECIAL FLOOD HAZARD AREA, ZONE A	
EFFECTIVE SPECIAL FLOOD HAZARD AREA, ZONE AE	
END OF STUDY	EOS
CROSS SECTION LOCATION AND IDENTIFIER	A — A
100-YEAR PEAK DISCHARGE	Q_{100} = 860 cfs
HYDRAULIC BASE LINE	
CULVERT	
CORPORATE LIMITS	

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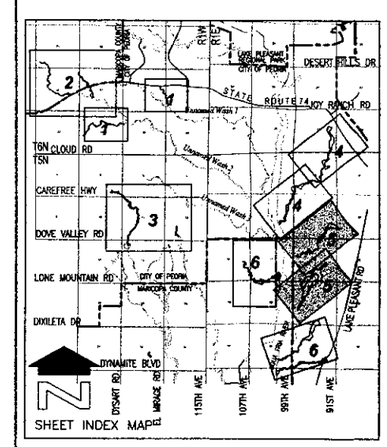

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODPLAIN WORK MAP APPROXIMATE METHOD REACHES F.C.D. CONTRACT NO. 99-45

Stantec Consulting Inc.
8211 South 48th Street
Phoenix, AZ 85044-5355 U.S.A.
Tel. 602 438 2200
Fax. 602 431 9562
www.stantec.com

	BY	DATE
DESIGN	MMZ	12.15.00
DESIGN CHK.	MCG	01.25.01
PLANS	HAR	12.15.00
PLANS CHK.	MMZ	01.12.01

PLATE 7

SHEET 5 OF 6

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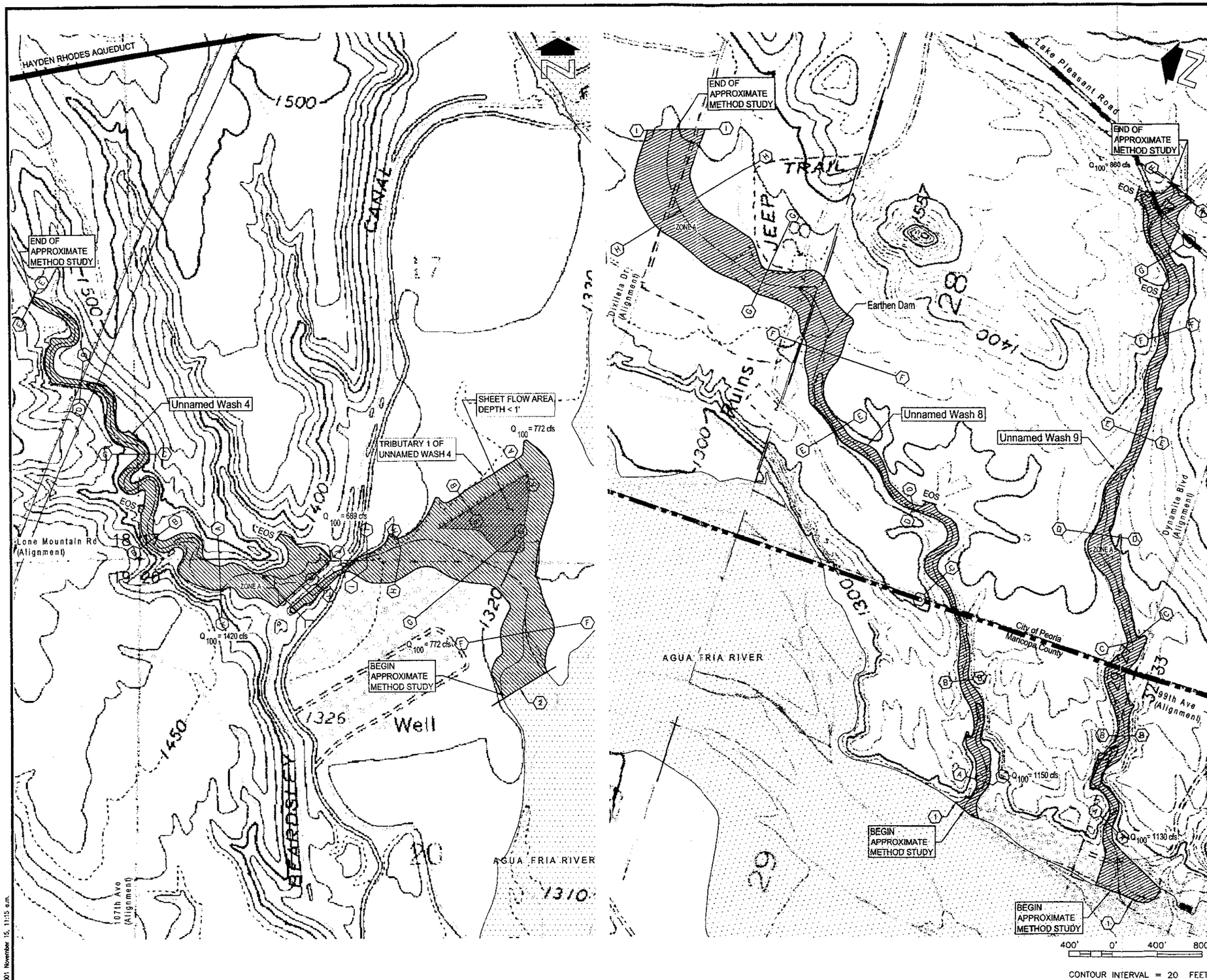
2001 November 15, 11:00 a.m.



LEGEND

SPECIAL FLOOD HAZARD AREA, ZONE A	
EFFECTIVE SPECIAL FLOOD HAZARD AREA, ZONE AE	
END OF STUDY	EOS
CROSS SECTION LOCATION AND IDENTIFIER	A — A
100-YEAR PEAK DISCHARGE	Q_{100} = 860 cfs
HYDRAULIC BASE LINE	
CULVERT	
CORPORATE LIMITS	

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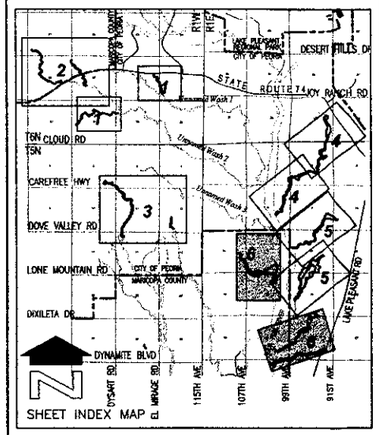

NO.	REVISION	BY	DATE
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1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

NORTH PEORIA AREA DRAINAGE MASTER PLAN FLOODPLAIN WORK MAP APPROXIMATE METHOD REACHES F.C.D. CONTRACT NO. 99-45

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8211 South 48th Street
Phoenix AZ 85044-5355 U.S.A.
Tel. 602.438.2200
Fax. 602.431.9562
www.stantec.com

	BY	DATE
DESIGN	MMZ	12.15.00
DESIGN CHK.	MCG	01.25.01
PLANS	HAR	12.15.00
PLANS CHK.	MMZ	01.12.01

PLATE 7

SHEET 6 OF 6

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2001 November 15, 11:15 a.m.

PORTION OF USGS QUADRANGLES BALDY MOUNTAIN AND CALDERWOOD BUTTE

BOOK 3 OF 3: H&H APP. O

This CD contains the watershed and hydraulic models developed as part of the North Peoria Area Drainage Master Plan, FCD 99-45. Watershed modeling was performed for both existing and future conditions for the 100-, 50-, 25-, 10-, 5- and 2-year storm frequencies for both the 6- and 24-hour durations. Separate future condition models for all storm events and durations were also developed that include modeling of the 100-year, 2-hour retention requirement. Watershed modeling was accomplished using the U.S. Army Corps of Engineers HEC-1 computer program v4.1 dated June 1998. The following is a listing of the watershed models file names and descriptions.

File Name	Description
Ex100-6.*:	Existing condition watershed model (both input and output) for the 100-year, 6-hour storm event
Ex100-24.*:	Existing condition watershed model (both input and output) for the 100-year, 24-hour storm event
Ex50-6.*:	Existing condition watershed model (both input and output) for the 50-year, 6-hour storm event
Ex50-24.*:	Existing condition watershed model (both input and output) for the 100-year, 24-hour storm event
Ex25-6.*:	Existing condition watershed model (both input and output) for the 25-year, 6-hour storm event
Ex25-24.*:	Existing condition watershed model (both input and output) for the 25-year, 24-hour storm event
Ex10-6.*:	Existing condition watershed model (both input and output) for the 10-year, 6-hour storm event
Ex10-24.*:	Existing condition watershed model (both input and output) for the 10-year, 24-hour storm event
Ex5-6.*:	Existing condition watershed model (both input and output) for the 5-year, 6-hour storm event
Ex5-24.*:	Existing condition watershed model (both input and output) for the 5-year, 24-hour storm event
Ex2-6.*:	Existing condition watershed model (both input and output) for the 2-year, 6-hour storm event
Ex2-24.*:	Existing condition watershed model (both input and output) for the 2-year, 24-hour storm event
Fu100-6.*:	Future condition watershed model (both input and output) for the 100-year, 6-hour storm event
Fu100-24.*:	Future condition watershed model (both input and output) for the 100-year, 24-hour storm event
Fu50-6.*:	Future condition watershed model (both input and output) for the 50-year, 6-hour storm event
Fu50-24.*:	Future condition watershed model (both input and output) for the 100-year, 24-hour storm event
Fu25-6.*:	Future condition watershed model (both input and output) for the 25-year, 6-hour storm event
Fu25-24.*:	Future condition watershed model (both input and output) for the 25-year, 24-hour storm event
Fu10-6.*:	Future condition watershed model (both input and output) for the 10-year, 6-hour storm event
Fu10-24.*:	Future condition watershed model (both input and output) for the 10-year, 24-hour storm event
Fu5-6.*:	Future condition watershed model (both input and output) for the 5-year, 6-hour storm event
Fu5-24.*:	Future condition watershed model (both input and output) for the 5-year, 24-hour storm event
Fu2-6.*:	Future condition watershed model (both input and output) for the 2-year, 6-hour storm event
Fu2-24.*:	Future condition watershed model (both input and output) for the 2-year, 24-hour storm event
Fr100-6.*:	Future condition w/retention watershed model (both input and output) for the 100-year, 6-hour storm event
Fr100-24.*:	Future condition w/retention watershed model (both input and output) for the 100-year, 24-hour storm event
Fr50-6.*:	Future condition w/retention watershed model (both input and output) for the 50-year, 6-hour storm event
Fr50-24.*:	Future condition w/retention watershed model (both input and output) for the 100-year, 24-hour storm event
Fr25-6.*:	Future condition w/retention watershed model (both input and output) for the 25-year, 6-hour storm event
Fr25-24.*:	Future condition w/retention watershed model (both input and output) for the 25-year, 24-hour storm event
Fr10-6.*:	Future condition w/retention watershed model (both input and output) for the 10-year, 6-hour storm event
Fr10-24.*:	Future condition w/retention watershed model (both input and output) for the 10-year, 24-hour storm event
Fr5-6.*:	Future condition w/retention watershed model (both input and output) for the 5-year, 6-hour storm event
Fr5-24.*:	Future condition w/retention watershed model (both input and output) for the 5-year, 24-hour storm event
Fr2-6.*:	Future condition w/retention watershed model (both input and output) for the 2-year, 6-hour storm event
Fr2-24.*:	Future condition w/retention watershed model (both input and output) for the 2-year, 24-hour storm event

Detailed Floodplain delineation mapping was performed for three separate watercourses totaling approximately 18 miles. The hydraulic analysis was performed using the U.S. Army Corps of Engineers HEC-RAS computer program v3.0 dated January 2001. That program is organized into project with each project containing geometry, flow and plan data files. Separate projects are created for each study watercourse. The associated data files are provided in separate folders on the CD.

Address D:\H&H TDN\Hydraulics

Name	Size	Type	Modified
Unnamed Wash 1		File Folder	2/8/2002 2:23 PM
Unnamed Wash 2		File Folder	2/8/2002 2:23 PM
Unnamed Wash 3		File Folder	2/8/2002 2:23 PM

APPENDIX P: CORRESPONDENCE

Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009-6399
(602) 506-1501
FAX: (602) 506-4601
TT: (602) 506-5859

July 5, 2000

MEMO TO: Michael Gerlach

FROM: Kofi Awumah

SUBJECT: North Peoria ADMS – Hydrology (First Draft)

The following are our comments on the hydrology model (HEC-1 model) submitted by Stantech Consulting.

The DDMSW was used to check one of the washes' sub-basin parameter. This was necessary since the model was developed using proprietary type software and not the public domain District's model.

a) The DDMSW could not reproduce most of the XKSAT values.

b) The DDMSW could not reproduce most of the Tc and R.

c) The DDMSW could not replicate some of the Kb values. It is not clear why intermediate values are used for the m and b values rather than the actual values. The use of Figure 5.5 , page 5-12 of the hydrology manual may be a more significant adjustment (to watershed size) to the Kb values.

d) Justify or explain the use of lower non-default (50%) values for RTIMP

e) The LAND USE types used appear to be different from those in the current hydrology manual

f) Routing Reach 207105, channel n value of 0.03 appear to be low.

g) Routing Reach 302303, channel n value of 0.03 appear to be low.

h) Routing Reach 301302, channel n value of 0.03 appear to be low.

i) Routing Reach 717718, channel n value of 0.045 appear to be low.

j) We recommend the use of a thin layer of mortar bedding beneath the upper few lifts of CSA. The mortar should contain a set-retarding admixture.

k) It appears some of the sub-basins have high unit discharges. Those sub-basins with unit discharges between 2500 to 3500 cfs per square mile (for the 6 hour storm) need to be reviewed and adjusted

l) Of the two frequencies, the 24 Hour 100 Year discharge should apply to Morgan City Wash while the 6-Hour applies to all the other washes.

m) Sub-basin S710 does not appear on the sub-basin exhibit.

6 July 2000
File: 82000146

FCDMC
2801 W. Durango Street
Phoenix, AZ 85009-6399

Attention: Kofi Awuhma, PhD, PE

Dear Mr. Awuhma:

Reference: Retention Requirements for the Future Condition Watershed Model
North Peoria Area Drainage Master Plan
FCD Contract No. 99-45

The future condition watershed analysis of both the 100-year 6- and 24-hour storms is to account for retention of the 100-year, 2-hour runoff from the proposed developments within the study area. Additionally, it is to be assumed that only 80% of the retention criteria is met, as specified in Section 2.9.2.2 of the Scope of Work (SOW). Guidance for this analysis is provided in the Flood Control District of Maricopa County Drainage Design Manual (Manual).

Based on information provided in the Manual (specifically Chapters 2 and 4, Volume 1 and Chapter 8, Volume II) two methods can be used to satisfy the retention analysis. These methods are as follows:

a) Calculate the volume of runoff for the developed portion of each subbasin using Equation 8.1. That equation is:

$$V = C\left(\frac{P}{12}\right)A$$

where: V = Volume of runoff, in acre-feet

C = Runoff coefficient

P = 100-year, 2-hour rainfall depth, in inches

A = Area of the developed portion of the subbasin, in acres.

Selection of runoff coefficients is based on Table 3.2 (Volume 1) and the types of proposed land use. The percent area of each land use type as it occurs within

each subbasin would be used to calculate a composite runoff coefficient for each subbasin. The resulting runoff volume for each subbasin would then be reduced by 20% and coded into the HEC-1 model using the diversion record set.

Because this method is dependent on the selection of a runoff coefficient based on a specific land use, it is best applied for areas with approved land use plans. Given the current status and history of change associated with the proposed master planned communities within the study watershed, this method is not recommended.

b) The 100-year, 2-hour runoff volume from the developed portion for each subbasin is accounted for as rainfall loss. This method involves the application of the Initial Loss plus Uniform Loss Rate (IL + ULR) rainfall loss technique for only those subbasins that are impacted by the proposed development. The Initial Loss portion of this technique would be a combination of the 100-year, 2-hour rainfall depth and the surface retention loss. The 100-year, 2-hour rainfall depth would be reduced based on the percent developed area of each subbasin regardless of the type of land use (i.e. commercial or residential) and would account for the 80% compliance criteria specified in the SOW. The resulting value would then be added to the surface retention loss computed for the natural area which would be reduced by the percent developed portion of each subbasin. The Uniform Loss portion of this technique would be the composite log averaged infiltration rate (XKSAT) computed for each subbasin in its natural state and then reduced by the percent developed area of each subbasin. Additionally, this method would consider any naturally occurring impervious area (i.e., rock outcrop) also reduced by the percent developed area.

Use of this method is independent of land use type. This eliminates potential errors associated with the projection of proposed land uses compared to what will actually be built. Given the uncertainty associated with the actual land use, in particular land use densities that will occur within the study area, this method is recommended for this study.

Consideration of future condition retention is required as specified in the SOW. It is recommended that the analysis be performed using the Initial Loss plus Uniform Loss method (Method 2 above). This method is more robust and places a greater degree of responsibility on the developer once the land use plan/densities are approved by the appropriate agencies. Method 2, is therefore, recommended for this study. However, any guidance, concerns/refinements and ultimate approval of this or any other method by the Flood Control District of Maricopa County is requested prior to proceeding with the analysis.

Sincerely,
STANTEC CONSULTING INC.

Mike Gerlach
E.I.T.

c. Marilyn DeRosa, RG, FCDMC

p:\82000146\correspondence\letters\kawuhma, retention requirements 070500.doc

FLOOD CONTROL DISTRICT
of
Maricopa County

2801 West Durango Street • Phoenix, Arizona 85009-6399
Telephone (602) 506-1501
Fax (602) 506-4601
TT (602) 506-5897

BOARD OF DIRECTORS
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Fulton Brock
Andrew Kunasek
Don Stapley
Mary Rose Garrido Wilcox

July 24, 2000

Mike Gerlach
Stantec Consulting Inc.,
8211 South 48th Street
Phoenix AZ 85044-2200

Re: Retention Requirements for Future Condition Watershed Model
North Peoria Area Drainage Master Plan
FCD Contract No. 99-45

Dear Mike

This is in response to your letter dated July 6, 2000 proposing two methods of accounting for the retention volume in the HEC-1 modeling effort and recommending one of these methods. We have some concerns with the selection of the second method

1. The STRTL (initial loss) portion of the "initial loss plus constant loss" method is also dependent upon land use and surface cover. Therefore the reason for not using method one is also applicable to the chosen method two, i.e., to use a method that is independent of land use since land use cannot be predicted with certainty for an non-zoned watershed.

2. The use of 100-year 2 hour rainfall depth directly in the model to account for retention volume is not time dependent. Method two suggests lumping surface retention with the 100 year 2-hour storm and thereby accounting for the required retention volume indirectly. This initial abstraction occurs at the beginning of the storm event while the typical retention basin volume is generated over a period of time (depending on the land use type for the sub-basin) during the 100 year storm. Therefore, method one that uses the land use run-off coefficient is time dependent and the more correct approach.

3. Mixing loss rate methods in one HEC-1 model (Green and Ampt and Uniform Loss) may create confusion for other users of the model in future.

Due to the above observations, it appears the chosen method of accounting for retention volumes for the future developed condition is more complicated than the simply computing the retention volume for each sub-basin and diverting this volume of discharge in a time dependent manner in the model.

If additional information is required, please contact me at (602) 506-4663.

Sincerely,

Kofi Awumah

Kofi Awumah, Ph.D., P.E.

Memo

Stantec

To: Kofi Awumah, Ph.D, P.E.

From: Mike Gerlach, P.E.

Stantec Consulting Inc.

File: 82000146

Date: 4 August 2000

Reference: Existing Condition Hydrology Submittal Comments North Peoria ADMP, FCD No. 99-45

The following is the response to the existing condition hydrology submittal comments as provided in your memo dated July 5, 2000.

General Comment:

The program that was used to assist in the development of the Clark unit hydrograph parameters is proprietary only in that a pre-and post-processor executable is used to pass and receive data directly to and from the MCUHP1 executable. All other input parameters are calculated using a spreadsheet and follow procedures and/or guidelines per the Flood Control District of Maricopa County Drainage Design Manual, Volume I, January 1995 (Manual).

Use of the DDMSW program was not required by the Scope of Work (SOW). Further more, there seems to be some data input limitations/restrictions that could lead to slightly different results. Results verification would more appropriately be obtained via the DDMS program. If it is desired that this study be conducted so that data can be incorporated into the DDMSW program, then we will need to discuss how best to restructure the data collection approach so that the project schedule is not adversely effected.

Comment a:

The calculation for XKSAT used by Stantec is as follows:

Log-Avg XKSAT = 10^a

$$\text{where } a = \frac{\sum_{i=1}^{n}(A_i log(XKSAT_i))}{\sum_{i=1}^{n} A_i}$$

and A_i = Area of each unique soil map unit as it occurs within a subbasin.

$XKSAT_i$ = XKSAT of each unique soil map unit as it occurs within a subbasin.

The following example for S100 is provided to check the calculations against DDMSW. The Unique soil map units and the corresponding areas and XKSAT values are as follows:

Map Unit	Area Acres	Bare Ground XKSAT in/hr
21	38.9	0.38
52	81.5	0.16
108	246.8	0.31

$$a = \left[\frac{(38.9)\log(0.38) + (81.5)\log(0.16) + (246.8)\log(0.31)}{38.9 + 81.5 + 246.8} \right]$$

$$a = -0.561$$

Log - Avg XKSAT is then adjusted for vegetative cover density (VCD). The VCD for this subbasin is 32%. The VCD correction factor is calculated using the equation associated with Figure 4.4 of the Manual.

$$C_k = \frac{V_c - 10}{90} + 1.0$$

$$C_k = \frac{32 - 10}{90} + 1 = 1.244$$

XKSAT(Adjusted) = $(0.27)(1.244) = 0.336^{in/hr}$

DDMSW only calculates the VCD correction factor to the nearest tenth. For S100 the correction factor would be 1.2 and this multiplied by XKSAT ($0.27^{in/hr}$) yields $0.32^{in/hr}$.

The difference in XKSAT values is therefore due to the number of significant digits and rounding of the VCD correction factor. This difference is not seen as significant to the overall watershed analysis.

Comment b & c:

T_c and R values could not be reproduced due to the selection of the K_b types. In DDMSW the selection of K_b types is limited to four "terrain/land use" types. For this study intermediate types are used based on Figure 5.5 of the Manual. These intermediate types are used for subbasins that share characteristics of two "base" K_b types; i.e., a portion of the subbasin can be classified by hillslope terrain (base type "C") and another portion can be classified by desert rangeland terrain (base type "B"). Or for subbasins that are, in general, not strongly characterized by either type.

A sensitivity analysis is performed on 10 subbasins that currently use the intermediate K_b values to determine if these intermediate values have a significant impact on the calculation of time of concentration (T_c). The results of this analysis are summarized below. Column 1 is the HEC-1 identifier of the subbasins for which this test is performed. Columns 2 through 4 are the intermediate K_b type, corresponding value of K_b and the resulting T_c, respectively. Column 5 is the upper base K_b type of the intermediate K_b type (i.e. if the intermediate type is B/C, then the upper type is C). Columns 6 and 7 are the correspond value of K_b and resulting T_c using the K_b type from Column 5. Column 8 is the lower base K_b type of the intermediate K_b type. Column 9 and 10 are the corresponding value of K_b and the resulting T_c.

Subbasin ID (1)	Kb Type (2)	Kb (3)	100-yr, 6-hr Tc hours (4)	Kb Type (5)	Kb (6)	100-yr, 6-hr Tc hours (7)	Kb Type (8)	Kb (9)	100-yr, 6-hr Tc hours (10)
S103	C/D	0.11	0.796	D	0.13	0.908	C	0.09	0.679
S106	C/D	0.10	0.679	D	0.12	0.779	C	0.09	0.625
S300	C/D	0.10	0.746	D	0.12	0.858	C	0.09	0.688
S400	C/D	0.10	0.850	D	0.12	0.983	C	0.08	0.717
S401	C/D	0.10	0.804	D	0.12	0.933	C	0.08	0.675
S708	C/D	0.10	0.529	D	0.12	0.604	C	0.08	0.454
S717	B/C	0.06	0.692	C	0.08	0.842	B	0.04	0.525
S725	B/C	0.06	0.917	C	0.08	1.138	B	0.04	0.688
S726	B/C	0.07	0.267	C	0.09	0.317	B	0.05	0.221
S727	B/C	0.07	0.621	C	0.09	0.746	B	0.05	0.488

Inspection of the computed T_c values for each K_b type for each subbasin shows that the equation is fairly sensitive to K_b. However, of more importance is the sensitivity of the resulting runoff hydrograph to K_b.

The T_c values and corresponding R values for the upper and lower base K_b types were coded into HEC-1 to compute runoff hydrographs. The results of the model are summarized in the following table. Column 1 is the HEC-1 identifier of the subbasins for which this test is performed. Columns 2 through 4 are the intermediate K_b type and the resulting 100-year, 6-hour peak discharge (Qp) and time to peak (Tp), respectively. Columns 5 through 7 are the upper base K_b type and the resulting 100-year, 6-hour peak discharge (Qp) and time to peak (Tp), respectively. Columns 8 through 10 are the lower base K_b type and the resulting 100-year, 6-hour peak discharge (Qp) and time to peak (Tp), respectively.

Subbasin ID (1)	Kb Type (2)	Qp cfs (3)	Tp hours (4)	Kb Type (5)	Qp cfs (6)	Tp hours (4)	Kb Type (8)	Qp cfs (9)	Tp hours (4)
S103	C/D	455	4.57	D	403	4.67	C	514	4.50
S106	C/D	686	4.47	D	600	4.58	C	729	4.42
S300	C/D	710	4.50	D	625	4.58	C	751	4.50
S400	C/D	1159	4.60	D	1025	4.67	C	1311	4.50
S401	C/D	769	4.53	D	674	4.67	C	781	4.42
S708	C/D	1336	4.33	D	1205	4.42	C	1431	4.25
S717	B/C	1625	4.47	C	1413	4.58	B	1922	4.33
S725	B/C	1153	4.70	C	964	4.92	B	1432	4.50
S726	B/C	860	4.13	C	774	4.17	B	928	4.08
S727	B/C	519	4.43	C	440	4.58	B	622	4.33

In general, the results of the sensitivity analysis seem to indicate that the use of intermediate K_b types approximate the results for the upper base K_b types than those for the lower base K_b types. Potentially, the most significant parameter that is effected by the selection of a K_b type is the resulting time to peak. The resulting time to peak between the upper and lower base K_b type ranges from 3 to 8 computational time steps. The accumulated effects of the difference in time to peak could become quite significant further downstream. Based on these results, it is our opinion that the use of intermediate values of K_b is justified.

Comments d & e:

Assignment of land use categories was based in guidance provided in the Manual, field reconnaissance and inspection of 1999 aerial photography. For those land uses that were not specifically referenced in the Manual (see Table 4.2a) such as gravel mining and airport, a representative equivalent category was assigned or a new category was created. Stantec will revise the assigned land use categories to more closely match the District default categories, specifically those categories available in the DDMSW program.

Assignment of land use parameters (i.e., IA, RTIMP and Veg. Cover) was based on guidelines provided in the Manual (see Table 4.2a), field reconnaissance and 1999 aerial photography. The land use parameters are therefore specific to what is present in the watershed and are not assigned by applying a factor to the default values in the Manual. The discussion in the TDN will be enhanced to make this more clear.

Comments f through i:

A detailed Manning's n-value estimate is in process for specific reaches of the watercourses within the watershed, specifically those reaches noted in Comments f, g & h. Upon completion of the n-value estimate, the hydrologic models will be

updated. The values currently in the model for those reaches are therefore temporary only.

The channel n-value for reach 717718 is adjusted to 0.045, as noted in comment i.

Comment k:

There are 19 subbasins that have unit discharges higher than what might be expected. The majority of these subbasins are located to the east of the Agua Fria River. For the subbasins with high unit discharges located west of the Agua Fria River, review of the subbasin input parameters shows that these subbasins typically have steep slopes with a high percent impervious. Therefore, high unit discharges for these subbasins is to be expected. For the subbasins with high unit discharges located east of the Agua Fria River, two factors effected the modeling results. As a result of the elimination of Subbasin S710 (see comment m) a data error occurred in all subsequent subbasin parameters. Modeling results for these subbasins should be disregarded. This error has been corrected and the 100-year, 6- and 24-hour models have been updated. The Unit discharges for these subbasins have been recomputed and reviewed for reasonableness. Many of these subbasins still have unit discharges higher than what might be expected. Review of the subbasin input parameters shows an high percentage of clay soils in this portion of the watershed. This results in very low infiltration rates, typically less than 0.05 inches per hour. The presence of the clay soils translates to a high percentage of rainfall excess and thus high peak discharges. The high unit discharges for these subbasins is to be expected.

Comment l:

A table listing the peak discharge at each operation for each storm will be added to the TDN. This table will also indicate which storm is the controlling storm. Additionally, comment cards will be added to the HEC-1 input files notifying futures users that both a 6- and 24-hour model is developed for the entire study area.

Comment m:

The drainage area for subbasin S710 was added to the drainage area of S709 during the refinement process of the watershed delineation. However, the "elimination" of the basin was only made on the Hydrology Plates and was not carried through to the models. The "elimination" also left a gap in the subbasin numbering. The "old" Subbasin S710 is re-numbered so that now there are not any gaps in the numbering sequence.

STANTEC CONSULTING INC.

Mike Gerlach, P.E.
Water Resources,
Project Engineer

P:\82000146\Correspondence\Memos\KAwumah PeoriaHydroSubmit 071400.doc

Gerlach, Michael

From: Kofi Awumah - FCDX [koa@mail.maricopa.gov]
Sent: Thursday, August 10, 2000 10:42 AM
To: 'mgerlach@stantec.com'
Cc: Marilyn DeRosa - FCDX; Kofi Awumah - FCDX
Subject: N. Peoria ADMS Exis. Hydrology Response to Comments.

I have gone over all your responses (dated August 4, 2000) to my comments (a through m) and accept your explanations as well as how you proposed to address all issues that need correction.
Regarding the use of the intermediate values (comments b & c) for terrain/land use in the selection of Kb values, I agree with you for the use of this method since the resulting discharges are significantly different from using the standard values.
You may therefore proceed to complete the existing condition hydrologic model for the watershed.

Thanks.

Memo

Stantec

To: Kofi Awumah
Maricopa County Flood Control District

From: Pat Ellison, P.E.
Stantec Consulting, Inc.

Date: 25 August 2000

File: 82000146

Reference: ***Land Use Classifications and Rainfall Loss Characteristics***
North Peoria Area Drainage Master Plan, FCD 99-45

Given the land use plan from BRW for the City of Peoria, we looked at the land use categories and noticed differences from the plan in comparison to the FCDMC's Hydrology Manual's land use categories. Ranges of land uses were identified from the plan and target densities were reviewed out of the Saddleback Heights Planned Development report, previously conducted by LVA. The following list of ranges has been compiled from the land use plan and the LVA report.

City of Peoria Land Use Plan Description (1)	Description Ranges du/acre (2)	Target Densities du/acre (3)
Residential	0 - 2.0	0.5
Residential	2.0 - 5.0	3
Residential	5.0 - 8.0	6
Residential	8.0 - 15.0	12
Residential	15+	18
Mixed Use		
Community Commercial		
Business Park/Industrial		
Park/Open Space		
Public/Quasi Public		
Lakes, rivers, and canals		
Resort development		

Using the above target densities, we reviewed the hydrology manual and determined the best land use category for each residential description, by taking the county's *zoning unit descriptions and determining the densities within the each category* (see attached Table 3-5). Non-residential land uses were reviewed to determine their best fit within the Industrial or Commercial categories. Land use identifications/zoning units were given to each of the city's land use descriptions, but are currently tentative until review by the FCDMC.

Rainfall loss characteristics were taken straight from Table 4.2a - IA, RTIMP, and Percentage Vegetation Cover for Representative Land Uses in Maricopa County, (Drainage Design Manual for Maricopa County-Hydrology, July 1995), for each of the land use categories. Effective land use values for the percent vegetative cover and IA were determined by multiplying each by the Base RTIMP and are listed in the attached Table 3-5.

Reference: Land Use Classifications and Rainfall Loss Characteristics

We request that you review the rainfall loss characteristics that we have determined (based on the target densities) for your concurrence. We realize that the developments that are currently in the planning stage for the North Peoria ADMP area may change and thus target densities may change. We have used the existing target densities as the best available information for giving us guidance on how the study area may be developed. Another approach would be a conservative approach in which we would simply assume the highest density for a given land use. Your guidance would greatly be appreciated.

STANTEC CONSULTING INC.

Pat Ellison, P.E.
Project Manager

Table 3-5 Attachment

c. File

mmz P:\82000146\Correspondence\Memos\KAwumah Peoria Rainfall loss 082500.doc

Table 3-5

Rainfall loss characteristics for each land use classification

Land-use Class (1)	Base RTIMP % (2)	Veg. Cover % (3)	IA in (4)	Effective Land use Values VCD % (5)	Effective Land use Values IA in (6)
ARP	50	5	0.10	5	0.10
COMM	80	75	0.10	15	0.02
DESERT	0	0	0.00	0	0.00
H20	100	0	0.00	0	0.00
IND	55	60	0.15	27	0.07
LDR	15	50	0.30	43	0.26
MDR	30	50	0.25	35	0.18
MFR_1	45	50	0.25	28	0.14
MFR_2	45	50	0.25	28	0.14
MFR_3	45	50	0.25	28	0.14
MFR_4	45	50	0.25	28	0.14
OPEN	0	0	0.00	0	0.00
PF	50	0	0.00	0	0.00
VLDR	5	30	0.30	29	0.29

Land-use Class	Description
VLDR	Very low density and low density residential = < 2.0 dwelling units per acre
LDR	Low density residential = 2.0 - 5.0 dwelling units per acre
MDR	Medium density residential = 5.0 - 8.0 dwelling units per acre
MFR_1	Multiple family residential = 8.0 - 15.0 dwelling units per acre
MFR_2	Multiple family residential = 15+ dwelling units per acre
MFR_3	Mixed use
MFR_4	Resort development, multiple family residential
PF	Public Facilities/Quasi-public (Community Centers/Ball Park)
COMM	Neighborhood/Community Commercial
IND	Business Park, multiple family residential
OPEN	Natural Desert Park/Open space
ARP	Airport
H2O	Water
DESERT	Unincorporated/undeveloped natural desert

Gerlach, Michael

From: Kofi Awumah - FCDX [koa@mail.maricopa.gov]
Sent: Tuesday, August 29, 2000 10:44 AM
To: 'Ellison, Patrick'
Cc: Marilyn DeRosa - FCDX; Gerlach, Michael; Zyburt, Melody; Kofi Awumah - FCDX
Subject: RE: North Peoria ADMP Future Condition Hydrology

I have reviewed the rainfall loss characteristics attached and do concur with your approach and the numbers derived therein. You may therefore proceed with the future condition hydrologic analysis using these loss parameters.
Thanks.

-----Original Message-----
From: Ellison, Patrick [SMTP:PEllison@stantec.com]
Sent: Monday, August 28, 2000 1:11 PM
To: Kofi Awumah - FCDX
Cc: Marilyn DeRosa - FCDX; Gerlach, Michael; Zyburt, Melody
Subject: North Peoria ADMP Future Condition Hydrology
Importance: High

Good Day Kofi:

Plesae review attached Memo.

Thanks!!

Pat Ellison

<<P:\82000146\Calcs\Excel\Future Conditions\Table_3-5.xls>>
<<KAwumah
Peoria Rainfall loss 082500.doc>> << File:
P:\82000146\Calcs\Excel\Future Conditions\Table_3-5.xls >> << File: KAwumah
Peoria Rainfall loss 082500.doc >>

Gerlach, Michael

From: Kofi Awumah - FCDX [koa@mail.maricopa.gov]
Sent: Thursday, August 31, 2000 10:21 AM
To: 'mgerlach@stantec.com'
Cc: 'pellison@stantec.com'; Marilyn DeRosa - FCDX; Kofi Awumah - FCDX
Subject: N.Peoria ADMS- Existing Condition Hydrology

I have reviewed the draft of the above report and have accepted it as the final report, subject to the following minor corrections:

1. Page 3-1, parageph 3, the last but one line should read "....analyses consists of HEC-1...."
2. Appendix D, the title of the last two pages in this appendix should read " Data Summary Descriptions for Tables D-4 and D-5", as there are no Tables D-6 and D-7 in the Appendix.

I have no technical issues regarding the HEC-1 modeling effort or the final discharges, etc. So you may finalize this aspect of the report.
Thanks.

Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009-6399
(602) 506-1501
FAX: (602) 506-4601
TT: (602) 506-5859

November 14, 2000

MEMO: Patrick Ellison, Stantec Consulting Inc.
FROM: Kofi Awumah
CC: Marilyn Derosa, FCD.
SUBJECT: North Peoria ADMS – Unnamed Tributary 3 HEC RAS Preliminary.

The following are my comments.

1. The convention for our floodplain maps are that the GR stations are measured from left to right, looking downstream. The reference point in the GR data for the hydraulic baseline should be either 10,000 feet for large washes or 1,000 feet for smaller washes, this number being chosen such that none of the stations (spanning the floodplain width) will become negative in value. Thus a station of value less than 1000 is on the left side of the hydraulic baseline while stations more than 1,000 is on the right side. As currently modeled, it is not possible to determine the station for the hydraulic baseline, nor can the station zero, from which all stations are measured cannot be identified.

2. It is not clear why the reach length of the downstream cross section (River Station 0.185) is not equal to zero, as the starting cross section.

3. Please provide the elevation numbers on the contour lines to enable us check the floodplain elevations with that plotted on the maps. Only the index numbers may be adequate for this purpose.

4. Islands should not be shown on the maps unless they are modeled as islands in the HEC-RAS. The island shown at cross section 0.240 has to be reviewed since the water surface elevation is so close to the ground elevation of the island.

5. Comments in GR data.

Gerlach, Michael

From: Kofi Awumah - FCDX [koa@mail.maricopa.gov]
Sent: Wednesday, November 15, 2000 10:38 AM
To: 'mgerlach@stantec.com'
Cc: 'pellison@stantec.com'; Kofi Awumah - FCDX
Subject: N. Peoria ADMS - Hydrology Questions

Hi Mike:
Per our discussion yesterday, here are my answers.

1. Rounding off Discharge values - Round them off to the nearest 10 for unnamed tributaries.
2. Regarding whether to mix the 6 hour and the 24 hour peak discharges for the floodplain delineation, you may do so but with the following condition: the upper reaches may be the 6 hour while the lower reaches may be the 24 hour if necessary. What we do not want is jumping from 6 hour to 24 hour from cross section to cross section. If the differences are less than 10 percent or do not change the floodplain significantly, then you are better off sticking to one frequency type for an entire wash.

Flood Control District of Maricopa County
2801 West Durango Street
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(602) 506-1501
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TT: (602) 506-5859

November 16, 2000

MEMO: Patrick Ellison, Stantec Consulting Inc.
FROM: Kofi Awumah
CC: Marilyn Derosa, FCD.
SUBJECT: North Peoria ADMS – Unnamed Tributary 2 HEC RAS Preliminary.

The following are my comments.

1. Round off reach lengths to nearest whole numbers. Also round off the GR stations and elevations to the one decimal place.
2. It is not clear how the starting river station and discharge were determined. It is obvious that the modeling starts at the confluence with Unnamed Tributary 1. We need to discuss this.

3. Please provide the elevation numbers on the contour lines to enable us check the floodplain elevations with that plotted on the maps. Only the index numbers may be adequate for this purpose.

4. Extend the GR stations in the HEC-RAS models at the following river stations:
   0.756 – Left
   0.875 – Right
   2.824 – Right
   3.630 – Left
   3.709 – Left
   3.736 – Left
   4.611 – Right
   4.951 – Left
   5.713 – Left
   6.172 – Left
   6.462 – Left
5. The definition of THALWEG as used in the model and shown on the maps need to be discussed. Thalweg should be changed to HYDRAULIC BASELINE which is not the line joining the lowest points in the channel.
6. The discharges used in the model were difficult to determine. From Table 3-16, I obtained the following that I presume were the correct discharges. Confirm these.

River Station	Discharge	HEC-1 ID	Frequency
0.263	7300	C105	24 HR.
1.640	4700	C207	24HR
2.614	4600	C207R	24HR
4.951	4400	C206	24HR
5.938	3400	C205L	24HR
6.172	2900	C204	6HR
6.776	2000	C203R	6HR

It also appears that we might as well adopt the 24 hour discharges for the entire wash.

7. I will like to discuss moving the location of some of the River Stations in the model with you.

Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009-6399
(602) 506-1501
FAX: (602) 506-4601
TT: (602) 506-5859

December 7, 2000

MEMO: Mike Gerlach, Stantec Consulting Inc./
FROM: Kofi Awumah
CC: Marilyn Derosa, FCDMC; Pat Ellison, Stantec Consulting

SUBJECT: North Peoria ADMS – Unnamed Tributary 1 HEC RAS Preliminary.

I have reviewed the HEC-RAS model and the floodplain map with few comments.

1. The comments regarding the discharges for Unnamed Tributary 2 also apply to this tributary. We need a table to indicate which concentration points apply to which reaches.

2. Why was the starting water surface elevation set at critical depth? The water surface elevation at the confluence with Unnamed Tributary 2 is known and this becomes the starting elevation.
3. Please provide the elevation numbers on the contour lines to enable us check the floodplain elevations with that plotted on the maps. Only the index numbers may be adequate for this purpose.

4. Extend the GR stations in the HEC-RAS models at the following river stations:
   1.374 – Right
   1.675 – Right
   2.347 - Right
   4.839 – Right
   5.969 – Right
5. There were several gliches on the maps that need to be corrected.

Transmittal

Stantec Consulting Inc.
8211 South 48th Street
Phoenix, AZ 85044-5355 USA
Tel: (602) 438-2200 Fax: (602) 431-9562
www.stantec.com

Stantec

To:	Flood Control District of Maricopa County	Sender:	Mike Gerlach, P.E.
		☐	For Your Information
Attention:	Marilyn DeRosa, RG, Kofi Awumah, Ph.D., P.E.	☐	For Your Approval
		☑	For Your Review
Date:	1 February 2001	☐	As Requested
File:	82000146		

Reference: **North Peoria Area Drainage Master Plan**

Attached is a set of preliminary floodplain/floodway maps for Unnamed Wash 1, 2 and 3 and floodplain maps (including cross section locations) for the approximate method reaches. Included with this submittal are the HEC-RAS models for the three Unnamed Washes. The models include three profiles. Profile number one is the 100-year floodplain profile. Tables 1 through 3 lists the peak discharges at each flow change location for Unnamed Washes 1, 2 and 3, respectively. Profiles 2 and 3 are for the floodway analysis, methods 4 and 1, respectively. Floodway modeling is based on the energy gradeline per guidelines set forth in the State Standards as all three washes have 3 consecutive cross sections that defaulted to critical depth. Also included are the normal depth calculations with Manning's n-value estimations used in the approximate method floodplain analysis.

Table 1

Modeling peak discharges for Unnamed Wash 1

River Reach	Controlling Peak Discharge	HEC-1 Concentration Point	Model Results	
			6-Hour	24- Hour
6.312 – 5.917	750	S100	746	512
5.862 – 4.629	1,190	C102R	1,185	967
4.613 – 3.073	2,330	C103R	2,331	2,058
3.015 – 1.367	2,900	C104	2,901	2,682
1.286 – 0.046	3,200	C105L	3,202	3,031

Reference: North Peoria Area Drainage Master Plan

Table 2

Modeling peak discharges for Unnamed Wash 2

River Reach	Controlling Peak Discharge	HEC-1 Concentration Point	Model Results	
			6-Hour	24- Hour
6.789 – 6.218	1,750*	C203R	1,954	1,746
6.160 – 5.974	2,910	C204	2,913	2,913
5.927 – 4.974	3,380	C205L	3,345	3,378
4.939 – 2.656	4,420	C206	4,325	4,421
2.625 – 1.677	4,570	C207R	4,471	4,573
1.629 – 0.308	4,680	C105R	4,567	4,684
0.252	7,300	C105	6,847	7,297

Note: * The 24-hour peak discharge is used for this reach for consistency.

Table 3

Modeling peak discharges for Unnamed Wash 3

River Reach	Controlling Peak Discharge	HEC-1 Concentration Point	Model Results	
			6-Hour	24- Hour
4.540 – 4.229	1,220	S301	1,216	959
4.197 – 3.257	1,990	C301	1,985	1,787
3.168 – 1.690	2,200	C302	2,203	2,042
1.641 – 0.185	2,570	C303	2,567	2,414

The are two special problems that are addressed in this submittal. The first is the stock tank along Unnamed Wash 1. Overtopping of the stock tank is being accomplished using an in-line weir. The second is a flow break-out location along Unnamed Wash 1. A weir calculation for the break-out location based on the water surface elevation resulted in a peak discharge of approximately 20 cfs for the

Reference: North Peoria Area Drainage Master Plan

break-out. Because of the insignificance of this discharge the break-out is considered to be negligent and is therefore not considered in the analysis.

Finally, we would like to meet to discuss solutions for matching the Unnamed Wash floodways to that of the Agua Fria River. The Agua Fria River study contractors did not provide a means for matching in and the topography at the confluence makes this transition difficult.

STANTEC CONSULTING INC.

Mike Gerlach, P.E.
Water Resources Engineer
mgerlach@stantec.com

Attachments:
Map set 16 sheets
Diskette of HEC-RAS models
Normal depth calculation output

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Memo

Stantec

To: Kofi Awumah, Ph.D., P.E.
Flood Control District of
Maricopa County

From: Mike Gerlach, P.E.
Stantec Consulting, Inc

Date: 28 March 2001

File: 82000146

Reference: NORHT PEORIA ADMP FEMA SUBMITTAL

Watershed models have been prepared for the entire North Peoria Area Drainage Master Plan (NPADMP) study area, however only a portion of this area is tributary to the floodplain study limits. Additionally, the watershed modeling limits encompass watercouses (Twin Buttes Wash, Caterpillar Tanks Wash and Morgan City Wash) with existing floodplain delineations and the results of the NPADMP watershed modeling are significantly different than what was used to delineate those watercourses. Our recommendation is to submit the entire study area with the portions watershed study area contributing to the floodplain delineation reaches highlighted in some fashion. Additionally, a table listing the regulatory peak discharges associated with the floodplain delineation reaches would be provided. Please inform us as soon as possible if this is acceptable.

STANTEC CONSULTING INC.

Mike Gerlach, P.E.
Water Resources Engineer
mgerlach@stantec.com

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Transmittal

Stantec Consulting Inc.
8211 South 48th Street
Phoenix, AZ 85044-5355 USA
Tel: (602) 438-2200 Fax: (602) 431-9562
www.stantec.com

Stantec

To:	Flood Control District of Maricopa County	Sender:	Mike Gerlach, P.E.
		☐	For Your Information
Attention:	Kofi Awumah, Ph.D., P.E.	☑	For Your Approval
Date:	27 April 2001	☑	For Your Review
File:	82000146	☐	As Requested

Reference: North Peoria Area Drainage Master Plan

Please find the full FEMA submittal package for your review and approval. Included in this submittal are the hydrologic and hydraulic analyses, supporting calculations and map exhibits. Hydrology for the entire watershed is included as per our discussion. Hydraulic analysis map exhibits include floodplain maps for both the detailed and approximate method study reaches as well as draft FIRM panels and flood profiles. Reduced scale floodplain maps will be included in the final submittal as will paper output of the HEC-RAS models. Digital files of the hydrologic and hydraulic models are provided on CD in Appendix O of the report. The report is broken into two volumes. The text is provided in Book 1 and the supporting calculations documented in the appendicies are provided in Book 2. Map exhibits are separate for this submittal, but will be folded for inclusion in Book 1.

STANTEC CONSULTING INC.

Mike Gerlach

Mike Gerlach, P.E.
Water Resources Engineer
mgerlach@stantec.com

cc Kelli Sertich, AICP

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Zyburt, Melody

From: Gerlach, Michael
Sent: Tuesday, May 01, 2001 1:55 PM
To: Zyburt, Melody
Subject: FW: North Peoria

-----Original Message-----
From: Kofi Awumah - FCDX [SMTP:koa@mail.maricopa.gov]
Sent: Wednesday, February 14, 2001 7:37 AM
To: 'Gerlach, Michael'
Subject: RE: North Peoria

Mike:
Okay, set them to 10 minutes minimum.

-----Original Message-----
From: Gerlach, Michael [SMTP:MGerlach@stantec.com]
Sent: Tuesday, February 13, 2001 3:47 PM
To: Kofi Awumah - FCDX
Subject: RE: North Peoria

The subbasins and Tc, in minutes are

Subbasin Id	Existing	Future
S710	16.65	8.75
S711	16.00	8.50
S712	9.25	5.50
S713	13.00	7.75
S714	13.75	9.50
S723	17.00	9.75

All these subbasins area on the east side of the Agua Fria River and have very low infiltration rates with varying degrees of impervious area associated with development. Also notice that even in the existing conditions subbasin S712 has a Tc less than 10 minutes (which I obviously forgot about until now).

> -----Original Message-----
> From: Kofi Awumah - FCDX [SMTP:koa@mail.maricopa.gov]
> Sent: Tuesday, February 13, 2001 12:39 PM
> To: 'Gerlach, Michael'
> Subject: RE: North Peoria
>
> What were the existing Tc like? Were they much higher than 10 minutes?
>
> -----Original Message-----
> From: Gerlach, Michael [SMTP:MGerlach@stantec.com]
> Sent: Tuesday, February 13, 2001 11:09 AM
> To: Kofi Awumah - FCDX
> Subject: North Peoria
>
> Kofi,
>
> I was looking into the future conditions model this morning